THE LANCET

Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

227

IN TWO VOLUMES ANNUALLY

VOL. CCXI.

VOL. II. FOR 1926.

ONE HUNDRED AND FOURTH YEAR.

EDITED BY

SIR SQUIRE SPRIGGE, M.A., M.D. CANTAB., F.R.C.S. ENG.,

AND

EGBERT MORLAND, B.Sc., M.B. LOND., M.D. BERNE.

LONDON
PUBLISHED BY THE PROPRIETORS, THE LANCET LIMITED, NO. 423, STRAND, AND NO. 1, BEDFORD STREET, STRAND, IN THE COUNTY OF LONDON, AND PRINTED BY HAZELL, WATSON & VINEY, LD., 52, LONG ACRE, W.C. 2.
MCMXXVI

INDEX TO VOLUME II., 1926.

☞ *Readers in search of a given subject will find it useful to bear in mind that the references are in several cases distributed under two or more separate but nearly synonymous headings—such, for instance, as Brain and Cerebral, Heart and Cardiac, Liver and Hepatic, Child and Infant, Goitre and Thyroid, Diabetes, Glycosuria and Sugar, Eye Ophthalmic, and Vision, Lunacy and Mental Disease, Arsenobenzol and Salvarsan, &c, &c., and that regional headings are more frequently used than pathological Institutions and Corporations with the right to the prefix Royal will be found under that prefix, with the exception of Hospitals, which will be found under that heading; and Medical Societies, which are separately indexed under Societies All Universities are indexed under the word University (A.) = Annotation, (C) = Correspondence, (N I) = New Inventions, (L A) = Leading Article, (M L) = Medico-legal, (M T T) = Modern Technique in Treatment, (O) = Obituary (P.I) = Parliamentary Intelligence, (R.) = Review, and (R and A R) = Reports and Analytical Records*

A Concordance of page numbers and dates of Issue will be found at the end of the Index.

A

Abdomen, Acute, Treatment of the (Zachary Cope) (R), 607
Abdominal and tubal pregnancy case of simultaneous (M Sourasky), 650, pregnancy, case of 905, 1221, surgery, anæsthesia in, discussion on, 285, (L A), 293, tuberculosis in children 1013
Abel, A L, on treatment of œsophageal cancer, 1007, (C), 1141
Aberdeen hospital development, 873
Abortion, ætiology of, 924
Abraham, J Johnston Justice for Homer Bostwick (C), 625
Abscess, acute retropharyngeal, in childhood (Douglas Guthrie), 548
Abstracts a new journal of, 1304
Accidents and hospitals (L A), 864, fatal, in mining industry (P I), 313, garage, 1095, London street 1085, 1293, motor, hospitals and, 251, 753 to pedestrians in London (P I), 313, street, motor bicycles as cause of (P I), 210, with electricity 1201
Achard C Troubles des Échanges Nutritifs (R), 23
Acid milk in infant feeding 322, (L A), 341
Acidosis and insulin (A), 1228, eosinophilia and (C), 880, in relation to operation 792
Actinotherapy at Glasgow, 988, 1046
Activated sludge process of sewage treatment (H T Calvert) 1149
Adam James Asthma Its Radical Treatment 2nd edit (R), 651 (C), 880
Adami John George (O), 522, tribute to, 883
Adams A W on treatment of congenital club foot 1114
Adams J I on gangrene of the extremities 1216
Addisonian anæmia see under Anæmia
Adenoids, removal of, 675, tonsils and, 130
Adhesions natural formation of acquired (Sir George Lenthal Cheatle) 898
Adie W J on blood pressure and ear disease, 1268, on cerebral localisation in the clinical subject 1217, on spastic paralysis 602
Adrenalin history of, 200 in aplastic anæmia action of (A G Gibson), 948
Adulteration of food (A) 718
Advertisements in the press, medical, 837
Advertising health 788
Advisory Council for Scientific and Industrial Research appointments to 583
Æther parties 1334
Affleck R Cunningham Pasteurisation of milk (C), 57[illegible]
Africa South, see S Africa
Africa tropical yaws and syphilis in mass treatment with bismuth arsenic compounds (C) 43
Agate, H St Arnaud, Pathological service of the general hospital (C), 624
"Agla" micrometer syringe apparatus 529
Agraphia über die Agraphie und ihre lokaldiagnostischen Beziehungen (G Herrmann and O Pötzl) (R), 1116
Air to hospital, by, 541, evacuation of wounded by, 529
Air Force fatalities in the (P I) 355
Albuminuria adolescent (H H Bashford) 1305
Alcoholic nerve block for pain in malignant disease (A), 243
Alcoholism in ancient Greece and Rome (A), 866
Alexander, Sir Sidney, Treatment of varicose veins by injection 176
Alexandra Day collections, 829
Alkalosis in relation to operation 792 treatment by rectal ammonium chloride and intravenous sodium chloride (R Chalmers), 1267
Allergic Diseases (W Storm van Leeuwen) (R), 654
Allergy, What is ? (A) 1021
Allisatin tablets (R & A R) 1118
Almoner's department an (St Thomas's), 263
Alvarenga Prize of College of Physicians of Philadelphia, 1139 1246
Alzheimer's dementia, 821
Ambulance Association, St John in India 249
America see U S A
American College of Surgeons honorary fellowships for British surgeons, 1089
American Public Health Association, 55th annual meeting 922
Amœba, cultivation of the 35
Amœbiasis, arsenical drugs in 824
Amœbic dysentery, see Dysentery amœbic
Amputations Modern Methods of (Thomas G Orr) (R) 390
Amputations and artificial limbs (A) 1177
Anæmia Addisonian, sprue and (H B Newham R M Morris and P H Manson-Bahr), 269 (C) 408 aplastic action of adrenalin in (A G Gibson), 948 Pernicious, Leucæmia and Aplastic Anæmia (J P McGovan) (R), 861
Anæsthesia acidosis of, alleviation of, 179 ethylene (A) 1179 ethylene and carbon monoxide poisoning (A) 138 future of 331 in abdominal surgery, discussion on 285 (L A) 293, in goitre operations 179 in relation to cardiovascular affections, discussion on 332 in urological surgery 179, (C) 581 intratracheal (Stanley Rowbotham), 583 Local in Oto Laryngology and Rhinology (J J King) (R) 1272 physiology of respiration in relation to 123 posture and (A), 869 spinal accidents of 824 in intussusception of infants (Hamilton Bailey) 618
Anæsthetics gaseous some physical factors in the administration of, 133 the newer 331
Analysis, chemical, errors of judgment in (A) 397
Anaphylactic shock, new theory of, 925
Anatomie des Membres (Ch Dujarier) 2nd edit (R) 1117
Anatomy Part I of Atlas of History of Medicine (J G de Lint)(R) 811, the significance of (G Elliott Smith) (Thomas Vicary lecture), 943
Ancoats Hospital, Manchester, 837
Andover, medical freeman of, 782
Angina pectoris (A), 1020
Anginal pain and raised blood pressure, treatment of, by diathermy (John Hay and Phœbe Ince), 799
Angines de Poitrine, Les (Louis Gallavardin) (R), 185
Angiostaxis (Hunterian lecture) (H Letheby Tidy), 365
Angostura bitters (R & A R), 128
Aniline poisoning, case of (John Inkster), 752
Animals, experiments on (L A), 1174
Ankylostomiasis, chenopodium for (C), 521 treatment of (Clayton Lane) (M T T), 346 (C), 521, 624
Anomaloscope, Nagel's, 499
Anthrax from shaving brushes, 52
Anthropologist, an, on John Bull (L A), 865
Anxiety states in the elderly, 820
Aorta, syphilis of heart and (F W Price), 61
Aortic succussion heard at 12 ft distance, acute dilatation of stomach with (N W Snell and L H Savin), 279
Aphasia, our knowledge of (L A) 814
Apoplexy, ventricular puncture in (Hildred Carlill), 1212
Appeal, an (C), 1192, the right of (L A), 913
Appendicitis, case of perforated gastric ulcer with (C P G Wakeley) 752
Apples, arsenic in (A) 81
Appleton J L T, Bacterial Infection (R), 186
Appointments weekly lists of, 51, 104, 157, 212 262, 314, 362, 412, 526, 579, 629 684 732 784, 835 885, 934, 985, 1044 1094 1148, 1200 1249 1303, 1351
Army, health of in 1924 (A), 82, Manual of Sanitation (R), 106 pensions, medical reports and (P I), 46, venereal disease in the (P I), 46, 313, *and see under* Services
Arneth count the (A), 661
Arris and Gale lecture on cholecystography (Stanford Cade) 1
Arsenic in apples (A) 81
Arsphenamines, standardisation of (A), 964
Arterial hypertension 514
Arthritis, chronic non specific protein injections in (C), 42 149, 203, and rheumatism vaccine treatment of, 1012
Arthritis deformans ætiology and treatment of, 1321, rheumatoid discussion on 180
Artificial limbs, adjustment (A) 1072, amputations and (A) 1177 supply of (C) 1191 1244
Artificial pneumothorax, bilateral selective (A), 242

Artificial silk inflammability of 511
Artificial sunlight treatment (P I), 15
Arvedson, J, Medical Gymnastics and Massage in General Practice 2nd edit (R) 812
Ashamed to beg (C) 979, 1037
Askey, S G New dangerous drugs regulations (C) 203
Aspergilli the (A) 817
Aspirin a large dose of (C), 256
Assessors technical, judicial value of (M L) 88
Association of Special Libraries and Information Bureaux, 3rd Conference of 19
Asthma Its Radical Treatment (James Adam) 2nd edit (R), 651 Hay fever and (Ray M Balyeat) (R), 654
Astronomy and letters (C), 1087
Asylum system hospitalisation of the (A), 557
Aub, Joseph C and others Lead Poisoning (R) 1111
Auden G A Sophocles and confusional insanity (C) 520
Aural disease bathing and (A), 763
Auricular Fibrillation (J G Emanuel) (R) 388 some points in prognosis of (H Wallace Jones) 610
Auricular flutter in infancy (F J Poynton and W G Wyllie), 371
Australia New South Wales report of Inspector General of mental hospitals 253
Barber, H W Treatment of chilblain (M T T) 1180 1232, on eczema 519
Barber, Hugh, on acute nephritis in children 601
Barber's chair dangers of the, 1251
Barbituric derivatives 1287
Barcroft, J Respiratory Function of the Blood Lessons from High Altitudes (R), 1323
Barendt, Frank Hugh (O) 979
Barger, G, on recent progress in the chemistry of thyroxin, 200
Barham, G F, Mental hospitals and their relation to general and other special hospitals, 986
Barkas, Mary R, Tonic spasm of the eyes in conjugate deviation, 330 and Dawson, W S Somnifen treatment in the psychoses, 1155
Barnett the late Dr Lawrence 900
Baronsfeather C G S, Pasteurisation of milk (C), 730
Barr, Sir James, approaching retirement of, 820
Barris J D on methods of inducing abortion 379
Bartlett F C and Myers Charles S Text book of Experimental Psychology, 3rd edit (R) 501
Bartlett Willard The Surgical Treatment of Goitre (R) 1170
Barton, F Alex Heliotherapy natural versus artificial (C), 529
Barton upon-Irwell new hospital at 100
Barwell Harold Spasm of the glottis in adults and children (M T T) 33
Basal Ganglia and the Extra-Pyramidal

death of 1027—Hospitals in Prussia statistics of 621—Infectious diseases in Germany, 727—Inundation dis[illegible] an 401—Iodised salt and the prevention of goitre, 1288—Kraepelin Prof., death of 825—Meat poisoning epidemic of 250—Medical press articles in 621—Medical women 1027—News items 1028—Overcrowding of the medical profession 219—Patent medicine nuisance, 1027—Plasmochin, 82[illegible]—Prosecution of a medical man 401—Scarlet fever virus of 1027—Serum supervision of preparation of 401—Synthaline 1288—Tuberculosis new remedy for, 825—Typhoid, epidemic of in Hanover 824—Voronoff's operation, 403

Berlin post graduate medical courses in 309, 516
Bermuda fly prevention in, 686
Bernard L L Instinct A Study in Social Psychology (R), 237
Bertwistle, A P, On cerebral localisation 1218 a dressing table (N I) 554 and Shenton F W H, Descriptive Atlas of Visceral Radiograms (R) 608
Best C H, The dog as test object (C) 1192
Bezançon, F, and Philibert A, Précis de Pathologie Médicale, Vol I Part I (R) 500
Bibliographies, the R S M and (C) 203
Bile passages functions of, in relation

high from the clinical aspect (Sir Humphry Rolleston) 1014, 1203, Respiratory Function of the Lessons from High Altitudes (J Barcroft) (R), 1323
Blood sugar in the normal and diabetic (C. D Shapland) 589, studies in (Elsie Porter and George J Langley), 947
Blood transfusion discussion on, 280, in children's practice (C Hope Carlton), 850; in relation to operation, 791, reaction to (L A) 557 (C.) 682, technique of (Paul C Gibson) 375, (C.), 520 574
Blumer, F Milnes, Fractures of the anatomical neck of the humerus without apparent direct violence, 22
Board of Control and lunacy certification (P I) 312, annual report of (A) 557, 651, change of address, 1245
Boarding schools management of infectious diseases in (A I Simey), 1057, (C.) 1140
Boase, Arthur J, Some recent studies of dysentery a correction (C), 97
Bolivia, Red Cross in 631
Bolton M O H s report, 1241
Bombay, cerebro spinal fever in (P T Patel), 539 reorganisation of public health activities in 567 women factory workers in (P I) 313
Bond W E and Rows R G Epilepsy A Functional Mental Illness (R.) 907
Bone, Inflammatory and Toxic Diseases of (R. Lawford Knaggs) (R), 705, thyroid tumours in 1239
Bonney, Victor Carcinoma of cervix 855, *operation for creating an* abdominal "shelf" in visceroptosis in women 487
Bony lesions, case with multiple 808
Bookkeeping for doctors a method of, 838
Bootle, M O H s report, 71, S M O s *report*, 72
Borderland cases of mental deficiency, *1235 1236*
Borstal lads, application of Porteus maze tests to 100 (R F Jarrett), *1059*
Bostock Edward Ingram (O), 628
Bostwick, Homer justice for (C), 625
Bourne, Aleck, The scope of Cæsarean section, 768, treatment of contracted pelvis when first seen during labour, 1001
Bourne, Geoffrey The cardiac circulation and disease, 491
Bourne, Wesley, Alleviation of the acidosis of anæsthesia 179
Bournemouth, M O H 's report, 571
Bournville products, 1354
Bousfield, Paul Functional Nervous Disorders (R.) 502
Bradford M O H s report, 875
Bradford, Sir John Rose, Harveian oration on the debt of medicine to the experimental method of Harvey 839
Bradshaw, the late Dr J C, 983
Bradshaw lecture on the reconstructive surgery of the hip (Ernest W Hey Groves) 1055 on the theory of diagnosis (F G Crookshank), 939, 995, 1202
Brain and Cerebellum Pathologie du Cerveau et du Cervelet (Fasc XIX of Nouveau Traité de Médecine) (R.), 69
Brain, weight of the, 403
Bramwell, Edwin *on migraine* 384
Brazil, housing problems in, 631
Bread, Ryvita crisp (mixed) (R & A R.), 292
Breakey, S F and Clayton, F H A, Case of infection with *Bacillus dysenteriæ* (Flexner), 541
Breast cancer *of*, Ministry of Health circular, 611, 671
Breeding animals, research in, 341
Brentnall, E S, on spastic paralysis in children 1064
Bridges John Henry, Life of (Susan Liveing) (R) 1014
Brighton guardians and a nurses' home, 1252, M O H 's report, 571, Poor-law institution 807
Briscoe Grace, Unilateral phrenic paralysis clinical applications of an experimental study, 56
Bristol, S M O 's report, 679
Bristow, W Rowley on fractures of upper end of femur in adults, 1270
British Association meeting at Oxford, presidential address (L A) 293
British Charities Association annual meeting, 1351
British Empire Cancer Campaign (L A), 134, 834
British Hospitals Association, annual meeting and conference of (A), 32
British Institute of Philosophical Studies, programme of lectures 579
British Social Hygiene Council, address on women's organisations at the annual meeting, 159
British Medical Association annual meeting at Nottingham (L A) 241—Council dinner 884—Hastings lecture, 1302—Proceedings at annual meeting Advertisements requiring membership of a medical organisation 231 Africa, South medical profession in 195 anæsthesia and anæsthetics discussions and papers on 283 331 332 ante natal work and the Midwives Act, 229, biliary tract recent developments in our knowledge of the discussion on 233 blood transfusion in the treatment of disease discussion on 280 books shown at, 289 B M A. and Parliament the, 228 carcinoma of breast, post-operative treatment of, 285, cerebral tumours discussion on 282 certification of injury under Workmen's Compensation Act 229 charities, medical 232 contracted pelvis induction of premature labour in discussion on 380 cottage hospitals medical attendants, 196 coxitis non tuberculous in the young, discussion on 604, defence *medical* 229, dinner, annual, 232 drug addiction 229, drugs and pharmaceutical preparations shown 286 eczema discussion on, 518, erysipelas streptococci of, 334, excursions and social amenities 233 exhibition of instruments, drugs, foods and appliances 233 236, factory medical service, 227 fatigue, occupational and monotony, 235 fees in municipal maternity hospitals practitioners 226, financial position 195, food *deficiency and preventable* illness discussion on, 496, food products shown, 289 function and design, 265, funds for research, 195 gastro-enterostomy, place of in gastric and duodenal surgery, discussion on, 283 General Medical Council 197 appeal from decision, 198, general meeting annual 232 glaucoma, an operation for, 498, goitre in childhood, 601, hospital *equipments and* accessories shown, 288, insurance medical 230, *laboratory* and research workers, remuneration of, 195, leukæmia and *allied* conditions discussion on 334, Local Government, *Royal* Commission on 227, locum bureaux, 195, malignant *disease* of upper air and food passages, discussion on treatment, 546 malignant neoplasia, nature of and its treatment with lead, discussion on 281, manic-depressive psychosis discussion on, 385, mastoid operation after-treatment and results of, discussion on, 546, maternity hospitals, municipal practitioners' *fees in* 226 medical agencies exhibit, 289, migraine, discussion *on*, 384, motor licences 229, Nagel's anomaloscope, 499 nasal septum, the 547, National Health Insurance 230, nephritis in childhood, acute, discussion on 600, nursing homes, *the registration of*, 228, ophthalmic benefit, 500 orthopædic clinics, officers at, 227, overseas branches 232 pharyngeal and œsophageal diverticula, 548, physiological section, presidential address by *Prof* Leathes, 265, pituitary disorders, discussion on, 386 pituitrin, use of, by midwives, 230 Poor-law hospitals, consulting staffs of, 196 reform, 232, and public health discussion on, 495, pregnancy, indications and methods for terminating before viability of child discussion on, 378 present strength of 195, Presidential address by Robert George Hogarth, 161, psoriasis discussion in treatment of, 550, psycho analysis, 196 public education in health 231, public health appointments 231, medical officers, minimum salaries for, 198 retinal hæmorrhages, significance *of*, discussion on, 498, retropharyngeal abscess in childhood, acute, 548, rheumatic children, treatment of, 230, scarlet fever and its complications, relationship of streptococci to *discussion* on, 333, Science Committee, 195, Services, the, 232 spas and medicinal and mineral waters exhibit 289, spastic paralysis discussion on, 602, streptococci in relation to scarlet fever, discussion on, 333, of erysipelas, 334, surgical instruments and appliances shown 287 tissue culture, 335, tongue carcinoma of discussion on, 284, uterine hæmorrhage without gross physical signs causes and treatment of, discussion on 382
British Orthopædic Association, annual meeting 920
British Red Cross Society instructional film 1076
British Social Hygiene Council (A), 1178, programme of lectures 930
Brockbank E M Incapacity or Disablement in its Medical Aspects (R) 1222
Bromwich (West), M O H 's report, 232
Bronchiectasis diagnosis of by lipiodol, 1135 recent advances in treatment and diagnosis (Clive Riviere), 1102 discussion on 1113 surgical treatment of (A) 138, (J E H Roberts) 1106
Brown M and Martin A R Note on the treatment of general paralysis by tryparsamide 699
Brown, Dr Robert *Cunyngham appointed* Commissioner of Board of Control 918
Brundage Albert H, *Toxicology*, *15th* edit (R) 1116
Brynite, use of as a meat preservative (P I) 1319
Bubo climatic observations on (H M *Hanschell*), *276*

BUCHAREST CORRESPONDENCE FROM— Competition against doctors 1081—Dentists a source of income for, 1182—Secret remedies prohibition of, 1183—Venereal disease, campaign against, 1082, strong measures against, 1182

BUDAPEST CORRESPONDENCE FROM— International University at Davos 675—Intracutaneous vaccination 874—Measles, inoculation against, 675—Meinicke micro-reaction for syphilis, 875—Scarlet fever, prophylaxis and treatment of, 675—Venereal infection, responsibility for, 675

Budapest International Exhibition in, 41, post graduate congress at, 349
Bulb dermatitis (Sibyl G Overton), 1003; (C) 1192
Burdett's Hospitals and Charities (1926) (A), 396
Burial in the market-place a 264
Burke, Noel H M, What is a mental illness? 630, 684
Burns post-operative (C), 979
Burrell, L S, on *diagnosis* and treatment of bronchiectasis 1113
Butcher the late Dr A H 1245
Butler, Francis Hedges, Wines and the Wine Lands of the World (R), 1324
Butler T Harrison, Clinical use of the slit-lamp (Montgomery lecture), 315

C

Cabot, Hugh, Non tuberculous infections of the kidney, 53
Cabot, Richard C, Facts on the Heart (R), 1223
Cade, Stanford, Cholecystography (Arris and Gale lecture), 1
Cadge, William H (O), 151
Cæsarean section, scope of, 768
Caiger, Dr Foord, retirement of, from M.A B (A), 964
Caird, Francis Mitchell (O), 1033, 1086
"Calcards," 788
Calculus, renal case of (A C Sen Gupta), 21, submaxillary case of six faceted stones (W I Daggett), 649; urinary, treatment of (Sir John Thomson-Walker) (M.T T), 193, vesical with nucleus of paraffin wax (Ernest H Shaw), 225, (Alex E Roche), 902
Calcutta, tuberculosis in 567
Calendars and diaries for 1927, 1304
Calkins, Gary N, The Biology of the Protozoa (R), 290
Calvert, H T, The activated sludge process of sewage treatment, 1149
Cambridge, M.O H 's report, 147, S.M O s report, 1031
Cambridge Undergraduate 100 Years Ago the (Oskar Teichman), 106
Cambridgeshire, M O H 's report, 1345

Artificial silk inflammability of 511
Artificial sunlight treatment (P I), 45
Arvedson J Medical Gymnastics and Massage in General Practice 2nd edit (R), 812
Ashamed to beg (C) 979 1037
Askey, S G New dangerous drugs regulations (C), 203
Aspergilli the (A) 817
Aspirin a large dose of (C), 256
Assessors technical, judicial value of (M L) 88
Association of Special Libraries and Information Bureaux 3rd Conference of 49
Asthma Its Radical Treatment (James Adam) 2nd edit (R) 654 Hay fever and (Ray M Balyeat) (R), 654
Astronomy and letters (C) 1087
Asylum system hospitalisation of the (A), 557
Aub, Joseph C and others Lead Poisoning (R) 1116
Auden G A Sophocles and confusional insanity (C) 520
Aural disease bathing and (A), 763
Auricular Fibrillation (J G Emanuel) (R) 388 some points in prognosis of (H Wallace Jones) 640
Auricular flutter in infancy (F J Poynton and W G Wyllie), 371
Australia New South Wales report of Inspector General of mental hospitals 253

B

Babies Hostel St Thomas's Cornwall annual report 50
Babies over size (C) 414
Baby the eyes (A) 191
Baby care coöperative 1096
Bacillus dysenteriæ (Flexner) case of infection with (S F Breakey and F H A Clayton) 341
Backache from the orthopædic standpoint 1322
Baeten G and Daels Frans Note on different kinds of malignant tumours experimentally obtained by means of radium 665
Bacteria Mendelian variation in (A) 660 (C) 880
Bacterial Infection (J L T Appleton) (R) 186 monocytes and (A) 918
Bacteriology Manual of Clinical and Applied (R Tanner Hewlett) 8th edit (R) 969
Bacteriology, Manual of Determinative (Henry Bergey) 2nd edit (R) 127
Bacteriophage and its Behaviour The (F d'Herelle) (R) 1273
Bailey, Hamilton A plea for the permanent abolishment of the linguotrite (C) 624, spinal anæsthesia in intussusception of infants 648
Bailey, Percival and Cushing, Harvey, Classification of the Tumours of the Glioma Group on a Histogenetic Basis (R) 1273
Bainbridge and Menzies Essentials of Physiology (ed C Lovatt Evans) 5th edit (R) 185
Baker Geoffrey T Case of general paralysis with benign tertian malaria 403
Baker, John R, Sex in Man and Animals (R) 1016
"Bakers bed" at Croydon 900
Balfour Andrew, Through the maze of medicine, 1047
Ball James Barry (O) 766
Ball James Moores Practical Treatise on the Anatomy, Physiology and Diseases of the Eye 5th edit (R) 1223
Ballance Sir Charles Some experiments on the conduct and fate of a ligature made from parietal peritoneum of ox when implanted in living tissue, 10
Balmain A R Investigation into ætiology and treatment of impetigo contagiosa, 484
Balyeat Ray M Hay-fever and Asthma (R), 654
Banana flour as a food for infants (A), 965
Banister J Bright, on the place of induction of premature labour in the treatment of contracted pelvis 380
Bankart, Blundell on spastic paralysis, 602
Barbados health report from, 888
Barber H W Treatment of chilblain (M T T) 1180 1232 on eczema 549
Barber, Hugh on acute nephritis in children 601
Barber's chair dangers of the, 1231
Barbituric derivatives 1287
Barcroft, J Respiratory Function of the Blood Lessons from High Altitudes (R) 1323
Barendt Frank Hugh (O) 979
Barger, G on recent progress in the chemistry of thyroxine 200
Barham G F Mental hospitals and their relation to general and other special hospitals 986
Barkas Mary R Tonic spasm of the eyes in conjugate deviation 330 and Dawson W S Somnifen treatment in the psychoses 1155
Barnett the late Dr Lawrence 900
Baronsfeather C G S Pasteurisation of milk (C) 730
Barr Sir James approaching retirement of 820
Barris J D on methods of inducing abortion 379
Bartlett F C and Myers Charles S Text book of Experimental Psychology 3rd edit (R) 501
Bartlett Willard The Surgical Treatment of Goitre (R) 1170
Barton F Alex Heliotherapy natural *versus* artificial (C) 529
Barton upon Irwell new hospital at 100
Barwell Harold spasm of the glottis in adults and children (M T T) [illegible]
Basal Ganglia and the Extra Pyramidal Motor Syndrome (F Lotmar) (R) 1273
Bashford H H Adolescent albuminuria 1305
Basutoland health report from 888
Bathing and aural disease (A) 763
Bat bugs and prussic acid 1202
Battle, W H Treatment of surgical tuberculosis at the Institution of Santa Maria Cannes 213
Bayer 205, the modern German view of (A) 28
Baylis H A and Daubney R Synopsis of the Families and Genera of Nematoda (R) 553
Bayly H Wansey Scotland and venereal disease (C) 778
Beaton Thomas and Craig Sir Maurice Psychological Medicine 4th edit (R) 387
Beaumont G F and Dodds E C, Recent Advances in Medicine 3rd edit (R) 734
Bechuanaland public health in 364
Bedford prison death in (P I), 44, 101 210
Bedfordshire S M O's report 254
Beeby Walter Thomas (O) 881
Beit Memorial Fellows (A) 1019, election to 208
Belfast health of 578 hospitals 676, 930 Royal Victoria Hospital opening of session, 981
Belfrage S Henning What's Best to Eat? (R) 907
Belgian medical tours 82
Belgium antidiphtheritic measures in (A) 612
Bell Julia Colour Blindness (R) 77
Bell W Blair on the nature of malignant neoplasia and its treatment with lead 281 on the nomenclature of abnormal uterine hæmorrhage (C) 519
Bell, the late Dr W Bruce 561
Benedek Ladislaus Der heutige Stand der Behandlung der progressiven Paralyse (R) 1015
Bengal vaccination in 567
Bennett T Izod Perforation of gastric ulcer during X ray examination (C) 1141 Moncrieff Alan and Nicholas F G, Observations on cholecystography 19
Benson Henry Porter D'Arcy (O) 881
Benzol poisoning as an industrial hazard (A), 558
Berg, Leo S Nomogenesis or Evolution Determined by Law (R) 860
Bergey Henry Manual of Determinative Bacteriology, 2nd edit (R) 127
Berkeley Comyns and Dupuy George M, Atlas of Midwifery (R), 606

BERLIN CORRESPONDENCE FROM —
Birth rate in Germany and in France 621—Cancer cured by mesothorium, 727—Cinema and the child 404—Cinematography, medical, 250—Disabled care of the 403—Düsseldorf Exhibition, 824—Gastro intestinal catarrh epidemic of 621—Health Office, German, 250—Heubner, Prof, death of 1027—Hospitals in Prussia statistics of 621—Infectious diseases in Germany 727—Inundation disease, an 404—Iodised salt and the prevention of goitre, 1288—Kraepelin Prof, death of 825—Meat poisoning, epidemic of 250—Medical press articles in 621—Medical women, 1027—News items 1028—Overcrowding of the medical profession 249—Patent medicine nuisance, 1027—Plasmochin, 825—Prosecution of a medical man 404—Scarlet fever virus of 1027—Serum supervision of preparation of 404—Synthaline 1288—Tuberculosis new remedy for 825—Typhoid epidemic of in Hanover 824—Voronoff's operation 403

Berlin post graduate medical courses in 309 516
Bermuda, fly prevention in 686
Bernard L L Instinct A Study in Social Psychology (R), 237
Bertwistle A P On cerebral localisation 1218 a dressing table (N I), 554, and Shenton E W H, *Descriptive Atlas of Visceral Radiograms* (R) 608
Best C H The dog as test object (C) 1192
Bezançon F, and Philibert A, *Précis de Pathologie Médicale, Vol I, Part I* (R) 500
Bibliographies the R S M and (C) 203
Bile passages functions of, in relation to their pathology (D P D Wilkie) 689
Biliary physiology and pathology (L A) 713 secretion alterations in under different conditions 234 tract recent developments in our knowledge of 233
Bilston U D, M O H's report, 253
Biochemical Society joint meeting with London section of Society of Chemical Industry 199
Biochemistry, Recent Advances in (John Pryde) (R) 754
Biological standardisation of remedies, discussion on 1039
Biology and human life (A) 1277
Birkenhead M O H's report 975
Birkhaug K E on streptococci in erysipelas 334 in scarlet fever 333
Birmingham defective children 984, hospital centre for (A) 916 930, hospitals important gift to 884 M O H's report 406, new school clinic at, 683 orthopædics at, 769 S M O's report 254
Birmingham Smoke Abatement Exhibition 619
Birth control instruction by public authorities (L A) 1018
Birth live legal definition of (M L), 402
Birthday honours (A), 78
Birth rate in Germany and in France 621
Births and Deaths Registration Bill (P I), 1196 1247
Births marriages and deaths weekly list of, 51 104 157, 212 262 314 362, 412, 527, 580 629 684 733 784, 836, 886 934 986 1045 1094 1148, 1200 1250 1303 1351
Bismuth arsenic compounds in the treatment of yaws and syphilis (C) 43
Bissett-Hawkins medal, award of, 869
Blackburn M O H's report 975
Bladder rupture of, during labour case of 905 treatment of tumours of (Henry Wade), 1065
Blake Dame Louisa Aldrich (Lord Riddell) (R) 1067
Blanc H and Negro M La Cystographie (R) 291
Blanton Wyndham B A Manual of Normal Physical Signs (R) 907
Blind National Institution for the annual report of 411, welfare of the (L A) 760
Blohmke A, Surgery of the Ear Lief 8 of Kirschner and Nordmann's Die Chirurgie (R), 811
Blomfield J on anæsthesia in cardiac lesions, 332, on recent investigations concerning nitrous oxide and the ignition points of certain anæsthetic vapours, 124
Blood comparison in forensic medicine 773, count the normal (A), 191, donors professional, 924, human, precipitin test for (A), 965, platelets in hæmorrhagic diathesis, 367, pressure

high, from the clinical aspect (Sir Humphry Rolleston), 1014, 1203
Respiratory Function of the Lessons from High Altitudes (J Barcroft) (R), 1323
Blood sugar in the normal and diabetic (C. D Shapland) 589, studies in (Elsie Porter and George J Langley), 947
Blood transfusion, discussion on, 280, in children's practice (C Hope Carlton), 850 in relation to operation, 791, reaction to (L A) 555 (C.) 682 technique of (Paul C Gibson), 375, (C.), 520 574
Blumer, F Milnes Fractures of the anatomical neck of the humerus without apparent direct violence 22
Board of Control and lunacy certification (P I) 312, annual report of (A) 557, 651, change of address 1245
Boarding schools management of infectious diseases in (A I Simey), 1057, (C), 1140
Boase Arthur J, Some recent studies of dysentery a correction (C), 97
Bolivia, Red Cross in 631
Bolton M O H's report, 1241
Bombay, cerebro spinal fever in (P T Patel), 539 reorganisation of public health activities in 567, women factory workers in (P I) 313
Bond W E, and Rows R G Epilepsy A Functional Mental Illness (R) *907*
Bone, Inflammatory and Toxic Diseases of (R Lawford Knaggs) (R) 705, thyroid tumours in, 1239
Bonney, Victor Carcinoma of cervix 855 operation for creating an abdominal 'shelf' in visceroptosis in women 487
Bony lesions, case with multiple 808
Bookkeeping for doctors a method of, 838
Bootle, M O H's report 71, S M O's report, 72
Borderland cases of mental deficiency, 1235 1236
Borstal lads, application of Porteus maze tests to 100 (R F Jarrett), 1059
Bostock Edward Ingram (O), 628
Bostwick, Homer justice for (C), 625
Bourne, Aleck The scope of Cæsarean section, 768, treatment of contracted pelvis when first seen during labour, 1001
Bourne, Geoffrey, The cardiac circulation and disease, 491
Bourne, Wesley, Alleviation of the acidosis of anæsthesia 179
Bournemouth, M O H's report, 571
Bournville products, 1354
Bousfield Paul, Functional Nervous *Disorders* (R) 502
Bradford M.O H's report, 875
Bradford, Sir John Rose, Harveian oration on the debt of medicine to the experimental method of Harvey 839
Bradshaw, the late Dr J C, 983
Bradshaw lecture on the reconstructive surgery of the hip (Ernest W Hey Groves), 1055, on the theory of diagnosis (F G Crookshank), 939, 995, 1202
Brain and *Cerebellum* Pathologie du Cerveau et du Cervelet (Fasc XIX of Nouveau Traité de Médecine) (R.), 69
Brain, weight of the 403
Bramwell, Edwin, on migraine 384
Brazil, housing problems in, 631
Bread Ryvita crisp (mixed) (R & A R.), 292
Breaker, S F, and Clayton, F H A, Case of infection with *Bacillus dysenteriæ* (Flexner), 541
Breast, cancer of Ministry of Health circular, 611, 671
Breeding animals, research in, 341
Brentnall, E S, on spastic paralysis in children, 1064
Bridges, John Henry, Life of (Susan Liveing) (R) 1014
Brighton guardians and a nurses' home, 1252, M O H's report, 571, Poor-law institution 807
Briscoe, Grace Unilateral phrenic paralysis clinical applications of an experimental study 56
Bristol, S.M O's report, 679
Bristow, W Rowley on fractures of upper end of femur in adults 1270
British Association meeting at Oxford, presidential address (L A.) 293
British Charities Association annual meeting, 1351
British Empire Cancer Campaign (L A), 134, 834
British Hospitals Association, annual meeting and conference of (A), 32
British Institute of Philosophical Studies programme of lectures 779
British Social Hygiene Council address on women's organisations at the annual meeting, 159
British Medical Association annual meeting at Nottingham (L A) 241—Council dinner 884—Hastings lecture 1302—Proceedings at annual meeting Advertisements requiring membership of a medical organisation 231 Africa South, medical profession in, 195 anæsthesia and anæsthetics discussions and papers on 285 331 332 ante-natal work and the Midwives Act, 229, biliary tract, recent developments in our knowledge of the discussion on, 233 blood transfusion in the treatment of disease discussion on 280 books shown at, 289 B M A and Parliament the, 228 carcinoma of breast, post-operative treatment of 285, cerebral tumours, discussion on 282 certification of injury under Workmen's Compensation Act 229 charities, medical, 232, contracted pelvis induction of premature labour in discussion on 380 cottage hospitals medical attendants 196 colitis, non tuberculous in the young, discussion on 601, defence medical 229, dinner, annual 232 drug addiction 229, drugs and pharmaceutical preparations shown 286 eczema discussion on 548, erysipelas streptococci of, 334, excursions and social amenities 233 exhibition of instruments drugs foods and appliances 233 286, factory medical service, 227, fatigue occupational and monotony, 233· fees in municipal *maternity hospitals*, practitioners, 226, financial position 195, food deficiency and preventable illness discussion on 496 food products shown 289, function and design 265, funds for research, 195, gastro-enterostomy, place of, in gastric and duodenal surgery, discussion on, 283 General Medical Council 197 appeal *from* decision, 198, general meeting, annual 232 glaucoma an operation for, 498, goitre in childhood, 601, hospital equipments and accessories shown 288, insurance medical 230, laboratory and research workers, remuneration of 195, leukæmia and allied conditions discussion on, 334, Local Government, Royal Commission on 227, locum bureaux, 195, malignant disease of upper air and food passages discussion on treatment 546 *malignant* neoplasia, nature of and its treatment with lead, discussion on, 281 manic depressive psychosis, discussion on, 385, mastoid operation, after-treatment and results of discussion on, 546, maternity hospitals, municipal, practitioners' fees in, 226, medical agencies exhibit, 289, migraine, discussion on 384, motor licences, 229, Nagel's anomaloscope, 499 nasal septum, the 547, National Health Insurance, 230, nephritis in childhood, acute discussion on 600, nursing homes, the *registration of*, 228, ophthalmic benefit 500 orthopædic clinics, officers at, 227, overseas branches, 232, pharyngeal and œsophageal diverticula, 548 physiological section, presidential address by *Prof Leathes*, 265, pituitary disorders, discussion on, 386, pituitrin use of, by midwives, 230 Poor-law hospitals, consulting staffs of, 196, reform, 232, and public health, discussion on, 495, pregnancy, indications and methods for terminating, before viability of child discussion on, 378· present strength of 195, Presidential address by Robert George Hogarth, 161 psoriasis, discussion in treatment of, 550 psycho-analysis 196 public education in health 231 public health appointments 231, medical officers minimum salaries *for*, 198 retinal hæmorrhages, significance of, *discussion* on, 498, retropharyngeal abscess in childhood, acute, 548, rheumatic children, treatment *of*, 230, scarlet fever and its complications, relationship of streptococci to discussion on, 333, Science Committee, 195, *Services*, the, 232 spas and medicinal and mineral waters exhibit 289, spastic paralysis discussion on, 602, streptococci in relation to scarlet fever, discussion on 333, of erysipelas, 334, surgical instruments and appliances shown 287 tissue culture, 335, tongue carcinoma of discussion on 281, uterine hæmorrhage without gross physical signs causes and treatment of, discussion on 382
British Orthopædic Association, annual meeting 920
British Red Cross Society instructional film 1076
British Social Hygiene Council (A), 1178, programme of lectures 930
Brockbank E M Incapacity or Disablement in its Medical Aspects (R), 1222
Bromwich (West), M O H's report, 252
Bronchiectasis diagnosis of, by lipiodol, 1135 recent advances in treatment and diagnosis (Clive Riviere), 1102, discussion on 1113 surgical treatment of (A) 1138 (J E H Roberts) 1106
Brown M and Martin A R Note on the treatment of general paralysis by tryparsamide 699
Brown Dr Robert Cunyngham appointed Commissioner of Board of Control 918
Brundage Albert H, Toxicology, 15th edit (R) 1116
Brynite use of, as a meat preservative (P I) 1319
Bubo climatic observations on (H M Hanschell), 276

BUCHAREST CORRESPONDENCE FROM—
Competition against doctors, 1081—Dentists a source of income for, 1182—Secret remedies prohibition of, 1185—Venereal disease, campaign against, 1082, strong measures against 1182

BUDAPEST CORRESPONDENCE FROM—
International University at Davos, 675—Intracutaneous vaccination 874—Measles, inoculation against, 675—Meinicke micro reaction for syphilis, 875—Scarlet fever, prophylaxis and treatment of, 675—Venereal infection, responsibility for, 675

Budapest, International Exhibition in, 41, post-graduate congress at, 349
Bulb dermatitis (Sibyl G Overton), 1003; (C) 1192
Burdett's Hospitals and Charities (1926) (A) 396
Burial in the market place, a, 264
Burke, Noel H M, *What* is a mental illness? 630, 684
Burns, post-operative (C), 979
Burrell, L S on diagnosis and treatment of bronchiectasis 1113
Butcher, the late Dr A H 1245
Butler, Francis Hedges, Wines and the Wine Lands of the World (R.), 1324
Butler, T Harrison, Clinical use of the slit-lamp (Montgomery lecture), 315

C

Cabot, Hugh, Non-tuberculous infections of the kidney, 53
Cabot, Richard C, Facts on the Heart (R.), 1223
Cade, Stanford, Cholecystography (Arris and Gale *lecture*), *1*
Cadge, William H (O), 151
Cæsarean section, scope of, 768
Caiger, Dr Foord, retirement *of*, from M.A B (A), 964
Caird, Francis Mitchell (O), 1033, 1086
'Calcards,' 788
Calculus, renal case of (A C Sen Gupta), 21, submaxillary case of six faceted stones (W I Daggett), 649, urinary, treatment of (Sir John Thomson-Walker) (M T T), 193, vesical with nucleus of paraffin wax (Ernest H Shaw), 225, (Alex E Roche), 902
Calcutta, tuberculosis in, 567
Calendars and diaries for 1927, 1304
Calkins, Gary N, The Biology of the Protozoa (R.), 290
Calvert, H T, The activated sludge process of sewage treatment, 1149
Cambridge, M O H's report, 147; S.M O's report, 1031
Cambridge Undergraduate 100 Years Ago, the (Oskar Teichman), 106
Cambridgeshire, M O H's report, 1345

Cameron, the late Dr Allan Gordon Russell, 50
Cameron, H Charles, Cyclic vomiting (C), 1244
Cameron Prize Lectures Studies on the physiology of posture (Rudolph Magnus), 531, 585 , (L A), 657
Cameron, S J , on the pathology and treatment of concealed accidental hæmorrhage, 125
Cameron, Samuel J , and Hewitt, John, Uterine Hæmorrhage (R) 501
Cammidge, P J , The dissolution of insulin (C), 1292
Campbell, W R and Macleod, J J R , Insulin Its Use in the Treatment of Diabetes (R), 290
Cancer and heredity, 1342 , and prolapse (A), 1124 and tuberculosis, relation between (A), 816 (C), 880 Campaign, British Empire (L A), 131, 844, in Manchester, 325 , Conference, American, 825 Its Control and Prevention (John F Hall-Edwards) (R), 186 , early treatment of (A) 611, incidence of, in America (A), 1020 , the natural duration of (L A), 187, 671 , pamphlet, a Yorkshire (A) 918 , problem (W E Gye) (Lloyd Roberts lecture), 989, experimental attack on, 22 , rationale and technique of combining operation with radium treatment in (Walter C Stevenson), 1158 , research (P I), 312, in Dublin, 1079, 1183f in Sheffield University, 361 Fund Imperial, annual report, 1139 , of breast, Ministry of Health circular on, 611, 671, post operative treatment of, 285 , of cervix uteri, 855 , radium therapy of (A) 868 , of colon 304 , mule spinner's investigation of, 325 , of œsophagus treatment of, discussion on 1006 , of rectum, prognosis in (J P Lockhart-Mummery), 1307 , of skin multiple, of unknown origin (W J O'Donovan) 278 , of stomach peptic ulcer and cancer of (A) 916 (C), 925 , of tongue, cured by mesothorium, 404 , discussion of 284 of uterus a statistical study (Clara Stewart and Matthew Young), 1258
Cannes Treatment of surgical tuberculosis at the Institution of Santa Maria (W H Battle), 213
Carbohydrate Metabolism and Insulin (J J R Macleod) (R) 552 in diphtheria (Francis J Hector), 612
Carbon monoxide poisoning, ethylene anæsthesia and (A) 138 , medico-legal importance of, discussion on, 1218
Cardiac circulation and disease (Geoffrey Bourne), 491 , (C), 575 , hormone, the, 973
Cardiff, M O H 's report 1290
Caregan, the late Dr O J , 412
Carleton, H M , and Haynes, F , Histological Technique (R), 126
Carlill, Hildred, Ventricular puncture in apoplexy technique and uses, 1212
Carlisle, M O H 's report, 1031 , S M O 's report, 977
Carlton, C Hope, Blood transfusion in children's practice, 850
Carmichael L A , on cerebral localisation in the clinical subject, 1217
Carr, F H , on the commercial production of hormones, 200
Carroll, Charles H , Certification of incapacity for work (C), 305
Carson, W H , on post operative treatment of cancer of breast, 285
Case taking, Medical (Alex Mills Kennedy) (R), 1224
Cassie, Ethel, and Cox, Ursula, Examination of the gastric contents in infants with some consideration of value of lactic acid milk in infant feeding, 322
Castle, Walter F R (O), 100
Castor oil versus saline aperients in bacillary dysentery, 36 , (C), 97, 681
Catalogue of microscopical illuminating apparatus, 1304
Cataract extraction, intracapsular operation for (Graydon Hume), 804 , treatment of (Frank Juler) (M T T), 83
Cathcart, George C , Hunter Tod's Diseases of the Ear, 2nd edit (R), 1224 , Treatment of Chronic Deafness by the Electrophonoide Method of Zünd-Burguet (R), 1066
Cavernous Sinus Thrombophlebitis and Allied Septic and Traumatic Lesions of the Basal Venous Sinuses (Wells P Eagleton) (R), 1171
Cell division, irradiation and (C), 830
Cerebral localisation in the clinical subject symposium on, 1217 tumours Cerveau et du Cervelet Pathologie du (Fasc XIX of Nouveau Traité de Médécine) (R), 69 , discussion on, 282
Cerebro spinal fever in Bombay study of 170 cases (P T Patel), 539 , Fluid, The Human (R), 960 , physiology of, 109
Certification in insurance practice (L A), 961 , of incapacity for work, 301 (C) 305, 359 lunacy, Board of Control and (P I), 312 , under Workmen's Compensation Act, 229 (C), 358 , wrongful mock trial for, at Listerian Society, 935
Cerveau et du Cervelet, Pathologie du (Fasc XIX of Nouveau Traité de Médécine) (R), 69
Cervix carcinoma of, 855 , radium therapy of (A) 868
Chadwick public lectures programme of, 833
Chalmers, R , Treatment of alkalosis, 1267
Chandler, F G Hay fever 489 , heliotherapy in pulmonary tuberculosis (C) 574 , on treatment and diagnosis of bronchiectasis, 1114
Channel Islands, Poor law Board of, inadequate salaries of, 1351
Charities, hospitals and (A), 396
Charities Register and Digest, annual, 263
Cheatle, Sir George Lenthal, Natural formation of acquired adhesions 898
Cheese crustless Cheddar and Cheshire (R & A R), 1118, 1274
Chemical analysis, errors of judgment in (A) 397 Plant Exhibition at Westminster, 263
Chemistry, Organic, A Text book of, Historical, Structural and Economic (John Read) (R), 960 pure and applied, 264 Surface An Introduction to (Eric K Rideal) (R), 960
Chenopodium for ankylostomiasis (C), 521, 624
Cheshire, M O H s report, 1344
Cheshire County Mental Hospital, Parkside annual report 73
Chilblain, treatment of (H W Barber) (M T T), 1180, 1232
Child, the cinema and the (A), 394 , fear reactions in the (A), 560 , The Language and Thought of the (Jean Piaget) (R), 501 , the nervous (Millais Culpin) 785
Child welfare, lectures on 730
Childhood rheumatic disease in (A), 659, 769 (A), 866
Children, acute nephritis in (A) 561 discussion on, 600 , Crippled and Invalid, Conference on the Care of 915, 1131 Diseases of, Diagnosis of (E Feer), 3rd edit (R), 907 , Diagnostik und Therapie der Kinderkrankheiten (F Lust), 4th edit (R), 706 , Disorders of Nutrition and Growth Clinique Médicale des Enfants Troubles de la Nutrition et de la Croissance (P Nobécourt) (R), 553 , dull and backward (A), 717 , goitre in, 601 , Respirationsstenosen der Kinder, Von den Akut Infektiösen (D Popischill) (R), 706 , school, inquiry into rheumatism in (R H Vercoe), 669
Children's spa, a 264
China, epidemic prevention in (A), 1125 , Medical Association, Conference in Peking (A), 719 , public health in (L A), 76 , and the Boxer indemnity (S H Chuan), 105
Chiropodists in conference, 983
Chloride, capacity of kidney for concentrating (O L V de Wesselow), 594
Choay, André, la Sécrétion Interne du Pancréas et l'Insuline (R), 606
Cholecystitis, 859
Cholecystography, 233 , (A), 509 , (Stanford Cade) (Arris and Gale lecture), 1 , (L A), 25 , observations on (T Izod Bennett, Alan Moncrieff, and F G Nicholas), 19
Cholelithiasis, 793
Cholera infantum (A), 611
Cholera, treatment of (J Walker Tomb) (M T T), 721
" Choriotrope," clinical pathologists and, 521
Chromium coated instruments, 1354
Chuan, S H , Public health in China and the Boxer indemnity, 105
Churton, Thomas (O), 977
Cigarette cards for hospitals, 758
Cinema and the child (A), 394, 727
Circulation, peripheral, control of the (L A), 1225
Civic health weeks (L A), 915, 938
Civil servants, sickness among (P I), 1349
Civil service bonus, 582
Clarke Ernest, Ophthalmology in the last half century, 809, 1052
Clavicle, osteomyelitis of, case of, 1166
Clayton, F H A , and Breakey, S F , Case of infection with *Bacillus dysenteriæ*, 541
Clayton Greene, William H (O), 98
Clinical medicine, the science of (Sir Archibald Garrod), 735
Clinical Procedure, A Manual of (Robert A Kilduffe) (R), 755
Clitoris, case of melanotic sarcoma of, 1220
Club foot, congenital, treatment of, 1114
Coal and hospitals (A), 761
Cochrane, Robert G , The leprosy campaign (C), 95
Cochrane, W A , Orthopædic Surgery (R), 552
Cocoa, Van Houten's pure soluble (R & A R), 1274
Cod-liver oil, action of light on (P R Peacock), 328
Cœliac and renal rickets, 953
Cœliac disease, ultra violet radiation in (Ralph G Michelmore), 1264
Cokkins, H J , Mesenteric Vascular Occlusion (R), 127
Colchester, S M O 's report, 1032
Colds and chill 1095
Cole, R H , death of (A), 345 , (O), 410
Cole, R H , Progress in psychiatry, 166
Colenso, the late Dr Robert J , 50
Colitis (A F Hurst), 1151 , discussion on, 1164
Collins, Mary, Colour Blindness (R), 77
Collinson F C , Fulminant case of acute poliomyelitis of bulbar type, 597
Colloidal gold and silver in the treatment of encephalitis lethargica (A W Fuller), 172
Colon, cancer of, 304 pelvic, carcinoma of, involving bladder, case of, 1319 , elongation of, and its surgical treatment (E G Slesinger), 274 , (C) 358 , removal of unusual case of (S A Lane) 1163 , Surgery of the (F W Rankin) (R), 655
Colon and Rectum, Tumours of the (Jerome M Lynch and J Felson) (R), 755
Colonial health reports, 888 , medical and sanitary services (P I), 100
Colonies, appointment to chief medical adviser to Secretary of State for, 50
Colostomy cup a simplified (G F Stebbing) (N I) 1274
Colour blindness (L A), 77
Colour vision, tests for (A), 817
Colwell, Hector, and Thomson, M Sydney, on some effects of primary and secondary X rays upon the skin of the frog tadpole, 59
Compliment, a doubtful 1096
Compressed air, practical jokes with, 1095
Compton, Arthur, Intra uterine injection of pure glycerine experimental inquiry into bacteriological basis of puerperal sepsis by, 326
Conferences British Hospitals Association, 84—Cancer Conference, American, 825—China Medical Association at Peking (A), 719—Chiropodists, Incorporated Society of, 983—Crippled and Invalid Children, Care of, 1131—Industrial Welfare Society Lecture Conference, 579—International Red Cross Conference on the Welfare of the Seaman (A), 189—International Sanitary Conference, 12th, at Paris, 770—International Society of Medical Hydrology, at Amsterdam, 957—Maternity and Child Welfare, 4th English speaking, at Westminster, 129 1234, 1283—Milk —Mental Welfare in Relation to Public Health, National Conference on 982—National Association for Prevention of Tuberculosis, 89 —Naturförscher and Ärzte, at Düsseldorf (A), 765—Neurological, at Oslo, 731—Pan American Red Cross, at Washington, 39, 631—Panel Conference, 909—Smoke Abatement and Health, at Birmingham, 619—Tuberculosis, 930, 1134 , (C), 1193
Congresses British Congress of Obstetrics and Gynæcology, 6th, at Manchester (A), 243—Coombe Hospital Centenary Congress at Dublin, 673, 884—Hungarian Post Graduate Medical

Congress at Budapest, 349—International for Life Saving and First-Aid 3rd, at Amsterdam, 301—International Physiological, at Stockholm 361—Oxford Ophthalmological, 206—Royal Sanitary Institute, 92, 141—Russian Ophthalmological, 579—S African Medical Association 929, 1083—Urology, at Vienna, 1082
Conjugate deviation of the eyes, tonic spasm in (Mary R Barkas) 330
Conscript, health education through the, 631
Constantinople, International Sanitary Board of, 400
Constipation, manual self treatment for, 1046
Continuity of Life Physiology of the (D Noël Paton) (R), 291
Contortionist, a 788
Contraception Dr F J McCann on, 983 by spermatoxin 1095 teaching at welfare centres (C) 1202
Contracted pelvis induction of premature labour in treatment of, discussion on 380 , management of, discussion on 1001 1009 1096 , treatment of, when first seen during labour (Aleck Bourne) 1001
Convulsive states, changes in the blood in (A) 136
Cooke W E , and Low, George C , Congenital case of kala azar, 1209
Cookson, H A and Thorp, E , Outbreak of infantile diarrhœa associated with a parasitic fungus 330
Cope Zachary, Stretching the intussuscipiens (C), 729 Treatment of the Acute Abdomen (R), 607
Cork, public health appointments in 727
Corkscrew, the, 1202
Cornea, translucency of the (A), 765
Cornell University Medical College Report of Scientific Work of (A), 138
Coroners (Amendment) Bill (P I), 1295 1298, 1299 , Courts in India (P I) 312 , new procedure in 833 , duties under the Petroleum Act 516 error, a (M L) 338 , (P I), 376 jurisdiction *to investigate fires* (A), 243
Coué Emile (L A), 78
Coventry, M O H s report, 147
Covering Is it ? (C) 779
Cowell Stuart J , on food deficiency and preventable disease, 496
Cox, Ursula, and *Cassie* Ethel Examination of the gastric contents in infants with some considerations as to the value of lactic acid milk in infant feeding, 322
Coxa vara, case of, 1166
Coxitis, non tuberculous, in the young, discussion on, 604
Craig, Charles F , A Manual of the Parasitic Protozoa of Man (R) 23
Craig, Sir Maurice and Beaton, Thomas, Psychological Medicine, 4th edit (R), 387
Crawford, A Muir, A note on two cases of pontine hæmorrhage, 173
Cremations in Manchester, 1194
Creo-terpin compound (Wampole) (R. & A R), 1118
Crew, Albert, The Law and Practice Relating to Dentists and Dentistry (R), 607
Crichton-Browne, Sir James, Victorian Jottings from an Old Common Place Book (*R*), 1324
Crile G W , Life The Nature of (R), 608
Criminals, the intelligence of (H A *Grierson* and *C H L Rixon*), 277 study of 1342
Cripples *the care of* (A), *38* , conference on 915, 1131
Critchley Macdonald, on cerebral localisation, 1217
Cromessol (R & A R), 1118
Crook, the late Dr H D , 1130
Crookshank, F G , The theory of diagnosis (Bradshaw lecture), 939, 995, 1202
Crowdy, the late Dr F H , 1046
Crowe, H Warren Vaccine treatment of chronic arthritis and rheumatism, 1012
Croydon M O H s report, 1029
Cruchet, Prof Réné on blood transfusion, 280
Cryptotoxins, 201
Crystalline lens, *see* Lens
Cubley A , A new tracheotomy tube (N I) 656
Culpin, Millais, The nervous child, 785
Cumberland, S M O s report, 1345
Cunningham, L , on lead treatment of malignant disease, 282
Curtis F R , and Thomson J C , Case of surgical emphysema in scarlet fever, 854 , and Wright, Samson, Observations on the action of lobeline 1255
Cushing Harvey, Studies in Intracranial Physiology and Surgery (R) 1170 , and Bailey, Percival Classification of the Tumours of the Glioma Group *on a* Histogenetic Basis (R) 1273
Cut throat, two cases of suicidal (Sydney Smith), 1163
Cyclic vomiting (A), 1178 , (C), 1241, 1292
Cystographie, La (H Blanc and M Negro) (R), 291

D

Daels, Frans and Baeten, G Note on different kinds of malignant tumour experimentally obtained by means of radium 666
Daggett W Ingledew, Case of six faceted calculi in submaxillary gland, 649
Dairy cows in Great Britain and other countries proportion of, to population (P I) 259
Dairying, research in (A) 917
Dale, H H , on the experimental study and use of the hormones, 199
Dana Charles L The Peaks of Medical History (R) 707
Danger of an external combining with an internal drug (C) 43
Danish hospitals 356
Darwin Leonard The Need for Eugenic Reform (R), 126
Daubney R and Baylis, H A Synopsis of the Families and Genera of Nematoda (R), 553
Davenport, Cecil John (O), 577
Davesne Jean and Pascal, C , Traitement des Maladies Mentales par les Chocs (R) 705
David Lewis Epileptic Colony *annual* meeting, 1246
Davies Arthur T Relation between cancer and tuberculosis (C), 880
Davies, Ivor J , Atypical tabes 1316
Davis, Albert E , Psychic traumas (mental accidents) 117
Davis, David M , and Young Hugh H Practice of Urology (R), 389
D Avoine, C L , Erysipelas and nephritis (C), 521
Davos proposed international university at, 675 scientific sport week 1328
Daw S W , on non tuberculous coxitis in the young, 604
Dawkins, Veronica, and Pattison, C Lee Irradiated milk its effect on the *blood* 1314
Dawson, W. S , Teaching of psychiatry *to medical students*, 722 , and Barkas M R , Somnifen treatment in the psychoses, 1155
Deaf, National Institute for the (A), 663
Deafness Chronic, *Treatment of,* by Zünd-Burguet Electrophonoide Method (G C Cathcart) (R), *1066*
Death, study of, in man, 613 , (C), 624
Death-rates in *London, changing, 348*
De Beer, G R , Anatomy, Histology and Development *of the Pituitary Body* (R), 1117
Decorations, *foreign to medical* men, 261
Defence of assistants and locum tenents (C), 358
Degeneration, racial, (Dean W R Inge) (Lloyd Roberts Mem lect), 1097 , (C), 1190
De Jong, the late Dr E M 1126
De Lint J G , Atlas of the History of Medicine Pt I , Anatomy (R), 811
Delmege, Anthony, Afebrile tachycardia in early phthisis 899
“ De Motu Cordis ' (A) 299
Denker, A , and Kahler O , Handbuch der Hals - Nasen - Ohren - Heilkunde, Vol II (R), 70
Dennig, Helmut, Die Innervation der Harnblase (R), 1171
Dental benefit, approved societies and (P I), 1091 , new arrangements for, 725 , Board, autumn session (A.), 1126 , care of mothers and young children, 1150 , Committee s findings, approved societies and (P I), 259 students' guide, 712, 756, numbers of, 480
Dentists and Dentistry, Law and Practice Relating to (Albert Crew) (R), 607
Dentists, appointment book for, 1304 Bill new (P I) 46, 100 fees approved societies and (P I) 1196, 1299
Derby, M O H 's report, 1241
Derbyshire M O H 's report, 774
Dermatitis from handling flower bulbs (Sibyl G Overton), 1003 , (C) 1192
Deshmukh, G L , A wandering tumour (C), 686
Devonshire Hospital and Buxton Bath Charity 115th annual report 411
de Wesselow O L V , Capacity of the kidney for concentrating chloride 594
Dewey, Kaethe W , and Moorehead, Frederick, Pathology *of the* Mouth (R) 335
D'Herelle, F , *The Bacteriophage and its* Behaviour (R), 1273
Diabetes *nickel and cobalt in* 514 patients' treatment in prison (P I) 45 treatment of, in Canada and U S A (Leslie J Witts), 1160
Diabetic coma, 1293 , gangrene excessive insulin dosage in (Howard F Root) 544 , Life The Its Control by Diet and Insulin (R D Lawrence) 2nd edit (R) 21
Diagnosis the theory of (F G Crookshank) (Bradshaw lecture) 939, 995, 1202
Diarrhœa chronic, medical treatment of (J A Ryle) (M T T) 563, 615 infantile *outbreak of* associated with *a* parasitic fungus (H A Cookson and E Thorp) 330
Diathermic Die (Dr Kowarschik), 5th edit (*R*), 501
Diathermy in glycosuria 924 , treatment *of anginal* pain and raised blood pressure by (John Hay and Phœbe Ince), 799
Dichotomy, a layman s indictment of (A) 819
Dickie, W S on cancer of the tongue, 284
Dickson, Spencer S Marseilles British Merchant *Seamen s Hospital* (C), 204
Diet, *Importance of, in* Relation to Health (People s League of Health Lectures) (R), 908 , school boy (A), 295 , What s Best to Eat ' (S H Belfrage) (P) 908
Digitalis leaf tabloid " (R & A R), 1118
Dilling, W J , on biological action of lead, 281
Dinners Belfast University Service Club, 984—British Medical Association annual dinner 232 Council dinner, 884—British Orthopædic Association 921—Brussels University Medical Graduates' Association 783—Chelsea Clinical Society 933—Complimentary, to Sir John Rose Bradford, 102 , to Sir Berkeley Moynihan, 1302 , to Dame Mary Scharlieb, 208—Continental Medical Graduates' Association, 983—Irish Medical Graduates Association 1194—London Hospital, 931—London (Royal Free Hospital) School of Medicine for Women, annual dinner, 1245—Medico Legal Society, 1302—Middlesex Hospital, 782—Royal Dental Hospital, 1142—Royal Free Hospital festival dinner, 66—Royal Medico-Psychological Association 177—Royal Sanitary Institute Jubilee Congress, 143—Royal Society of Medicine (A) *1122* — Royal Society of Tropical Medicine and Hygiene 1138—St Bartholomew's Hospital, old students, 782—St George's Hospital 782—St Mary's Hospital, 782—St Thomas's Hospital, old students 982—Society of Medical Officers of Health 1142—Surgical Instrument Manufacturers Association 984 — Ulster Medical Society, 1304—Westminster Hospital, students, 782
Diphtheria antidiphtheritic measures in Belgium (A) 611 carbohydrate metabolism in (Francis J Hector) 642 , immunisation (C), 214 , treatment and prophylaxis of, 304
Director-General, A.M S , the (A), 30, 48
Disability, an unusual (C), 574
Discipline, professional appeal to High Court from quasi-judicial bodies (M.L), 338
Disease, world incidence *of* (A), 612
Diseases of Animals Acts ignorance of the law (M L), 973
Disinfectant, a new surgical, 514
Disinfection, terminal (L A), 610

Cameron, the late Dr. Allan Gordon Russell, 50
Cameron, H Charles, Cyclic vomiting (C), 1244
Cameron Prize Lectures Studies on the physiology of posture (Rudolph Magnus), 531, 585, (L A), 657
Cameron, S J, on the pathology and treatment of concealed accidental hæmorrhage, 125
Cameron, Samuel J, and Hewitt, John, Uterine Hæmorrhage (R) 501
Cammidge, P J, The dissolution of insulin (C), 1292
Campbell, W R and Macleod, J J R, Insulin Its Use in the Treatment of Diabetes (R), 290
Cancer and heredity, 1312, and prolapse (A), 1124, and tuberculosis, relation between (A), 816 (C), 880 Campaign British Empire (L A) 134, 834, in Manchester 325, Conference, American 825 Its Control and Prevention (John F Hall Edwards) (R), 186 early treatment of (A), 611, incidence of, in America (A), 1020, the natural duration of (L A), 187, 671, pamphlet, a Yorkshire (A), 918, problem (W E Gye) (Lloyd Roberts lecture), 989, experimental attack on, 22, rationale and technique of combining operation with radium treatment in (Walter C Stevenson), 1158, research (P I), 312, in Dublin 1079, 1183f in Sheffield University, 361, Fund, Imperial, annual report, 1139, of breast, Ministry of Health circular on, 611 671, post operative treatment of, 285, of cervix uteri 855, radium therapy of (A) 868, of colon, 304, mule spinners investigation of, 325, of œsophagus, treatment of discussion on, 1006, of rectum prognosis in (J P Lockhart Mummery), 1307, of skin multiple, of unknown origin (W J O Donovan) 278, of stomach, peptic ulcer and cancer of (A), 916 (C), 925, of tongue, cured by mesothorium, 404, discussion of, 284 of uterus a statistical study (Clara Stewart and Matthew Young), 1258
Cannes Treatment of surgical tuberculosis at the Institution of Santa Maria (W H Battle), 213
Carbohydrate Metabolism and Insulin (J J R Macleod) (R), 552, in diphtheria (Francis J Hector), 612
Carbon monoxide poisoning, ethylene anæsthesia and (A), 138, medico legal importance of, discussion on, 1218
Cardiac circulation and disease (Geoffrey Bourne), 491, (C), 575, hormone, the 973
Cardiff, M O H 's report, 1290
Caregan, the late Dr O J, 412
Carleton, H M, and Haynes F, Histological Technique (R), 126
Carlill, Hildred, Ventricular puncture in apoplexy technique and uses 1212
Carlisle, M O H 's report, 1031, S M O 's report, 977
Carlton, C Hope, Blood transfusion in children's practice 850
Carmichael E A on cerebral localisation in the clinical subject, 1217
Carr, F H, on the commercial production of hormones 200
Carroll, Charles H, Certification of incapacity for work (C), 305
Carson, W H, on post operative treatment of cancer of breast, 285
Case taking, Medical (Alex Mills Kennedy) (R), 1224
Cassie, Ethel, and Cox, Ursula, Examination of the gastric contents in infants with some consideration of value of lactic acid milk in infant feeding, 322
Castle, Walter F R (O), 100
Castor oil versus saline aperients in bacillary dysentery, 36, (C), 97, 681
Catalogue of microscopical illuminating apparatus, 1304
Cataract extraction, intracapsular operation for (Graydon Hume), 804, treatment of (Frank Juler) (M T T), 83
Cathcart, George C, Hunter Tod's Diseases of the Ear, 2nd edit (R), 1224, Treatment of Chronic Deafness by the Electrophonoide Method of Zünd-Burguet (R), 1066
Cavernous Sinus Thrombophlebitis and Allied Septic and Traumatic Lesions of the Basal Venous Sinuses (Wells P Eagleton) (R), 1171
Cell division, irradiation and (C), 830
Cerebral localisation in the clinical subject, symposium on, 1217, tumours Cerveau et du Cervelet, Pathologie du (Fasc XIX of Nouveau Traite de Medécine) (R), 69, discussion on, 282
Cerebro spinal fever in Bombay study of 170 cases (P T Patel), 539 Fluid, The Human (R) 960, physiology of, 109
Certification in insurance practice (L A) 961, of incapacity for work 301 (C), 305, 359 lunacy, Board of Control and (P I), 312, under Workmen's Compensation Act, 229 (C), 358, wrongful, mock trial for, at Listerian Society, 935
Cerveau et du Cervelet Pathologie du (Fasc XIX of Nouveau Traité de Medécine) (R), 69
Cervix, carcinoma of, 855, radium therapy of (A) 868
Chadwick public lectures programme of, 833
Chalmers, R, Treatment of alkalosis, 1267
Chandler, F G, Hay fever, 489, helio therapy in pulmonary tuberculosis (C), 574, on treatment and diagnosis of bronchiectasis, 1114
Channel Islands, Poor law Board of, inadequate salaries of, 1351
Charities, hospitals and (A) 396
Charities Register and Digest, annual, 263
Cheatle Sir George Lenthal Natural formation of acquired adhesions 898
Cheese crustless Cheddar and Cheshire (R & A R), 1118, 1274
Chemical analysis, errors of judgment in (A), 397 Plant Exhibition at Westminster, 263
Chemistry, Organic, A Text-book of Historical, Structural and Economic (John Read) (R), 960, pure and applied 261 Surface An Introduction to (Eric K Rideal) (R), 960
Chenopodium for ankylostomiasis (C), 521, 624
Cheshire M O H 's report 1344
Cheshire County Mental Hospital, Parkside, annual report 73
Chilblain treatment of (H W Barber) (M T T), 1180, 1232
Child, the cinema and the (A), 394, fear reactions in the (A) 560, The Language and Thought of the (Jean Piaget) (R), 501, the nervous (Millais Culpin) 785
Child welfare lectures on 730
Childhood, rheumatic disease in (A), 639, 769 (A), 866
Children, acute nephritis in (A), 561 discussion on, 600, Crippled and Invalid, Conference on the Care of 915, 1131 Diseases of, Diagnosis of (E Feer), 3rd edit (R), 907, Diagnostik und Therapie der Kinderkrankheiten (F Lust), 4th edit (R) 706, Disorders of Nutrition and Growth Clinique Médicale des Enfants Troubles de la Nutrition et de la Croissance (P Nobécourt) (R), 553, dull and backward (A) 717, goitre in, 601, Respirationsstenosen der Kinder, Von den Akut Infektiösen (D Popischill) (R), 706, school, inquiry into rheumatism in (R H Vercoe), 669
Children's spa, a 264
China, epidemic prevention in (A), 1125, Medical Association, Conference in Peking (A), 719, public health in (L A), 76, and the Boxer indemnity (S H Chuan), 105
Chiropodists in conference, 983
Chloride, capacity of kidney for concentrating (O L V de Wesselow), 594
Choay, André, la Sécrétion Interne du Pancréas et l'Insuline (R), 606
Cholecystitis, 859
Cholecystography, 233, (A), 509, (Stanford Cade) (Arris and Gale lecture), 1, (L A), 25, observations on (T Izod Bennett, Alan Moncrieff, and F G Nicholas), 19
Cholelithiasis, 793
Cholera infantum (A), 611
Cholera, treatment of (J Walker Tomb) (M T T), 721
"Choriotrope," clinical pathologists and, 521
Chromium coated instruments 1354
Chuan, S H, Public health in China and the Boxer indemnity, 105
Churton, Thomas (O), 977
Cigarette cards for hospitals, 758
Cinema and the child (A), 394, 727
Circulation, peripheral, control of the (L A), 1225
Civic health weeks (L A), 915, 938
Civil servants, sickness among (P I), 1349
Civil service bonus, 582
Clarke, Ernest, Ophthalmology in the last half century, 809, 1052
Clavicle, osteomyelitis of, case of, 1166
Clayton F H A, and Breakey, S F, Case of infection with *Bacillus dysenteriæ*, 541
Clayton Greene William H (O), 98
Clinical medicine, the science of (Sir Archibald Garrod) 735
Clinical Procedure, A Manual of (Robert A Kilduffe) (R), 755
Clitoris, case of melanotic sarcoma of, 1220
Club foot, congenital treatment of, 1114
Coal and hospitals (A), 761
Cochrane, Robert G, The leprosy campaign (C), 95
Cochrane, W A, Orthopædic Surgery (R), 552
Cocoa, Van Houten's pure soluble (R & A R), 1274
Cod liver oil action of light on (P R Peacock), 328
Cœliac and renal rickets, 953
Cœliac disease, ultra violet radiation in (Ralph G Michelmore) 1264
Cokkins, H J, Mesenteric Vascular Occlusion (R), 127
Colchester, S M O 's report, 1032
Colds and chill 1095
Cole R H, death of (A), 345, (O) 410
Cole, R H, Progress in psychiatry, 166
Colenso, the late Dr Robert J, 50
Colitis (A F Hurst), 1151, discussion on, 1164
Collins, Mary, Colour-Blindness (R), 77
Collinson F C, Fulminant case of acute poliomyelitis of bulbar type, 597
Colloidal gold and silver in the treatment of encephalitis lethargica (A W Fuller), 172
Colon, cancer of, 304 pelvic, carcinoma of involving bladder, case of, 1319, elongation of, and its surgical treatment (E G Slesinger), 274, (C) 358, removal of unusual case of (S A Lane) 1163, Surgery of the (F W Rankin) (R), 655
Colon and Rectum, Tumours of the (Jerome M Lynch and J Felson) (R), 755
Colonial health reports, 888, medical and sanitary services (P I), 100
Colonies, appointment to chief medical adviser to Secretary of State for, 50
Colostomy cup, a simplified (G F Stebbing) (N I), 1274
Colour blindness (L A), 77
Colour vision, tests for (A) 817
Colwell, Hector, and Thomson, M Sydney, on some effects of primary and secondary X rays upon the skin of the frog tadpole 59
Compliment, a doubtful, 1096
Compressed air, practical jokes with, 1095
Compton, Arthur, Intra-uterine injection of pure glycerine experimental inquiry into bacteriological basis of puerperal sepsis by, 326
Conferences British Hospitals Association, 84—Cancer Conference, American, 825—China Medical Association at Peking (A), 719—Chiropodists, Incorporated Society of, 983—Crippled and Invalid Children, Care of, 1131—Industrial Welfare Society Lecture Conference, 579—International Red Cross Conference on the Welfare of the Seaman (A), 189—International Sanitary Conference, 12th, at Paris, 770—International Society of Medical Hydrology, at Amsterdam, 957—Maternity and Child Welfare, 4th English speaking, at Westminster, 129—Mental Welfare, 1234, 1283—Milk in Relation to Public Health, National Conference on 982—National Association for Prevention of Tuberculosis, 89—Naturforscher and Ärzte, at Düsseldorf (A), 765—Neurological, at Oslo, 731—Pan American Red Cross, at Washington, 39, 631—Panel Conference, 909—Smoke Abatement and Health, at Birmingham, 619—Tuberculosis, 930, 1134, (C), 1193
Congresses British Congress of Obstetrics and Gynæcology, 6th, at Manchester (A), 243—Coombe Hospital Centenary Congress at Dublin 673 884—Hungarian Post Graduate Medical

Finsterer Prof Hans, on anæsthesia in abdominal surgery, 285, on gastro-enterostomy, 283
Fires, Coroners' jurisdiction to investigate (A) 243
First-Aid, Life Saving and, International Congress for 301
Fishmongers Company and the sale of putrid fish (M L), 247
Fitzwilliams, Duncan, on carcinoma of tongue, 284
Flea plague and the, 632
Fleet street week for Bart 's 833
Fleetwood the late Dr W H 980
Fletcher, Sir Walter, The future of women in medicine, 740
Flinn the late Dr D E, 525
Florence, P Sargant, Overpopulation Theory and Statistics (R) 69
Flour, treatment of (C), 1038, 1243
Fluorescence (A), 298
Fly prevention in Bermuda 686
Focal sepsis in its rhinological aspect (T B Layton), 527
Fœtal mortality a clinical and pathological study (Med Res Counc Rep), 1337
Fog and low temperature relative influence of, on mortality from respiratory disease (W T Russell), 1128, and mortality (L A), 1121
Foix Ch, and Nicolesco, J Les Noyaux Gris Centraux et la Région Mesencephalo sousoptique (R), 1015
Food (Mary T Dowd and Jean D Jameson), 2nd edit (R), 908 adulteration of (A), 718 deficiency and preventable disease, discussion on 497
Foot and mouth disease infection (L A), 294
Foote, J A, Diseases of the New born (R), 706
Forbes, Duncan Management of infectious diseases in boarding schools 1062
Forbes, J Graham, Post-scarlatinal meningitis, 1207
Forceps, hæmostatic (Geo L Preston) (N I) 390
Forceps left in the body after operation (M L), 724
Foreign drugs thirteen, 1045
Forgan, Robert, Scotland and venereal disease (C) 926
Fothergill William Edward (O) 1034
Fox, R Fortescue Cardiac circulation and disease (C), 575
Fracture of anatomical neck of humerus without apparent direct violence (F Milnes Blumer), 22
Fractures, spiral, 285
Fragilitas ossium, deafness associated with, 1009
France, birth rate in, 621, travel in, 414
Frankau, C H S, on gangrene of the extremities 1216
Fraser Archie Keith (O) 205, and Goldschmidt, L B, Some points in the surgical management of seminal vesiculitis, 749
Fraser, J S, on after treatment and results of mastoid operation, 547
Freeman, J, Wanted, an appendix (C), 831
French Army, venereal disease in, 788, death rate, 675 health resorts, 579 hospitals, infantile mortality in, 1287
Fry A Ruth, A Quaker Adventure (R.), 291
Fuller, Arthur W, A case of encephalitis lethargica of severe type treated successfully by colloidal gold and silver, 172
Function and design (J B Leathes), 265
Functional Nervous Disorders (Paul Bousfield) (R), 502
Functions of the Body (V H Mottram) (R), 1066
Funk, Casimir, The dissolution of insulin (C), 1140, 1244 1292

G

Gall-bladder, torsion of the (G P B Huddy) 120
Gall-stone operations on the use of wedges for elevating the loin in (G Grey Turner) 224
Gallavardin Louis, Les Angines de Poitrine (R.), 185
Gangrene of the Extremities treatment of, discussion on, 1215, of the toe (C), 1242, 1347
Garage accidents, 1095
Gardiner Hill, H, and Smith J Forest The effects of feeding anterior lobe pituitary extract to children, 219
Garrod, Sir Archibald, Science of clinical medicine 735
Garry the late Dr W A M, 411
Gas poison, case illustrating after-effects of (Thomas Nelson), 1213 (C), 1293
Gask, G E on treatment of gangrene of the extremities 1215
Gastric and duodenal ulcer ætiology and treatment of 1321 surgical treatment of (C) 42, 95 150
Gastric contents in infants examination of the (Ethel Cassie and Ursula Cox) 322
Gastric polyposis diffuse (A) 1280
Gastric ulcer and gastric cancer (A), 916, (C), 925 The Pathogenesis of Chronic Die Pathogenese des Chronischen Magendarmgeschwurs (I R F Rassers) (R), 755 perforated, with appendicitis, case of (C P G Wakeley) 752, perforation of, during X ray examination (F W Lang) 1061 (C), 1141
Gastro Duodenal Ulceration The Surgery of (Charles A Pannett) (R) 606
Gastro-enterostomy place of in gastric and duodenal surgery discussion on 253
Gastro jejunostomy, posterior, some factors in the operation of (Donald MacLeod), 490
Gastroscopy (A), 342
Geddes George, Puerperal Septicæmia (R), 958
Gemmel the late Dr J F, 1208
Gemmell Arthur A, Case of atresia of vagina 1061
Gene, The Theory of the (Thomas Hunt Morgan) (R), 186
General Medical Council Appointment of lay member of (P I) 154—Dangerous Drugs Regulations, 1188—Executive Committee 1188—Malta medical practice in, 1189—Miscellaneous business, 1189—Penal cases 1188—President's address 1137—Vacancy on (P I), 1248
General paralysis, case of, with benign tertian malaria (Geoffrey T Baker), 903 malarial treatment of, 1338, Modern Treatment of Der heutige Stand der Behandlung der progressiven Paralyse (L Benedek) (R), 1015, note on treatment of, by tryparsamide (M Brown and A R Martin), 699
General practice research in (L A), 863
General practitioner service its range under the Insurance Acts 618
Generalisation, a hasty, 364, (C), 414
German Association of Urology, meeting of 562
Germany, birth-rate in, 621, infectious disease in, 727 medical women in, 1027, (C), 1087 public health in, 886, (L A), 914, radiotherapy in (A), 1176
Geyser, dangers of the 1287
Gibbons, the late Dr C T, 929
Gibraltar skulls, the two (A), 559
Gibson, Alexander George, Action of adrenalin in aplastic anæmia, 948, The Heart (R), 1116
Gibson, Paul C, The technique of blood transfusion, 375, 574
Gillingham, S M O 's report, 72
Gimson, the late Dr K C, 411
Glamorganshire Home for the Mentally Deficient, 1194
Glasgow, actinotherapy at 988, 1046, child welfare centre, 783, M O H 's report, 405, typhus fever in 407, Royal Asylum, annual report, 73
Glaucoma an operation for 498
Glioma Tumours, Classification of, on a Histogenetic Basis (Percival Bailey and Harvey Cushing) (R), 1273
Glottis, spasm of, in adults and children (Harold Barwell) (M T T) 32
Gloucestershire, M O H 's report, 1186
Glyceric aldehyde and dihydroxyacetone, action of, on insulin hypoglycæmia (J A. Hewitt and H G Reeves), 703
Glycerine, action of, on bacteria, 326, on tissue cells, 327; pure intra-uterine injection of experimental inquiry into basis for treatment of puerperal sepsis by (Arthur Compton), 326
Glycosuria and diathermy, 924
Glynn E E, on lead treatment of cancer, 282
Godlee, Sir Rickman J., Whitchurch, Yesterday and To-day (R) 127
Goggles for ultra violet therapy (A), 613
Goitre, endemic in New Zealand (C) 96, in childhood 601, iodine and (A), 1022, 1258, The Surgical Treatment of (Willard Bartlett) (R) 1170
Gold Coast Colony, death and sickness rate in (P I), 101
Gold salts, therapeutic use of (A), 1229
Gold treatment of tuberculosis 2nd report by Medical Research Council, 181, and see Sanocrysin
Goldschmidt L B and Fraser A Keith Some points in the surgical management of seminal vesiculitis 749
Gonorrhœa, serum treatment of (A), 1023, syphilis and in the Navy 101
Goodman R and Wingfield R C Rate of sedimentation of red blood corpuscles in pulmonary tuberculosis 807
Gordon A Knyvett, Management of infectious disease in boarding-schools (C) 1110
Gordon R G, and Thomson F G Chronic Rheumatic Diseases (R.), 531
Gordon Watson C, Partnership some facts and a warning (C) 150
Gould's Medical Dictionary (R), 860
Gout the causation of, 411 treatment of, 856
Government and the necessitous areas (P I), 1318
Graham, E A, on recent developments in knowledge of biliary tract 233
Graham George, Treatment of gout 856
Graham, John H P, After-effects of poison gas (C) 1293
Graham Hodgson H K, and Weinbren M Tuberculosis verrucosa treated by ultra violet radiation and associated with trichinosis 171
Grants for local services 202
Gravesen, J Results of thoracoplasty in phthisis 702
Gray A M H, on common affections of skin of outer ear 1008
Gray, Gideon, Certification of incapacity for work (C) 339
Gray, J Pereira, Gangrene of the toe (C), 1347
Greene, Charles Lyman, Medical Diagnosis 6th edit (R), 552
Grierson H A, and Rixon C H. L., The intelligence of criminals 277
Grimsby M O H 's report 572
Grippe, La (Pierre Lereboullet) (R), 907
Groves, Ernest W Hey Some contributions to the reconstructive surgery of the hip (Bradshaw lecture) 1055, on fractures of upper end of femur in adults, 1269
Growths in plants and man, 734
Guardianship Society report, 106
Guild of St. Luke annual festival 815, annual service, 884
Guildford (B and R D), M O H 's report, 41
Gulland, G L on leukæmia and allied conditions, 334
Gunther R T, Early medical and biological science (A), 342
Gupta, A C Sen, Case of renal calculus, 21
Guthrie, Douglas, on acute retropharyngeal abscess in childhood, 548
Gye, W E, The cancer problem (Lloyd Roberts lecture), 989
Gynæcology, use of radium in, 769

H

Hadfield, Geoffrey, and Hewer, T F, Observations on a case of acholuric icterus 121
Hæmorrhage, accidental concealed, pathology and treatment of, 125, associated with peritonsillar abscess (C), 149 879, pontine, note on two cases of (A. Muir Crawford), 173, subdural (C), 256, uterine, see Uterine hæmorrhage
Hæmorrhagic diathesis angiostaxis (Hunterian lecture) (H Letheby Tidy), 365
Hair, sudden whitening of the, 886
Haldane, J. S, on the physiology of respiration in relation to anæsthetics, 123, 124
Halifax (C B), M O H 's report, 252
Hall, Arthur J, Halogen eruptions, 952, (C), 1087
Hall-Edwards John F. Cancer Its Control and Prevention (R), 186, (O), 410

Dispensary, the tuberculosis its place in the tuberculosis scheme, 90
Dispensatory of the U S A, 21st edit (R) 1015
Diverticula, pharyngeal and œsophageal, 548
"Doctor 'my book'" (A), 868
Doctors and the public (E Graham Little), 742, and statesmen (A), 1122
Dodds, E C, and Beaumont, G L, Recent Advances in Medicine, 3rd edit (R), 754
Dog as test object, the (C), 1192
Dog stealing and medical research (P I), 1195, 1335
Dogs, epidemic encephalitis in (Leslie P Pugh), 950, (C), 1036, 1193, experiments on stolen (P I), 1297
Donations and bequests 11 97, 153, 194, 261, 361, 472, 524 545, 628 682, 688, 834, 860, 935, 1042, 1092, 1122, 1252, 1291
Doncaster (R D), M O H 's report, 72
Dorland, W A Newman, and Hubeny M J, The X Ray in Embryology and Obstetrics (R), 1222
Dott Norman, on pituitary disorders, 387
Dowd, Mary T, and Jameson, Jean D, Food Its Composition and Preparation, 2nd edit (R), 908
Dowden J W, Post operative burns, (C), 979
Doyle, Sir Arthur Conan, on spiritualism (A), 30
Dressing table, a (A P Bertwistle) (N I), 554
Dressings, standard, 1354
Drug addiction, 229, some cases of long standing (Stanford Park), 121
Drugs, dangerous, League of Nations and the traffic in opium and (A) 80, practitioners and (A) 312 (M L) 102 516, 565, 674, 725, 872, 1084, 1286, new regulations (C), 203, register for recording purchase of, 734
Drunkenness, definition of (C), 305, 358
Dublin, Cancer Research Institute in, 1079, 1183, centenary of Coombe Hospital, 515, 577, (A), 614 673, medical inspection of school children in, 1246, Rotunda Hospital, appointment of Dr Solomons as master, 1028
Du Bois, Eugene F, Basal Metabolism in Health and Disease (R) 126
Ductus arteriosus, persistent, causing obstruction of œsophagus (A J Jex-Blake), 542
Dudgeon L S, on colitis 1165
Dudley, H W, on the chemistry of the pituitary gland and of insulin, 199
Dujarier, Ch, Anatomie des Membres, 2nd edit (R), 1117
Duke-Elder, W Stewart The pathological action of light upon the eye, Part III, 16
Dumbartonshire, M O H 's report, 623, S M O 's report, 149
Dunhill, T P, on anæsthesia in goitre operations, 179
Dunlea, the late Dr J G, 929
Dunlop Children's Bed, 1086
Dunn, C L, and Pandya, Rai Bahadur D D, Indian Hygiene and Public Health (R), 68
Dunn, Percy, The loss of orientation in insured workmen its economic aspect, 66
Dunn, Shaw, on disturbance of renal function in experimental nephritis, 1115
Dunn, W, The closing of Uppingham School (C), 1088
Duodenal ulcers, *see* Gastric and duodenal ulcers
Duodenum, observations on the, 1287, obstruction of 1064
Dupuy, George M, and Berkeley, Comyns, Atlas of Midwifery (R), 606
Dusseldorf Conference, the (A), 765, Exhibition of Hygiene, 824
Dust trap for rock drilling, a new (A), 344
Dying, the study of, 613
Dyke, S C, Case of post operative tetanus with identification of the organism, 596
Dysentery, some recent statistics of, 35
Dysentery, amœbic action of emetine in (A), 762, with liver abscess, contracted in England (Alan S Simpson), 495, bacillary, immunisation against, 36, in children, serum treatment of, 36
Dyson, W, on psoriasis, 550

E

Eager, Richard, Hints to Probationer Nurses in Mental Hospitals, 2nd edit (R), 862
Eagleton, Wells P Cavernous sinus thrombophlebitis (R), 1171
Ealing M O H 's report, 147
Ear, Diseases of the, Vol I, in Denker's and Kahler's Handbuch der Hals-Nasen Ohren Heilkunde (R), 655, blood pressure and, discussion on, 1268, diseases of the outer discussion on, 1008, Hunter Tod's Diseases of the 2nd edit (Geo C Cathcart) (R), 1221, Neurology of Handbuch der Neurologie des Ohres (Alexander and Marburg) Vol III (R), 655, Politzer s Text book on Diseases of the Ear, 6th edit (rev Milton J Ballin) (R), 607, Surgery of (A Blohmke), Lieferung 8 of Kirschner and Nordmann s Die Chirurgie (R) 811
East C F T, Persistent hiccup (M T T), 110
Eastbourne, M O H 's report, 148, S M O s report, 1291
Eastman Sheehan, Paraffin in plastic surgery of the nose (C) 1037
Eccles, S M O 's report 1291
Eccles W McAdam on fractures of upper end of femur in adults, 1270
Economy in hospital and medical services (P I), 351
Ectopia testis, treatment of 245
Eczema, the ætiology of (A), 28, discussion on, 548
Eden, T W, on indications and methods for termination of pregnancy before viability of child 478
Edgecombe, Wilfrid, on colitis 1164
Edinburgh, M O H 's report 677, new radiological department at Infirmary, 823, psychopathic hospital at, 753, Women Citizen s Association, programme of, 726
Edington, J W, Tubercle bacilli in tuberculous pus (C), 42
Edmondson the late Dr H, 208
Edmonton, S M O s report, 1031
Edmunds Walter, Sunshine measurements (C), 1243
Edwards, Tudor, on bronchiectasis, 1114, on gangrene of the extremities, 1216
Egypt, medical education in (A), 136, ophthalmology in, 1150, sun-bathing in Upper, 988
Egyptian cosmetic, an ancient, 1304, School of Medicine, 628
Ehrmann, death of Prof, 1083
Eidinow, Albert, Note on dosage in phototherapy 645
Electricity, accidents with, 1201
Elmslie, R C, on fractures of upper end of femur in adults, 1269, Treatment of hallux rigidus and hallux valgus (M T T), 665
Emanuel, J G, Auricular Fibrillation (R), 388
Emetine, action of, in amœbic dysentery (A), 762
Employers, doctors and dentists as, statutory obligations of, 52
Encephalitis, epidemic, in dogs (Leslie P Pugh), 950 (C), 1036, 1193, the post encephalitis unit at Northern Hospital, 512, (A), 1281, the righting reflexes in (C) 728, influenzal, case of (H S N Menko), 753
Encephalitis lethargica, 177, (P I), 1092, after effects of (P I), 526, discussion on, 1283, in Scotland 923, narcolepsy as a symptom of (C P Symonds), 1214, outbreak of, in Sheffield in 1924 (A), 1123, severe, treated successfully by colloidal gold and silver (A W Fuller) 172
Encephalitis sequels hospital treatment of, in Scotland, 411
Encephalomyelitis following vaccination (L A) 504, (A), 764, (P I), 1147
Encephalomyelitis, epidemic, spinal and peripheral forms of (A), 296
Endometrioma of broad ligament, case of, 1221
Energen bread, 1354
Engineering, Public Health, Principles of (Earle B Phelps) (R), 553
Enteric fever in mental hospitals the control of (C A Hogg and Oliver Latham), 377 (L A), 391
Enteropathies Microbiennes, Les (G Sanarelli) (R), 861
Entomology, the teaching of (A), 867
Eosinophilia and acidosis (C), 880
Epidemic prevention in China (A), 1125
Epididymitis, tuberculous, treatment of, 824
Epilepsy (A), 1333, as a defence (L A), 1017 A Functional Mental Illness (R G Rows and W E Bond) (R), 907, case of heart disease and (R O Moon), 65, (C), 203, the study of (C), 255
Epsom College an appeal to practitioners 1233, annual meeting of subscribers, 38, Founders' Day celebration, 261, the new sanatorium (L A), 1225, scholarships at, 682
Erysipelas and nephritis (C), 521
Essex, M O H 's report, 1186
Ethylene anæsthesia (A), 1179, and carbon monoxide poisoning (A), 138
Eugenic Reform, The Need for (Leonard Darwin) (R), 126
Eugenics Education Society, change of address, 783, meeting, 833
Evans, C Lovatt ed, Bainbridge and Menzies Essentials of Physiology, 5th edit (R), 185, Recent Advances in Physiology, 2nd edit (R) 755
Evolution Determined by Law Nomogenesis or (Leo S Berg) (R), 860
Ewart, David (O), 766
Examinations (L A) 459
Ex baby, the (A), 191, (C), 305
"Ex nihilo nihil fit" (Thomas Yeates), 744
Exhibition of British Chemical Plant at Westminster, 263 London Medical, 682 779 826, Motor, at Olympia, 871, 918, 969, Smoke Abatement, at Birmingham 619
Eye analogies from the, 874, microscopy of the living (L A), 340, pathological effects of light upon (W S Duke Elder), Pt III 16, Practical Treatise on Anatomy, Physiology and Diseases of the (James Moores Ball), 5th edit (R), 1223 tonic spasm of, in conjugate deviation (Mary R Barkas), 330

F

Factories ventilation in (A), 31
Factory Bill the (L A), 339, (P I), 101, 310, 351, 1196, (A) 395
Factory Girls' Country Holiday Fund 480
Fairbairn John S, Obstetrics (R), 958, Prophylactic treatment of prolapse (M T T) 1076
Fairbank, H A T, on fractures of upper end of femur in adults, 1270, on non-tuberculous coxitis in the young, 604
Fairfield, Letitia, Address on the health of professional women 5
Falconer, A W, and McLachlan, A R, Two cases of splenectomy in purpura hæmorrhagica, 493
Fallopian tubes, insufflation of (A C Magian), 1270
Farming and vitamins, 1251
Farr, Dr E A, Honorary freedom of Andover conferred on, 782
Fatigue, industrial (A), 662, report of Research Board, 772, occupational and monotony, 235, tiredness and (A), 613
Fattening cure, a new, 973
Fear reactions in the child (A), 560
Feeble minded, care of the 1045
Feer, E, Diagnosis of Children's Diseases 3rd edit (R), 907
Fees, a claim for (M L), 88 in municipal maternity hospitals, practitioners', 226, successful action for (M L), 873, 971
Fellowship of Medicine and Post Graduate Medical Association, lectures, &c, at, 49, 102, 153, 207, 261, 309, 360, 411, 525, 781, 833, 883, 929, 981, 1041, 1071, 1143, 1193, 1227, 1302, 1348
Felson, Joseph, and Lynch, Jerome M, Tumours of the Colon and Rectum (R), 755
Femur, fractures of upper end of, in adults, discussion on, 1269, spontaneous fracture through neck, case of, 1167 ununited fracture of neck, case of, 1166
Ferguson, J Bell, The Quartz Mercury-Vapour Lamp (R), 1224
Fever beds the best use of (A), 865
Fiji, progress in, 530
Filter passers and inclusion bodies (L A), 1276
Findlay, W, Defence of assistants and locum tenents (C), 358
Finger, Prof, of Vienna, 403

almoner's department report, 263 annual dinner, 982 financial position of, 510 old students' dinner 261, list of, 261, scholarships, award of, 1038—Seamen's Hospital annual report, 578—Shropshire and Wales Eye, Ear, and Throat Hospital opening of new wing, 1042—Shropshire Orthopædic Hospital, opening of new ward 1309—Stockton and Thornaby-on-Tees Hospital, opening of extension, 751—Sussex Hospital for Women and Children Brighton, extension, 834—Torbay Hospital, laying of foundation-stone 33—Treloar Cripples' Hospital and College, Alton and Hayling Island, annual report 521—Tunbridge Wells General Hospital, centenary and replacement of, 33—University College, annual report 511, appeal for funds, 264 obstetric theatre presented by Rockefeller Foundation 401—West End Hospital for Nervous Diseases annual report 153—West London Hospital dedication of chapel, 783, laying of foundation stone of chapel 153—Westminster Hospital, annual report, 525 unveiling of tablet commemorating founders, 166—Westminster Ophthalmic Hospital, plans for new building in Bloomsbury, 150 510—Weston-super-Mare Hospital enlargement of, 1351—Wigan Infirmary, annual report, 50, opening of new radiological department 1159—Wigan, Royal Albert Edward Infirmary annual report, 579—Winchester Royal Hampshire County Hospital discovery of hospital records, 628—Woolton Babies' Hospital change of name 929

Hospitals, accidents and (L A), 864 and charities (A), 396, and the coal strike, 683, and motor accidents, 251, 753 Birmingham, gift to, 884, children's 1042, cigarette cards for, 758, coal and (A) 761, the construction of (A), 660, Danish 356 frauds on (M L), 144, 620, in Northern America 1250 insured patients in, 1309, Irish public and medical fees 883 legal disabilities of (L A), 609, London, progress of the 510, street collections for (P I), 1247 mental, and their relation to general and other special hospitals (G F Barham) 986, New Zealand, paying wards in, 39 Northern Princess Mary and 361 payment for skilled treatment in, for patients of moderate means 94, 184 poisoning cases at immediate treatment of (A), 661, railwaymen's support of, 412, 521 rates on 50 selling game for, 360, service, at Portsmouth, 884, Sheffield annual report of Council, 525, United States, 1239, voluntary, future of, 361 628, 983, 1246, paying beds in (L A), 963, status of, 930, Welfare Society, appeal 683 wireless in 1028

House Surgeon's Vade Mecum, The (Russell Howard and Alan Perry), 2nd edit (R), 861

Houses built of concrete and special materials (P I), 211, steel, in England (P I), 1091, working-class, increasing cost of (P I), 211, statistics of (P I), 1247

Housing Bill Rural (P I) 310, 353

Housing in England and Wales progress of (P I), 154, *statistics (P I) 1090*, subsidies reduction in (P I), 1247

Howard Russell, and Perry Alan, The House Surgeon's Vade Mecum, 2nd edit (R), 861

Howarth Walter G, on treatment of œsophageal cancer, 1007

Hubeny, M J, and Dorland W A N The X Ray in Embryology and Obstetrics (R) 1222

Huddy, G P B, Torsion of the gall-bladder 120

Hughes Basil, Surgical treatment of gastric and duodenal ulcers (C), 42 150

Hughes, W Kent, Hæmorrhage associated with peritonsillar abscess (C), 879

Hull M O H's report 1289

Hull and Goole Port Sanitary Authority, medical officer's report, 517

Human Body and its Functions, The (Marie C Stopes) (R), 70

Human factor in *industry*, the, 772

Hume, Graydon Intracapsular operation for cataract extraction, 804

Humerus, fracture of anatomical neck of without apparent direct violence (F Milnes Blumer) 22, transcondylar fractures of, in children (F D Saner), 901

Humphris Francis Howard, Artificial Sunlight and its Therapeutic Uses, 3rd edit (R), 68

Hunt, E Rivaz, on cholecystitis, 859

Hunter, William and John, letters of Tobias Smollett to, 1068

Hunterian lecture on hæmorrhagic diathesis angiostaxis (H Letheby Tidy), 365

Hurst, A F Colitis, 1151 on conditions of the biliary tract, 234, prophylaxis *of poliomyelitis* (C), 1190

Huxley, Julian, Essays in Popular Science (*R*), *1324*

Hydroa and porphyrinuria 904

Hydrocyanic acid, antidote to, 91

Hygiene Düsseldorf Exhibition of, 824, in elementary schools past and present (L A), 1173, in the tropics 788

Hyperglycæmia, alimentary (A), 717, heritable (A), 345

Hyperpiesia and meningitis, pregnancy with (John L Lush), 1005

Hypertension arterial, 514

I

Ibotson, F C B, Alteration of vision due to basal fracture of skull (C) 43

Ice-cream note on the bacterial content of (E G Rawlinson), 1267

Icterus acholuric, observations on a case of (Geoffrey Hadfield and T F Hewer), 121

Illingworth C F W, and Mackenzie Ronald D, The Rous sarcoma, No I, 745

Illinois milk pasteurisation in, 1046

Illumination and visual acuity, 413

Imaginary annals (A), 966

Immigrants, psychological tests for (A), 80

Immunisation, modern trend of prophylactic and therapeutic (James McIntosh), 889

Immunity in relation to transplantable malignant tumours further observations on (Thomas Lumsden), 112, (C), 256

Imperial Cancer Research Fund, annual report, 1139

Imperial Social Hygiene Congress Proceedings (R), 656

Impetigo contagiosa, ætiology and treatment of (A R *Balmain*) 484

Improper invitation, an, 1046

Impulse irresistible the plea of, as a defence (M L) 246

Incapacity back-strain as a cause of, 1238, for work 301 (C), 305, in an industrial crisis, 517, or Disablement in its Medical Aspects (E M Brockbank) (R), 1222

Ince, Phœbe, and Hay John Treatment of anginal pain and raised blood pressure by diathermy, 799

Incidence of illness, a study of (A) 1179

Income-tax allowance for the doctor's car, 143, and expenditure on professional text books (L A) 1069

India, Coroner's courts in (P I), 312

INDIA, CORRESPONDENCE FROM—Anti rabic centre, 1081—Bombay reorganisation of public health activities in 567—Education, medical 248—Flannel shirts, 1081—Indigenous medical systems 1080—Madras Presidency, epidemic diseases in, 1080—Malaria, elimination of 1080—Midwives Registration Act, 249—News *items* 249, 1081—Nursing Service Indian, 1081—Opium policy, *internal 249—Punjab*, medical relief to 1081—Quinine supply of, 248—St John Ambulance Association 249—Tuberculosis in Calcutta 567, in India, 1080—Vaccination in Bengal, 567

India, importation of opium from (P I), 210 malaria in (P I), 1146, opium in (P I), 312, protection of children in (P I), 45, public health in (P I), 211 tuberculosis in 1080 women's medical service for 515

Indian Hygiene and Public *Health* (C L Dunn and Rai Bahadur D D Pandya) (R) 68

Industrial fatigue (A), 662 Research Board, appointment of chairman, 1281, sixth annual report, 772, illumination 1202, lead-poisoning, mechanism and incidence of 1132, Welfare Society, annual *lecture conference, 579*

Industry rheumatism in, 930, (M B Ray), 935

Infancy Dystrophien und Durchfallskrankheiten im Säuglingsalter (Leo Langstein) (R), 907

Infant feeding, value of lactic acid milk in, 323, (L A), 341, welfare at Llandudno, 1191

Infantile diarrhœa outbreak of, associated with a parasitic fungus (H A Cookson and E Thorp), 330 paralysis, outbreak of (P I), 932, 1090, 1092, 1196, 1248, 1298

Infants, examination of the gastric contents in (Ethel Cassie and Ursula Cox), 322

Infectious disease in England and Wales, weekly list, 41, 73, 148, 209, 255, 307, 356, *414, 480 516, 573 629, 679*, 712, 776, 836 878, 938 974 1032, 1086, 1140, 1187 *1242, 1291 1345*

Infectious diseases in boarding schools, management of (A I Simey), 1057, (C), 1140

Influenza in Scotland (A), 562

Information Bureau, *a proposed Central*, 1143

Inge, Very Rev Dean W R, Racial degeneration (Lloyd Roberts Memorial lecture), 1097

Injuries to Workmen, The Law Relating to (F G Neave), 3rd edit (R), 336

Injury certification of under Workmen's Compensation Act (C), 358

Inkster, John, Case of aniline poisoning, 752

Inquests duty to view the body (M L), 338 (P I), 356, medical fees at (A), 1280

Insanity, arteriopathic 821, the prevention of (George M Robertson) 158, senile treatment of (G W B James) (M T T), 820, *the treatment of (L A)*, 187

Instinct A Study in Social Psychology (L L Bernard) (R), 237

Institute of Hygiene, lectures at 929 reception at, 50

Insulin, acidosis and (A), 1228, Carbohydrate Metabolism and (J J R Macleod) (R) 552, dissolution of (C) 1140 1190, 1244, 1292, 1346, dosage excessive, in diabetic gangrene (H F Root), 544 hypoglycæmia, action of glyceric aldehyde and dihydroxyacetone in (J A Hewitt and H G Reeves) 703 Its Use in the Treatment of Diabetes (J J R Macleod and W R Campbell) (R), 290; La Sécrétion interne du Pancréas et l'Insuline (André Choay) (R) 606, modifying the action of 94 poisoning, defence of in charge of drunkenness (M L), 402, standardisation of (L A), 75

Insurance company's nursing service, 1096

Insurance National Health British Medical Association and, 230—Certification forms, safeguarding *of, 570*—Dental benefit, approved societies and (P I), 1091 new arrangements for, *725—Dental fees*, approved societies and (P I) 1299—Dental *officers* under Insurance Acts, regional, 1351—Deposit contributors to health insurance (P I), 1091—General practitioner service range *under the* Insurance Acts, 618—Health Insurance contributions and benefits (P I) 1299—Insured patients in hospitals 1309—Ophthalmic benefit, 500 582—Panel practitioners complaints against (P I), 1247—Scotland, payment of sickness benefit in (P I), 156—Scottish approved societies, *second* valuation of, 97—Specialist medical service for insured persons, 1248—Statistics, financial (P I) 45

Insurance practice certification in (L A), 961, rates, all sickness, for women proposers, 34

Intelligence, the heritability of (A), 509

International meeting of cardiologists and gynæcologists at Franzensbad, 1246

International Office of Public Health (A), 966

Internationalism in port *sanitary work* (L A), 556

Intestinal anastomosis, a simple method of, 1322 infections Les Enteropathies Microbiennes (G Sanarelli) (R), 861 obstruction, double case of (L F O'Shaughnessy), 1163, or paralysis, toxæmia of (A) 1278; Stasis, *Chronic (Alfred C* Jordan), 2nd edit (R), 755

Halogen eruptions (Arthur J Hall), 952, (C), 1037, 1087
Hallux valgus and rigidus, treatment of (R C Elmslie) (M T T), 665
Ham, East, M O H 's report, 570
Ham West, M O H 's report, 570
Hamilton, the late Dr Alexander, 1246
Hamilton, C K J Treatment of congenital hypertrophic pyloric stenosis (M T T), 510
Hampshire M O H 's report, 775
Handley W Sampson, Impressions of thyroid surgery in America 1253, on treatment of gangrene of the extremities, 1215
Hanschell, H M, Observations on climatic bubo, 276
Hanson Helen Beatrice de Raztricke (O), 205
Harnett's appeal, Mr (M L), 216
Harris, J S and McCowan P K on chronic epidemic encephalitis, 1220
Harveian oration Before and after operation (Sir Berkeley Moynihan), 789, Debt of medicine to experimental method of Harvey (Sir John Rose Bradford) 839
Harvey, William, and his "De Motu Cordis" (A), 299
Hastings, M O H 's report, 1040, reopening of dispensary, 1246
Hasty generalisation, a, 361, (C), 411
Hausman, Louis, and Sachs, B, From Birth through Adolescence (R) 960
Hawker, G P, Sight testing opticians and eye disease, 1110
Hay, John, and Ince, Phœbe, Treatment of anginal pain and raised blood pressure by diathermy, 799
Hay, Prof Matthew, resignation of, 207
Hay fever (F G Chandler) 489, Asthma and (Ray M Balzeat) (R), 654, true and false, 361
Haynes Frederic, and Carleton H M, Histological Technique (R), 126
Head, Henry, Aphasia and kindred disorders of speech (L A), 814
Heald, C B Heliotherapy in pulmonary tuberculosis (C), 729, an interesting syndrome (C) 1191
Health, advertising 788, centre in New York, 1291 education (Sir Thomas Horder), 795, (L A), 813, Pensions and Unemployment Acts doctors and dentists as employers, 52, Society, the new (C), 96, visitors courses for, 726 *and see* Public Health Services
"Health week," 730
Health weeks civic (L A), 915 938
Heart, The (A G Gibson) (R), 1116, and aorta syphilis of the (F W Price), 61, block, *congenital* 953 disease and epilepsy (R O Moon), 65, (C), 203, Disease, Modern Methods in the Diagnosis and Treatment of (Francis Heatherley), 2nd edit (R), 185, Facts on the (Richard C Cabot) (R), 1223, the failing, recognition of (A), 1176
Heat production of nerve (A), 866
Heatherley, Francis, Modern Methods in the Diagnosis and Treatment of Heart Disease, 2nd edit (R), 185
Hector, Francis J, Carbohydrate metabolism in diphtheria, 642
Heliotherapy and artificial sunlight (O Strandberg), 1131 in pulmonary tuberculosis (J E Wood), 372, (C), 574, 681, 729, 779, in tuberculosis, 91, 1134, natural *versus* artificial (C), 529
Henschen, Dr Karl, appointed to chair of surgery, Basle, 411
Heredity (J Arthur Thomson), 5th edit (R), 606
Hernaman Johnson, Francis, Radiotherapy in Relation to General Medicine (R), 237
Hernia, strangulated, treatment of (W H Ogilvie) (M T T), 1126
Herrmann, Georg, and Pötzl, Otto, Über die Agraphie und ihre lokaldiagnostischen Beziehungen (R), 116
Hertfordshire, M O H 's report, 622, S M O 's report, 877
Herzfeld, Gertrude, Treatment of acute intussusception in infants (M T T), 767
Hett, G Seccombe, Treatment of infection of nasal accessory sinuses (M T T), 968
Heubner, death of Prof Otto, 1027
Hewer, C Langton, on anæsthesia in abdominal surgery, 286
Hewer, T F, and Hadfield Geoffrey, Observations on a case of acholuric icterus, 121
Hewitt, J, on pathology and treatment of concealed accidental hæmorrhage 125, and Cameron, Samuel J, Uterine Hæmorrhage (R), 501
Hewitt, J A, and Reeves, H G, Note on action of glyceric aldehyde and dihydroxyacetone in insulin hypoglycæmia, 703
Hewlett, R Tanner, Manual of Bacteriology, Clinical and Applied, 8th edit (R), 959
Hexamine in typhoid fever, 824
Hiccup, persistent, treatment of (C F T. East) (M T T), 110
Higgs, S L, on treatment and results of fracture of upper end of femur in adults, 1269
Hip, some contributions to the reconstructive surgery of the (Ernest W Hey Groves) 1055
Hirsch S, Die Peripheren Blutgefässe im Röntgenbild (R), 69
Hirschman, Louis J, Handbook of Diseases of the Rectum (R), 1066
Histamine the action of (A), 27
Histological Technique (H M Carleton and Frederic Haynes) (R), 126
Hogarth, Robert George, Address on the medical practitioner and the public, 161
Hogg, C A, and Latham, Oliver, The control of enteric fever in mental hospitals 377
Holland Eardley, on the management of contracted pelvis, 1009
Holmes George W, and Ruggles, Howard E, Roentgen Interpretation, 3rd edit (R), 1067
Holmes, Gordon, on pituitary disorders, 386
Honey prepared (Empire produce) (R & A R), 958
Honeywill, the late Dr Silas, 1191
Hope, E W, and Stallybrass, C O, Text book of Public Health 9th edit (R), 705
Horder, Sir Thomas, Health education, 795, (A), 866
Hormone, the cardiac, 973
Hormones, commercial production of, 200, experimental study and use of the (H H Dale), 199, scientific and industrial problems presented by the, 199
Horne, Jobson, Sorrows of the nasal septum 547
Horsley, the late Dr R E 257
Hosegood, the late Dr William, 1089
Hospital amalgamation in Birmingham, 940, in Liverpool, 949, and medical services, economy in (P I), 351, dinners, 782, 834, film, a, 1141, general, pathological service of the, 362, (C), 624, an Indian military, 798, in relation to public health discussion on, 1167, officers and nurses, pensions for, 84, 208 pensions scheme 360, policy in Birmingham (A) 916, Saturday (A), 506, funds, work of, 307, Saving Association's report (A), 1278, schools, 565, staff, enforced resignation from (M L), 972, staffs, pensions for, 1300, visitors (C), 408
Hospitals Andover War Memorial Hospital, opening of, 103—Auchterarder Cottage Hospital, opening of, 191—Barnsley Beckett Hospital at, new wing, 103—Bedford Hospital, motor accidents treated in 251—Belfast, Royal Victoria Hospital, extensions at, 676, opening of, 930, opening of session, 984—Birmingham Children's Hospital, Dunlop bed at, 1086—Birmingham Cripples' Union and Royal Orthopædic and Spinal Hospital, annual report 769 — *Birmingham*, Dudley Road Hospital, extensions at 1258—Bolton Infirmary, emergency cases, pressure of, 683—Bridlington, Lloyd Hospital at, new wing, 103—British *Dental* Hospital, annual report, 409—Brompton Hospital for Consumption annual report, 578—Bury (Lancashire) Infirmary, gift for enlargement and improvement of 184—*Cambridge*, Addenbrooke's Hospital, radium for, 1246—Charing Cross Hospital, *enlargement* of 567—Chelms- ford Poor law Infirmary, opening of, 361—Chelsea Hospital *for Women*, convalescent home at St Leonards, 30—Christchurch Hospital, New *Zea* land, history and description of, 686—Croydon Hospital "Baker's bed" at, 900—*Darlington* War Memorial Hos pital, laying of foundation-stone, 103—Dewsbury and *District* Infirmary, extensions of, 1303—Doncaster Infir- mary, laying foundation stone of new wards, 860—Dreadnought Hospital for Seamen, Greenwich, annual report, 578, extension and nurses' home, 41—Dublin, Coombe Lying in Hospital, centenary of, 515, 577, (A), 614 673 884—Edinburgh, *Morningside* Royal Hospital, new nursing home, 103—Edinburgh Royal Infirmary, waiting-list, 153—Elizabeth Garrett Anderson Hospital, "our week" celebrations 1194—Evesham Hospital, extension of, 922—Glasgow Royal Hospital for Sick *Children*, additions and extensions to 149—Guy's Hospital a year's work at, 209, finances of, 525, dental school, opening of extension of, 160, matron appointment of new and retirement of old, 1294—Harrogate Infirmary, laying of foundation stone, 541, 628—Harrogate Royal Bath Hospital, closing of, for lack of fuel, 1042—Hartlepool Hospital, opening of new wing by Princess Mary 411—Hexham War Memorial Hospital, addition of open-air children's ward, 484—Hospital for Diseases of the Heart and Lungs pathological research laboratory for, 208—Huddersfield Infirmary, installation of remedial baths, 150—Inverness Northern Infirmary, enlargement and reconstruction of 628—Kidderminster Hospital, extensions, opening of, 261—King's College Hospital, awards at medical school, 884 heliotherapeutic department at, 702, reopening of wards, 525, war memorials at, 1042—Knotty Ash Alder Hey Hospital new nurses' home at, 304—Liverpool Maternity Hospital, formal opening of, 834—Liverpool Open air Hospital for Children at Leasowe, annual meeting and finances, 149, *medical officer's* report, 494—Liverpool Stanley Hospital, annual meeting 209—London Homœopathic Hospital, reopening of, 567—London Hospital, annual report, 251, *children's department* quarterly report, 628, History of (E W Morris) (R), 337, prize giving at 103 scholarship in pathology at medical College award of, 309, warming of, 1351—Manchester Royal Infirmary, new surgical appointment at, 821, waiting-list at, 1246—Manor House Orthopædic Hospital gifts to, 776—Marseilles British Merchant Seamen's Hospital, appeal for funds (C), 204—Maudsley Hospital, lectures at 683, 1246 — Middlesex Hospital, annual report, 526 Dr Essex Wynter's gift (L A), 1277, rebuilding of, 1136—Morningside, Royal Hospital, new nursing home, 103—Newcastle upon-Tyne Royal Infirmary, annual report, 361 — Newcastle upon Tyne Throat Nose, and Ear Hospital opening of new wing, 986—North Riding Infir- mary, finances of, 798—Northern Hos pital, Winchmore Hill, post-encephalitis unit at 512—Okehampton Cottage Hospital, servant difficulty at, 1194—Oxford, Radcliffe Infirmary, weekly contribution scheme 628—Park Hos- pital, for Barton upon Irwell Union, laying of foundation stones 100—Poplar Hospital for Accidents, annual festival, 1351 new nurses' home opened, 202—Preston Infirmary, open- ing of light department, 1194—Queen *Charlotte's* Maternity Hospital, annual report, 510, new operating theatre, 261—Queen's *Hospital* for Children finances of 1246—Rochester, St Bartholomew's Hospital extension of, 400—Royal Dental Hospital of London, award of scholarships and prizes, 783, *dinner* 1142—Royal Free Hospital, annual report, 578, festival dinner *gifts*, 66—Royal Northern Hospital, case of small pox at, 834, 982, post encephalitis unit of, 512, (A), 1281—Royal Sussex County Hospital, Brighton, casualty depart- ment at 1246, centenary of, 1089—Royal Westminster Ophthalmic Hos- pital, future policy *of* (C), 879—Rufford Pulmonary Hospital, opening of, 361—St Bartholomew's Hospital, finances of 513, Fleet street Week for, 664 833, post graduate course for practi *tioners* (A), 344, rebuilding of in the 18th century, 214, unveiling of war *memorial* archway, 120—St Chad's Hospital, Edgbaston annual report, 94—St George's Hospital, finances of 1038—St Mary's Hospital, Paddington annual report, 578, ex- tension of, 22 post graduate courses 730, 768—St Peter's Hospital appeal for (A), 1280—St Thomas's Hospital,

Factory Bill the, 339—Filter passers and inclusion bodies, 1276—Fog and mortality, 1121 — Foot and mouth disease infection 294—Freedom of medicine, the, 815
Germany, public health in 914
Health education of the public 813—Hospitals legal disabilities of, 609—Hygiene in the elementary school precept and practice, 1173
Income tax and expenditure on professional text books 1069—Insanity, the treatment of, 187—Insulin, standardisation of, 75—Irradiation and cell division, 760
John Bull, an anthropologist on 865
Laennec, centenary celebration, 1175—Lunacy Commission Report of the, 239
Malaria, control of, 962—Maternal mortality in the United States 658—Medical life the, 759—Memory loss of, 1330—Menorrhagia 393—Metropolitan Asylums Board 392—Milk, more about 505—Mineral elements in nutrition, 1069
Narcolepsy, 1017—Nephritis a new hypothesis, 109—Nineteen hundred and twenty six, 1329—Nurse's training, the economic basis of the, 1275—Nursing homes 188
Oleothorax 306
Panel doctor's grievance, the 1275—Paying beds in voluntary hospitals 963—Plumbism and its avoidance, 1119—Pneumonia cases in fever hospitals, 133—Poliomyelitis acute 1120, in schools, 1070—Poor law reform, medicine and 603—Port sanitary work, internationalism in 556 — Posture, the physiology of 657—Poverty nutrition and growth, 240—Preventive medicine the practice of, 26—Public health in Germany, 914 survey of the, 555—Pyorrhœa and the mechanism of tooth eruption, 134
Research in general practice 863—Renal tuberculosis 1329—Rheumatism, clinics for, 914—Rivers pollution, 714
Scarlatinal infection of books, 1331—School clinics 714—Science and the State, 293—Small pox in the north, 1175—Social revolutions and the public health, 1226—Streptococcal toxin, 658
Teissier, untrue report of death of Prof, 294—Terminal disinfection 610—Tuberculosis and employment 25
What the surgeon sees 813—Wynter Dr Essex, gift to Middlesex Hospital by, 1277

League of Mercy, distributions by, 562
League of National Life, annual general meeting 983
League of Nations and the traffic in opium and dangerous drugs (A), 80
Leamington, royal (A), 819
Leamington Spa enlarged pump-room and baths 834
Leathes, J B, Address on function and design, 265
Lectures, popular value of (C), 255
Leeds, M O H 's report, 975, Poor law hospital extension at, 1179, S M O 's report, 73
Leeward Islands, medical services in, 259
Legge Sir Thomas, *resignation of, 1194*
Leicester M O H 's report, 251, poliomyelitis in, 678
Leicestershire, M O H 's report, 1343
Lemprière, L R., on management of infectious *diseases* in boarding-schools, 1062
Lens crystalline Le Crystallin *et son* Appareil Suspenseur (Felix Terrien) (R), 607
Leonard, W A Organisation and Administration of the Public Health Department (R) 705
Leprosy campaign the (C), 95
Lereboullet, Pierre, La Grippe (R), 907
Leukæmia and allied conditions, discussion on 334, lymphatic, case of of unusual type (A E Naish and Clara Tinglo) 1156
Lewis W C McC, on lead treatment of malignant disease 281
Leys, Duncan A peculiar case of pneumo-pyopericardium, 1004
Life The Nature of A Bipolar Theory of Living Processes (G W Crile) (R), 608
Life saving and First aid, International Congress for, 301
Lifting of heavy weights, 686
Ligature made from ox peritoneum, experiments on conduct and fate of, when implanted in living tissue (Sir C Ballance), 10
Light, action of, on cod liver oil (P R Peacock) 328 and type-setting 1251, and vitamins (A), 341 effect of on skin and skin diseases (C Rasch) 904, pathological action of (A) 27, upon the eye (W Stewart Duke Elder), Part III 16
Lincolnshire Holland, S M O 's report, 878
'*Linguotrite a plea for the permanent* abolishment of the (C) 621
Lipiodol in diagnosis of bronchiectasis, 1103 1109 1113 1135
Liquor opii sedativus (Battley), morphine content of increased 887
Lister centenary celebrations in 1927, 309, 772
Little E Graham Doctors and the public, 742 medical schools and the London University Bill (C) 1141, 1243
Little F Muirhead, The supply of artificial limbs (C) 1191
Liver abscess case of amœbic dysentery with, contracted in England (Alan S Simpson) 495 cirrhosis of, case of, 808 diffuse hæmangioma of, 1321
Liverpool case of bubonic plague in, 573, hospital amalgamation 949, hospital contributory scheme (A), 764, M O H 's report, 1313 new maternity hospital, 834
Llandudno, infant welfare at 1194
Llanelly B, M O H 's report 252
Lloyd Roberts Memorial lecture on the cancer problem (W E Gye), 989 on racial degeneration (Dean Inge), 1097
Lobelin, Ingelheim" (R & A R) 1274
Lobeline, observations on the action of (F R Curtis and Samson Wright), 1255
Lockhart L P, Economy in iodine (C), 831
Lockhart-Mummery, J P, Prognosis in rectal cancer, 1307
Locum tenents, principals and (C) 880
London, accidents to pedestrians in (P I), 313 clinic of psycho analysis, 946, health of, in 1925, 347
London and Counties Medical Protection Society, Ltd, joint action with Medical Defence Union, Ltd (C), 256
London, County of, S M O 's report, 405
London Hospital, *A History of the* (E W Morris), 3rd edit (R) 337
London hospitals, progress of, 510, 578, street collections for, 1247
London Post-Graduate Hostel (A), 81, 192, 261, 309, 954
London (R F H) School of Medicine for Women, presentation of prizes and certificates, 50, scholarships and bursaries awarded 308
London School of Hygiene and Tropical Medicine, appointments at, 704, Balfour, Dr Andrew, presentation to, 248, laying of foundation-stone, 86, 153, medals awarded, 309 pass lists, 260, work *of (A) 1280*
London street accidents 1085, 1293
London University Bill *medical schools* and the (C), 1141, 1189, 1243
London's milk, the pasteurisation of, *160*
Longevity the elements of (A), 508
Lotmar, F, Die *Stammganglien* und die extrapyramidalmotorischen Syndrome (R), 1273
Love, R J McNeill, Acute pancreatitis, 1262
Lovell, R *Goulburn*, Why Tuberculosis Exists How it may be and has been Cured and Prevented (R), 1271
Low, George C, and Cooke W E, Congenital case of kala azar, 1209
Low, V *Warren* Workmen's compensation and the surgeon 844
Lowry, C G Hospitals in Northern America, 1250
Lucas R Evelyn, Social capacity *in* delinquency (C) 1292
Lucas, the late Dr R. H, 1036
Lumsden, Thomas, Further observations on immunity in relation to transplantable malignant tumours 112
Lunacy *certification*, Board of Control and (P I), 312
Lunacy Commission, report of the (L A), 239, some critical views on, 302
Lunacy law *reform* (P I), 313
Lush Joan L Pregnancy, hyperpnœa and meningitis 1005
Lust F, Diagnostik und Therapie der Kinderkrankheiten 4th edit (R), 706
Lustre Pottery, Pink (Atwood Thorne) (R), 1252
Lyme Regis new hospital for 208
Lynch Jerome M, and Felson J, Tumours of the Colon and Rectum (R) 755
Lysol "free from carbolic acid" (M L), 1184

M

McAldowie Alexander Morison (O) 683
MacAlister, Sir John (A), 716
McAllister Andrew, *Reform in midwifery* (C), 776
McCall Annie Tuberculin dispensaries (C), 681
MacCallan A F Treatment of trachoma (M T T) 919
McCarrison R, Endemic goitre in New Zealand (C) 96
McCowan, P K and Harris, J S, on chronic epidemic encephalitis 1220
McCrindle the late Dr J D 1143
McDonagh J E R, The dissolution of *insulin (C) 1346*
MacDonald Arthur, Study of death in man (C), 624
Macewen Sir William oration on life and work of, by Prof Young (A), 81
McGowan, J P, Pernicious Anæmia, Leucanæmia and Aplastic Anæmia (R), 861
McIlroy Louise on ethical considerations as to terminating pregnancy 379, on induction of premature labour in contracted pelvis, 381
McIntosh James on the modern trend of prophylactic and therapeutic immunisation, 889
Mackay, Helen M M, on food deficiency and preventable disease, 497
MacKenna, Robert W, on psoriasis, 550
McKenzie Dan, Diseases of the outer ear, 1008
Mackenzie Sir James The Beloved Physician (R McNair Wilson) (R), 906
Mackenzie Ronald D, and Illingworth, C F W, *The Rous sarcoma No 1, 745*
McKenzie T Clyde, Practical Ultra-Violet Light Therapy (R), 861
McLachlan, A R, and Falconer, A W, Splenectomy in purpura hæmorrhagica, 493
McLachlan Thomas Pasteurisation of milk (C), 357, 878
Maclay, the late Dr Neil, 100
MacLeod, Donald, Some factors to be considered in the operation of posterior gastro jejunostomy *490*
Macleod, J J R, Carbohydrate Metabolism and Insulin (R) 552 and Campbell, W R, Insulin Its Use in the Treatment of Diabetes (R), 290
McLoughnane, F McG, Renal Surgery (R), 1222
McMechan F H, *on the newer gaseous* anæsthetics 331
MacMullen W H, on migraine from the ophthalmologist's viewpoint, 384
McNee, J W, on the biliary secretion, 234
McVail, John Christie (O) 306
Madagascar, health conditions in 925
Madeira, the gardens of (A), 719
Madras Presidency, epidemic diseases in, *1080*
Magian, A C, Insufflation of Fallopian tubes, *1270*
Magnus Rudolph Studies in the physiology of posture (Cameron Prize lectures), 531, 585
Malaria (Paludisme) (E Marchoux) (R) *502* and tuberculosis, 675, benign tertian, case of general paralysis with (Geoffrey T *Baker*), 903, control of (L A) 962 elimination of 1080; in India (P I) 1146, in Italy, 160, studies in artificially induced (A), 137
Malarial parasites and methylene-blue, 361
Malarial treatment of general paralysis, 1338

Intoxicating liquor or patent medicine? (M L), 923

Intracranial Physiology and Surgery, Studies in (Harvey Cushing) (R), 1170

Intratracheal anæsthesia (Stanley Rowbotham), 583

Intussusception acute recurring 1321, adenoma of jejunum causing (R C B Maunsell) 599 in an adult, acute (F W Widgery) 122, of infants, spinal anæsthesia in (Hamilton Bailey), 648, treatment of acute (Gertrude Herzfeld) (M T T), 767

Intussuscipiens stretching the (C) 729

Invalid Children's Aid Association Conference 915

INVENTIONS, NEW—Colostomy cup, simplified (G F Stebbing), 1274—Dressing table, a (A P Bertwistle) 554—Hæmostatic forceps (G L Preston), 390—Radium needle stand, operative (A B and S M Smith), 605—Tracheotomy tube new (A Cubley) 656, 734—Vulsellum forceps improved (H C Donald), 390

Involutional excitement, 821, melancholia, 820

Iodide eruption (Henry C Semon), 803

Iodine and goitre (A), 1022, economy in (C), 831

IRELAND, CORRESPONDENCE FROM—Belfast Mental Hospital, annual report, 676—Belfast Royal Victoria Hospital 676—Cancer, Research Institute for, in Dublin 1079, 1183—Census of Irish Free State, 515—Coombe Hospital, centenary of, 515—Cork, public health appointments in, 727—County hospitals, condition of 727—Dublin University Biological Association, 1079—Hospitals public and medical fees 676—Irish tuberculosis officers in England 145—Jones, Sir Robert in Dublin, 1028—Medical officers of health, county, 1183, Register, 727, service, a national, 1183—Milk supply in Ireland, 145, 1183, committee on 251—Moynihan, Sir Berkeley, honorary degree for, 145—Physical and mental disorder address on, 1079—Rotunda Hospital, appointment of Master 1028—Tuberculosis Officers Association, annual meeting, 250, in England Irish, 145—University College Medical Society, opening meeting, 1028—University of Dublin, Trinity College, post graduate course at, 251

Ireland, inspection of school children in, 984, medical registration in, 412, Royal College of Physicians (A) 764, treatment of tuberculous insured persons in, 573

Irish Free State and the Medical Register, 1303

Irish public hospitals and medical fees, 883

Iritis, acute, treatment of (Ida C Mann) (M T T), 399, recurrent (A), 1177

Irradiation and cell division (L A), 760

Isacen Roche brand (R & A R), 128 213

Italy, malaria in, 160

J

Jacksonian epilepsy, 1217

Jago, William, Treatment of flour (C), 1038

James, G W B, Treatment of senile insanity (M T T), 820, 870

Jameson, Jean D, and Dowd, Mary T, Food Its Composition and preparation 2nd edit (R), 908

Jarrett, R Fitzroy, Some observations on social capacity application of Porteus maze tests to Borstal lads, 1059

Jaundice, *see* Icterus

Jaws, fractures of the, treatment of (A T Pitts) (M T T), 1336

Jejunal ulcers, secondary, and their radiological diagnosis (S Gilbert Scott), 222

Jejunum, adenoma of, causing intussusception (R C B Maunsell), 599,

Jenkins, G J, on after treatment and results of mastoid operation, 547

Jex Blake, A J, Obstruction of œsophagus by persistent ductus arteriosus, 542

John Bull an anthropologist on (L A), 865

Johnson, the late Dr G P, 1076

Johnston, George Jameson (O), 820

Johnston, J M, New growths in the thorax differential diagnosis from tuberculosis, 537

Johnston Samuel, on the benefits and future of anæsthesia, 331

Joint action by medical defence societies (C), 256

Joint jackets, *Zorbo*, 880

Joint Tuberculosis Council post graduate lectures, 360

Joints, measurement of movement in (A), 762

Jones H Wallace Some points in the prognosis of auricular fibrillation, 640

Jordan Alfred C Chronic Intestinal Stasis 2nd edit (R), 755, Surgery of elongated pelvic colon (C), 358

JOURNALS (reviewed)—Archives Medico Chirurgicales de l'Appareil Respiratoire (A) 313—Bolletino della Società fra i Cultori delle Scienze Mediche e Naturali in Cagliari 1274—British Journal of Children's Diseases, 24, 862—*British Journal of Ophthalmology*, 1016—Cancer Review, The, 128—*Folia Clinica Chimica et Microscopica*, 608—Guy's Hospital Reports 127—Indian Journal of Medical Research, 24 554—Journal of Industrial Hygiene 390, 908, 1172—Journal of Mental Science, 707—Journal of Pathology and Bacteriology, 292, 812—Journal of Physiology, 137—Leech, The, 987—Prescriber, The 1067—Quarterly Journal of Medicine 553, 1171—Rassegna Internazionale di Clinica e Terapia, 1016—Revue Médicale, 1304

Journées Médicales de Paris (A), 296, 303

Jowett, H A D, on the history of adrenalin, 200

Judson the late Dr W H, 983

Juler, Frank The treatment of cataract (M T T) 83

K

Kahler, O, and Denker, A, Handbuch der Hals Nasen Ohren Heilkunde, Vol II (R), 70

Kala azar, congenital case of (G C Low and W E Cooke), 1209, life cycle of (A), 506, the transmission of (A), 140

Karlsbad, international post graduate course at, 102

Kemp Welch death of Mr Henry, 262

Kennedy, Alex Mills, Medical Case Taking (R), 1224

Kent coalfields, hospital provision for, 984, medical fees in (A), 1075, M O H's report, 1343

Kenwood, Henry, Pasteurisation of milk (C), 408

Kenya yaws in (A), 507

Ker, Dr Claude, memorial tablet to, 823

Kerr, Douglas, on medico legal importance of carbon monoxide poisoning, 1218

Kerr, James, The Fundamentals of School Health (R), 1170, the nomographic method an error of omission (C), 980

Kerr, R R, on abdominal tuberculosis in children, 1013

Keynes, Geoffrey, Technique of blood transfusion (C), 520

Khartoum, medicine at (A), 614

Kidney, capacity of, for concentrating chloride (O L V de Wesselow), 594 Diseases of Pathologie und Klinik der Nierenerkrankungen (*Fritz Munk*), 2nd edit (R), 238, non tuberculous infections of the (*Hugh Cabot*), 53

Kilduffe, Robert A, A Manual of Clinical Procedure (R) 755

King Edward's Hospital Fund, and pensions for hospital staffs, 1300, annual report (A), 720, meeting of, 1325, statistical report of Economy Committee, 510

King, Isabel Falconer, Case of pneumococcal meningitis originating from occult sinusitis, 545

King, J J, Local Anæsthesia in Otolaryngology and Rhinology (R), 1272

King's Prizeman at Bisley, the medical, 214

Kingsley, J S, Comparative Anatomy of Vertebrates, 3rd edit (R), 1118

Kingston District Nursing Association, letter from Minister of Health about cases of septic infection, 103

Kirk, J Balfour, Hints on Equipment and Health for *Intending Residents in the* Tropics (R), 656

Kleptomania and dishonesty (A), 79

Knaggs R Lawford, The Inflammatory *and Toxic Diseases of Bone* (R), 705

Knives, "Minop" surgical, 888

Knox, Robert, on X rays in malignant disease of upper air and food passages 546

Knutsford's Autobiography, Lord (A), 1074

Kowarschik, Dr, Die Diathermie, 5th edit (R) 501

Kräpelin, Prof death of 825

L

Lacrymal secretion as a bactericide, 1202

Lactic acid milk in infant feeding 323, (L A) 341

Ladies' Medical Golfing Society, autumn meeting 931

Laënnec centenary, celebration of, 411, 1041 (L A), 1175

Lake Richard Contributions to the Art and Science of Otology (R) 336

Lancashire M O H's report, 1185

Lancashire's fight against tuberculosis, 361

Lane, Clayton Treatment of ankylostomiasis (M T T), 346 (C), 624

Lane, James Ernest (O), 1033

Lane, S A, Unusual case of removal of colon 1163

Lang F W, Perforation of gastric ulcer during X ray examination 1061

Langley, George J, and Porter, Elsie, Studies in blood sugar 947

Langstein, Leo, Dystrophien und Durchfallskrankheiten im Säuglingsalter (R), 907

Lankester, A Leslie, Case of complete suppression of urine for three days, 598

Lapage, Charles Clement (O), 927

Larrey, Baron (A), 718

Latham, Oliver, and Hogg, C A The control of enteric fever in mental *hospitals* 377

Laughter and tears (A), 1074

Lawrence, the late Dr Alexander, 1207

Lawrence, R D, The Diabetic Life Its Control by Diet and Insulin, 2nd edit (R), 24, The dissolution of insulin (*C*), 1190

Layton, T B, Focal sepsis in its rhinological aspect, 527

Lead, biological action of, 281, colloidal, demonstration in malignant disease at Liverpool 1237

Lead *Paint Poisoning Bill* (P I) 310, 354, 1090, 1144, 1195, (M L), 1341

Lead *Poisoning* (*Joseph C Aub* and others) (R), 1116, and its avoidance (L A) 1119, compensation liability of successive employers (M L), 564, from food (A) 507, in the Potteries (P I), 313, 1090, 1298, industrial, mechanism and incidence of, 1132

Lead treatment of malignant neoplasia, discussion on, 281

LEADING ARTICLES

Accidents and hospitals, 864—Acid milk in infant feeding, 341—Anæsthesia, combined, in abdominal surgery, 293—Animals, experiments on, 1174—Aphasia, our knowledge of, 814—Appeal, the right of, 913—Biliary physiology and pathology, 713—Birth control instruction by public authorities, 1018—Blind welfare of the, 760—Blood transfusion, reaction to, 555—British Empire Cancer Campaign, 134—British Medical Association meeting at Nottingham 241

Cancer, the natural duration of, 187—Certification and insurance practice, 961—Cholecystography, 25—Circulation control of peripheral, 1225—Civic health weeks 915

Encephalo myelitis following vaccination, 504—Enteric infections in mental hospitals 391—Epilepsy as a defence, 1017—Epsom College the new sanatorium, 1225—Examinations, 459—Eye, microscopy of the living, 340

Mercantile marine, health in the (A), 816
Merchant seamen, international aid for, 1353
Mercury in late syphilis (A), 1075
Mesenteric Vascular Occlusion (H J Cokkinis) (R), 127
Mesothorium, cancer cured by, 404
Metabolism Basal in Health and Disease (Eugene F Du Bois) (R), 126
Methylene-blue, malarial parasites and, 361
Metropolitan Asylums Board (L A), 392, annual report, 392, appointments, 261, course in hospital administration, 345, 1194, samples of the year's work, 512, 565
Metropolitan Hospital Sunday Fund, 1328, 1351
Mexican Blue Cross, the (M L), 39
Mexico, medicine in (Frances E Smith), 413
Meyer, Hans, Lehrbuch der Strahlentherapie, Vol I (R), 290
Michelmore, Ralph G , Ultra violet radiation in cœliac disease, 1264
“ Microbe hunters ” a public denial (C), 729
Micrometer syringe apparatus, “ Agla,” 529
Microscopy, Practical (F Shillington Scales), 3rd edit (R) 127
Midwifery, *Atlas of (Comyns Berkeley* and George M Dupuy) (R) 606, teaching and practice of, a plea for *drastic reform* (G W Theobald), 633, (C) 728 776, 777
Midwives and Maternity Homes Bill (P I), 209, 310
Midwives, use of pituitrin by, 230
Migraine, discussion on, 384
Milbank Trust, work of the (A), 1023
Miles, Alexander, and Thomson, Alexis, Manual of Surgery, Vol II, 7th edit (R), 186
Milk and Dairies Order (P I), 1297
Milk and the public health 309 and tuberculosis (A), 1076, colouring matter in, 949 condensed skim, as infants' food (P I), 1147 deficiency of fat in (M L) 674 771, 1084 designations (C) 831, irradiated its effect on the blood (Veronica Dawkins and C Lee Pattison), 1314, lactic acid, for infant feeding 323 (L A) 341, more about (L A), *505* pasteurisation of (C), 357, 408, 575, 680, 730, 778, 878, 980, in Illinois, 1046 tubercle free (A), 398
Miller, James, Status lymphaticus (C), 357
Miller, Reginald, The rheumatic problem in children, 769
Milligan, Sir William on blood pressure and ear disease, 1268, on cancer of tongue 284 on radium treatment of malignant disease of upper air and food passages, 546
Mineral elements in nutrition (L A), 1069
Miners and silicosis (P I) 312, 313
Minerva 28th issue (R), 1324
Mining industry, fatal accidents in (P I), 313
Ministry *of Health* and notification of puerperal pyrexia, 309 annual report of Chief Medical Officer (1925–26) (L A), *555*, 618, medical staff of (P I), 210, memorandum on cancer of the breast 611, 671, on incapacity for work, 301, new officials at (P I), 1092, secretarial appointment, 1042, vote in the Commons (P I), 155
“ Minop ” surgical knives, 888
Mitchell, A B , on spiral fractures, 285
Mitchell, W E M , Treatment of distension overflow of urine (M T T), 1025
Moncrieff, Alan, Nicholas, F G , and Bennett T Izod, Observations on cholecystography, 19
Mongolism ætiology *of* (A), 1332
Monocytes and bacterial infection (A), 918
Monotony *factor* in work, discussion on, 235
Monrad-Krohn G H , Clinical Examination of the Nervous System, 3rd edit (R) 1323
Mont Dore, children's spa at, 264
Montgomery lecture on the clinical use of the slit lamp (T Harrison Butler) 315
Moon, R O , Case of heart disease and epilepsy, 65
Moore, R Foster, on significance of retinal hæmorrhages, 498
Moore, S G , Pasteurisation of milk (C) 680, 980, milk designations (C), 831
Moorehead, Frederick, and Dewey Kaethe W , Pathology of the Mouth (R), 335
Moots, C W , on anæsthesia in abdominal surgery, 285
Morgan, Thomas Hunt, The Theory of the Gene (R), 186
Morland, Andrew, Heliotherapy in pulmonary tuberculosis (C), 681
Morphine derivatives, hydrated (A), 1228
Morris, E W , A History of the London Hospital, 3rd edit (R), 337
Morris, R M , Manson Bahr, P H , and Newham, H B , *Study of sprue and Addisonian anæmia*, 269
Mosquitoes in Vienna 513
Mostyn, the late Dr Sydney Gwenffrwd, 50
Motor Show at Olympia 871, 938 969
Mottram, J C , Effect of β radiation on Rous chicken tumour 1260 irradiation and cell division (C), 830
Mottram, V H The Functions of the Body (R), 1066
Moulds (A) 817
Mouth Pathology of the (F Moorehead and K W Dewey) (R), 335
Mouth Throat, Nose, Ear and Eye, Non Surgical Treatment of Diseases of (Thomas H Odeneal) (R), 70
Moynihan Sir Berkeley Before and after operation (Harveian Oration) 789
Mumford, Alfred A , on physique, stamina and efficiency of schoolboys, 956
Mummery J Howard (O), 576
Munk Fritz, Pathologie und Klinik der Nierenerkrankungen 2nd edit (R), 238
Murray, J A , on the experimental attack on cancer problems, 22
Murtz, A P , *Reform in midwifery* (C), 728
Myelitis with optic neuritis case of 953
Myeloid sarcoma malignant (osteoclastoma) (A) 818
Myers Charles S , and Bartlett F C , Text book of Experimental Psychology, 3rd edit (R), 501
“ *Myoplastic suspension,*” 734

N

Naish, A E , and Tingle, Clara, A case of lymphatic leukæmia of unusual type, 1156
Narcolepsy (L A), 1017
Narcolepsy as a symptom of encephalitis lethargica (C P Symonds) 1214
Narcosis in psychiatry, prolonged (A), *662*
Nares, posterior, congenital occlusion of (A.), 718
Nasal accessory sinuses, treatment of infection of (G Seccombe Hett) (M T T) 968 septum, sorrows of the (Jobson Horne), 547
National Association for Prevention of Tuberculosis, new address of, 731, 12th annual conference, 89 Baby Week Council, quarterly meeting, 1150 Council for the Unmarried Mother and her Child, annual report, 887, Institute for the Deaf (A), 663, appointment of non-consultant, 731, Institution for the Blind, annual report of, 411, Veterinary Association annual meeting, 309
Naval Medical Compassionate Fund, meeting 208
Navy, invaliding procedure in the (P I), 100, 209, tuberculosis in (P I) 1196, venereal disease in the (P I), 100, 101
Naylor Davidson, Clarice H M , “ Over Frays ” an Original House for Practical People (R) 861
Neave, Fredk. G The Law Relating to Injuries to Workmen, 3rd edit (R), 336
Negligence, professional (M L), 724 1138
Negro, M , and Blanc, H , La Cystographie (R), 291
Nelson, Sarah H , Microscopic appearances of the spinal cord in tetanus, 852
Nelson, Thomas, Case illustrating after-effects of poison gas, 1213
Nematoda, A Synopsis of the Families and Genera of (H A Baylis and R Daubney) (R), 553
Neo Reargon (R & A R), 1118
Nephritis, erysipelas and (C), 521, in children, acute (A), 561, discussion on, 600, new hypothesis of (L.A), 609
Nerve block, alcoholic for pain in malignant *disease* (A) 243
Nerve, heat production of (A), 866
Nervous Anatomy Les Noyaux Gris Centraux et la Région Mésencéphalo-sousoptique (Ch Foix and J Nicolesco) (R), 1015
Nervous and Mental Disorders, from Birth to Adolescence (B Sachs and L. Hausman) (R), 960
Nervous child, the (Millais Culpin), 785
Nervous Disorders Functional (Paul Bousfield) (R), 502
Nervous System *Clinical* Examination of the (G H Monrad-Krohn) 3rd edit. (R), 1323, Diseases of the (H Campbell Thomson and George Riddoch), 4th edit (R), 69, insulation of the (Wilfred Trotter) (Victor Horsley Memorial lecture), 107
Neurological Conference at Oslo 731
Neuro syphilis, tryparsamide therapy in (J D Silverston), 693 (A), 716
New-born Diseases of the (J A Foote) *(R), 700 immunisation of, against* tetanus 514
New Brunswick and the Medical Register, *1089*
Newcastle upon-Tyne, M O H 's report, 678
Newham, H B Morris R M , and Manson-Bahr, P H , Study of sprue and Addisonian anæmia 269
Newman, Sir George on the practice of preventive medicine (L A), 26
Newsholme, Sir Arthur, Private medical practice and preventive medicine, 894
New York, Health Centre in, 1294

NEW ZEALAND, CORRESPONDENCE FROM
—Paying wards in hospitals 39

New Zealand, endemic goitre in (C), 96, Otago Medical School (A) 765
Nicholas F G , Bennett, T Izod, and Moncrieff, Alan, Observations on cholecystography 19
Nicolesco, J , and Foix Ch , Les Noyaux Gris Centraux et la Région Mésencéphalo sousoptique (R) 1015
Nigeria, disease in (P I), 1147
Nineteen hundred and twenty-six (L A), 1329
Nitrous oxide, and the ignition points of certain anæsthetic vapours, recent investigations on, 124
Nobécourt, P Clinique Médicale des Enfants Troubles de la Nutrition et *de la* Croissance (R), 553
Noble, the late Dr S C , 1246
Nomenclature of abnormal uterine hæmorrhage (C) 519
Nomographic method an error of omission (C), 980
Non specific therapy, investigation into, 1065
Norfolk, M O H 's report, 1344
Normacol (R & A R), 1118
North and East Riding Medical Benevolent Society, annual meeting, 946
Northampton M O H 's report, 976
Northamptonshire, M O H 's report, 623, S M O s report, 877
Nose, paraffin in plastic surgery of the (C), 1037
Nottingham, S M O 's report 679
Nuneaton, S M O 's report, 1086
Nurses' Bureau, a registered 414, (C), 626, Handbook for (J K Watson), 7th edit (R), 862, Home new, at West Derby, 304, in Mental Hospitals, Probationer, Hints to (Richard Eager), 2nd edit (R), 862, pensions 85, 208, prison (P I), 356 training, the economic basis of the (L A), 1275
Nursing, College of Queen appointed Patroness, 261 diploma in, at London University, 260, (A), 299, homes (L A), 188, in America cost of private, 349, in Scottish Health Administration, 726, Mental *see* Nurses in Mental Hospitals of Diseases of Nose, Ear and Throat (Michael Vlasto) (R) 862, Ophthalmic (M H Whiting) (R), 608 service, an insurance company's, 1096
Nutrition, an encyclopædia of (A) 395, Troubles des Échanges Nutritifs (C. Achard) (R.), 23
Nyasaland, public health in, 938

Malignant disease, colloidal lead in demonstration by Liverpool Medical Research Organisation, 1237 , of upper air and food passages treatment of, discussion on 546 pain in, alcoholic nerve block for (A), 243
Malignant neoplasia nature of, and its treatment with lead, discussion on 281
Malignant tumours following application of an irritant (H P Pickerill), 854 , further observations on immunity in relation to transplantable (Thomas Lumsden), 112 , (C), 256 , note on different kinds of, experimentally obtained by means of radium (F Daels and G Baeten), 666
Manchester, cancer campaign in 325 , Civic Week at 931 , cremations in, 1194 Hospital Saturday Fund, 116 , hospitals, work of, 831, 837 , Literary and Philosophical Society, Carnegie Trust, grant to, 1207 , M O H 's report, 1240 , Port Sanitary Authority, M O 's report, 517 , School of Obstetrics and Gynæcology, historical account of, 855
Manic depressive psychosis, discussion on, 385
Mann Ida C , Treatment of acute iritis (M T T), 399
Manson Bahr, P H , Newham, H B , and Morris, R M , Study of sprue and Addisonian anæmia, 269
Mapother, E , on after effects of encephalitis lethargica, 1284 on manic-depressive psychosis, 385
Marchoux, E , Paludisme (R), 502
Margarine for butter in Poor law institutions (P I), 100
Market Drayton, diphtheria at, 931
Marrack John, and Robinson Sybil, Comparative value of renal efficiency tests in patients with enlarged prostates, 369
Marseilles British Merchant Seamen's Hospital (C), 204
Marshall, William Edward (O), 730
Martin A R , and Brown M Note on the treatment of general paralysis by tryparsamide, 699
Martin William George (O), 927
Mastoid operation after treatment and results, discussion on, 517
Maternal mortality and morbidity in America, 579 , (L A), 658
Maternity and child welfare centre at Sheffield, 925 conference on, at Westminster, 129
Maternity homes, medical inspection of (P I), 154
Maudsley lecture on prevention of insanity (George M Robertson), 158
Maunsell, R Charles B , Case of adenoma of jejunum, causing intussusception, 599
Maupassant, Guy de (R H Sherard) (R), 502
Mayo, Charles H and Plummer, Henry W , The Thyroid Gland (R), 1170
Mayo Clinic Papers, Vol XVII (R) 1323
Measles, inoculation against, 675 , showing unusual nervous symptoms, case of (J Todesco), 21
Meat contamination by flies (M L), 1032
Meat, imported, veterinary inspection of (P I), 210
Meat poisoning, epidemic of, near Berlin, 250
Mediæval medicine (A), 342
Mediastinal tumours (A), 296
Medical addresses, 887 , advertisements in the press, 837 , and biological science, early (R T Gunther) (A), 342 , articles in the general press, 832 , cinematography, 250 Defence Union, 229, annual general meeting, 731, annual report (A), 663, joint action with London and Counties Medical Protection Society, Ltd (C) 256 , Diagnosis (C L Greene), 6th edit (R), 552 , Diary, 51, 104, 157, 212, 262, 314, 362, 412, 480, 526, 579, 629, 683, 732, 783 835, 885, 933, 984, 1043, 1093, 1147, 1199, 1249, 1303 , Dictionary, Stedman's Practical, 8th edit (R), 414 , Directory for 1927 (R), 1224 , education in India, 248 , Electricity and Radiology, Handbook on (James R Riddell) (R), 706 , English, 414 , Exhibition, London 682, 779, 826 fees at inquests (A), 1280, in Kent (A), 1075 , Golfing Society, autumn meeting 884 Gymnastics and Massage in General Practice (J Arvedson), 2nd edit (R), 812 , History, the Peaks of (C L Dana) (R), 707 , instruction by pamphlets, 125 , Insurance Agency, annual report and meeting, 146, 1341 , life, the (L A), 759 , literature and journalism, 1352 , missionary work, 582 , news, 48, 102, 151, 207 260 307, 359, 411, 525, 578, 628, 682, 730 781, 833, 883, 928, 980, 1040, 1088, 1142, 1193, 1245, 1301, 1350 , officers of health reports, 10, 71, 147, 251, 405, 570 622 677, 774, 875, 975, 1029, 1185, 1240, 1288 1343 , practitioner and the public (R G Hogarth) (Presidential address B M A), 161 , practitioners and dangerous drugs (A) 342, *and see* Medicine and the Law Register, New Brunswick, and the, 1089, untraceable practitioners in 1926, 568 , registration in Ireland, 412 , Research Committee of Privy Council for, alteration of composition of 345
Medical Research Council appointments to, 720 , Reports Cancer, natural duration of (L A), 187 diets for boys during the school age (A), 295 epidemic encephalitis outbreak in Sheffield in 1924 (A) 1123 fœtal mortality, 1337 , illumination in relation to visual capacity, analysis of recent work on 413 , poverty, nutrition and growth (L A), 240 , Salmonella group (A), 397 , small pox and climate in India, forecasting of epidemics (A), 190 , ventilation and heating in certain factories, physiological study of (A), 31
Medical schools and the London University Bill (C) 1141, 1189, 1243 , schools opening of, 682 731 , sickness and life assurance 884 students, numbers of (1900–25) 480, selection of (A), 1073 , visit to a spa 1193 tour of French Riviera 783 Women's International Association, 628

MEDICINE AND THE LAW —Acts of Parliament, commencement of 1340—Assessors technical, the judicial value of, 88—Chemist s supposed error, 772—Coroner s duties under the Petroleum Act, 516—Dangerous Drugs Acts direct personal supervision," 1084 important submissions for defence, 872 non disclosure of concurrent treatment 563 725 withdrawal of permit, 402, 516, 1287—Dentistry in the market place, 402—Discipline cases professional appeal to High Court from quasi judicial bodies 338—Diseases of Animals Acts ignorance of the law, 973—Drug addict getting prescriptions from several doctors concurrently, 674—Drunkenness while in charge of motor car defence of insulin poisoning, 402—Fees, a claim for, 88 , successful action for, 873, 971—Fishmongers the mystery of the, 247—Forceps left in the body after operation, 724—Hairdresser's licence revoked alleged exorbitant charges for scalp treatment, 873—Harnett appeal, 246—Hospital collections precautions against fraud, 144, 620—Hospital, patient declining to remain at, 621—Hospital refuses attempted suicide, 1236—Identification by finger prints, 36—Inquest quashed duty to view body, 338—Insulin poisoning, defence of, in charge of drunkenness, 402—Intoxicating liquor or patent medicine ? 923—Irresistible impulse, 246—Kynaston case the, 1084, 1286—Lead Paint (Protection against Poisoning) Act, 1341—Lead poisoning compensation liability of successive employers, 561—Live birth, the legal definition of a gap in the law, 402—Lysol " free from carbolic acid," 1184—Manslaughter, acquittal of two doctors on charge of 1184—Marmion, the case of Miss, 1236—Meat contamination by flies 1237—Milk bottles filled in street, 1287—Milk deficient in fat, 1084—Milk, sale of deficiency of milk fat, 674, 771—Narcotic drug, death from overdose of, 144—Negligence, action for alleged failure to diagnose fractured clavicle, 1138—" Negligence, but not gross negligence " 724—Partnership disputes, 37—Penal case before Bombay Medical Council 1287—Poisoning cases immediate treatment at hospitals, 620—Post mortem examinations in hospitals, responsibility for, 89—Prison clothing, 247—Rabies, destruction of dog suspected of, 724—Reports, the check on judicial, 1340—Resignation from hospital staff, enforced, 972—Specialist, an unregistered, 1184—Tetanus, a death from, 516—Unregistered practitioner, convicted, 923—Vaccination conscientious objector's false declaration, 1184—Venereal Diseases Act, charge under the, 37—Wine, non alcoholic, 972 , what is ? 972—Woman juror's illness, 971

Medicine and the Press, 1078 , the freedom of (L A) 815 , History of, Atlas of the (J G de Lint), Vol I Anatomy (R), 811 , mediæval (A), 342 , Modern, Osler and McCrae s, 3rd edit , Vol III (R) 500 , the portal of, 480 , preventive, private medical practice and (Sir Arthur Newsholme), 893 , research work on, discussion on, 1111 , Recent Advances in (G E Beaumont and E C Dodds), 3rd edit (R), 754 , through the maze of (Andrew Balfour), 1047
Meinicke, micro reaction for syphilis, 875
Meisen, V , Injection treatment of varicose veins (C), 926
Melanotic epithelial odontome, a (A), 190
Mellanby, John, The mechanism of pancreatic secretion, 215
Memory Factor in Biology, The (C J. Patten) (R), 1117
Memory going back to the age of six months 1252
Memory, loss of (L.A), 1330
Mendelian variation in bacteria (A), 660 , (C), 880
Meningitis, pneumococcal, case of, originating from occult sinusitis (Isabel F. King), 545 post scarlatinal (J Graham Forbes), 1207 , pregnancy, hyperpiesia and (Joan L Lush), 1005
Menko, Herman S N , A case of influenzal encephalitis 753
Menopause, the, in professional women, 8
Menorrhagia (L A), 393 , treatment of (C) 520
Mental accidents (Albert E Davis), 117 , defectives in the West Riding 261 , defectives, local authorities and (P I), 101 , Deficiency Bill (P I), 209, 257, 1198 (*see also* Mental welfare) disease and deficiency annual report of Board of Control, 651 , research in, 1338 , " shock " treatment of Traitement des Maladies Mentales par les Chocs (C Pascal and Jean Davesne) (R), 705
Mental disorder in Scotland (A), 868 ; Royal Commission on (A), 966
Mental hospitals and their relation to general and other special hospitals (G F Barham), 986 , the control of enteric fever in (C A Hogg and O Latham), 377 (L.A), 391 , illness, what is a ? (Noel H M Burke), 630, 684
Mental Hospital Reports Aberdeen, Kingseat Mental Hospital, 573—Belfast Mental Hospital, annual report 676 —Brighton County Borough Mental Hospital, 573—Cardiff City Mental Hospital, 253—Carmarthen, Cardigan and Pembroke Joint Counties Mental Hospital, 518—Cheshire County Mental Hospital, 73—Colchester, Royal Eastern Counties' Institution for the Mentally Defective, 1045—Croydon Mental Hospital, 573—Cumberland and Westmorland Mental Hospital, 253—Dorset Mental Hospital 518—Down County Mental Hospital, 518—East Sussex County Mental Hospital, 519—Essex and Colchester Mental Hospitals, 572—Glamorgan County Mental Hospital, 572—Glasgow Royal Asylum, 73—Gloucester, Barnwood House Hospital, 652—Hertfordshire County Mental Hospital, 573—Leicester City Mental Hospital, 572—Middlesbrough County Borough Mental Hospital, 253—Monmouthshire Mental Hospital, 572—New South Wales report of Inspector-General of Mental Hospitals, 253—North Wales Mental Hospital, overcrowding at, 261 — Perth, James Murray's Royal Asylum, 572—Staffordshire Mental Hospitals Board, 518—Warneford Mental Hospital, centenary and history of, 214—West Sussex County Mental Hospital, 573—Worcester City Mental Hospital, 253—York, The Retreat, 652
Mental Welfare Conference of Central Association for, proceedings, 1234, 1283

Paraplegies Pottiques Contribution a l'Etude des (Mme *Sorrel Dejerine*) (R.), 68
Parasitic Protozoa of Man A Manual of the (Charles F Craig) (R), 23
Parathyroid extract in infantile tetany (A) 80
Paris, Journées Médicales de (A.), 296, 303

PARIS, CORRESPONDENCE FROM—Abortion ætiology of, 924—Acetylarsan in yaws, 350—Adenoids, removal of 675—Alcohol, resolutions against, 201—Amœbiasis, arsenical drugs in 824—Anæsthetic mixture, an, 201—Anaphylactic shock, new theory of, 925—Antiluetic campaign the, 94—Antityphoid inoculation 1343—Arsenic and grapes 1287—Arterial hypertension 514—Artificial silk inflammability of, 514—Barbituric derivatives 1287—Blood professional donors of 924—Coué Institute the 350—Cryptotoxins, 201—Dentists designation of 675—Duodenum, observations on the 1287—Education medical 1342—Epididymitis tuberculous, treatment of, 824—Fees medical, 94—First aid service in France, 824—Flour, French 350—Foreigners illegal practice of medicine by, 94—French mortality in 1925 675—Geyser, dangers of the 1287—Glycosuria and diathermy 924—Havre a sanatorium at 676—Hexamine in typhoid fever, 824—Hospital risks, 1287—Hydrocyanic acid antidote to 94—Immigration and disease 201—Infantile mortality in hospitals 1287—Insulin, modifying the action of 94—Journées médicales de Paris 303—Laënnec, centenary celebrations 94—Le Dentu death of Prof, 1182—Madagascar health conditions at, 925—Malaria and tuberculosis 675—Marriage problems, 514—Marseilles foreigners in, 350—Menard Dr death of, 515—Milk skim sale of, 350 supply 1288—Mothers homes for 676—News items 94, 201 350, 515 676, 824, 925, 1182, 1288, 1343—Nickel and cobalt in diabetes 514—Oddo Prof, death of, 676—Œsophagus, sarcoma of the, 1287—Oriental sore contracted in France 350—Pinel the centenary of 1182—Poliomyelitis treatment of by irradiation and diathermy, 1181—Quinidine diuretic action of, 924—Radium in treatment of angioma 350—Red Cross Societies, League of, 350—Sleeping sickness, treatment of 1342—Small pox epidemic, 94 823—Spinal anæsthesia accidents of, 824—Suicide, a study of 1182—Teissier, death of, 201, rumour contradicted (L A), 294—Tetanus, immunisation of *new born* against, 514—Thibierge, Dr Georges, death of, 676—Varicose ulcers, vaccinotherapy for 350

Paris, course in radiology and electrology in, 682
Park, Stanford, Some cases of long-standing drug addiction 121
Parkinson, John on sternal pain, 1010
Parliamentary appointments, 244

PARLIAMENTARY INTELLIGENCE
Accidents to pedestrians in London, 313—Air-craftsman and tuberculosis 355—Air Force *fatalities in the*, 355—Anti vivisection petition 1144—Army, venereal disease in the, 46 313 *pensions*, medical reports and 46—Artificial sunlight treatment, 45—Autumn session, opening of 1042
Bedford prison, death in 44 101, 210—Bethlem Hospital Bill 154—Births and Deaths Registration Bill, 1196, 1247, 1298—Board of Control and lunacy certification 312—Boards of guardians and relief 732—*Bombay*, women factory-workers in 313—Bread white purity of, 1145—Brymite as meat preservative use of, 1349—Business before Christmas 1042
Cancer research 312—Children, protection of, in India 45—Civil servants sickness among, 1349—Colonial medical and sanitary services, 101—Complaints against panel practitioners 1247—Coroners (Amendment) Bill 1295, 1298, 1299—Coroners and deaths by burning, 1090, courts in India 312 error in Lancashire, 356
Dairy cows in Great Britain and other countries *proportion of to population* 259, farms medical inspection of, 1043—Dental benefit approved societies and, 259 Committee's findings approved societies and 259 Corps and R A M C officers, 211 fees, approved societies and 1299, *officers regional* 1350—*Dentists Bill* new 46 100—Deposit contributors to Health Insurance 1091—Diabetes patient's treatment in prison 45—Disinfectants on merchant vessels 46—Dog stealing and medical research, 1195 1297—Dumping refuse in Lower Thames area 1091
Education *authorities and physically* defective children 1298 vote 257—Encephalitis lethargica 1092 after effects of, 526, disability pensions for 1091—Encephalomyelitis after vaccination 1147—End of the Session 1348
Factories Bill 101 310 351 1196 Inspector Chief resignation of 1247—Factory legislation and health 46—Flour impure sale of 1043—Food and drugs legislation 259—Food preservation regulations enforcement of 1300
Gas in warfare protection of civilians against, 313—General Medical Council appointment *of lay member* of 154 vacancy on 1247—Gold Coast Colony death and sickness rate in 101—Guardians and hospital treatment 1145
Hospital and medical services economy in, 351—Hospitals and coal priority, 1147 London street collections for 1247—Houses built of *concrete* and special materials 211 increasing cost of working-class 211 steel in England 1091 working-class 1247—Housing Bill Rural, *310* 353, 1248, in England and Wales progress of 154, *rehousing schemes* in insanitary areas 258, statistics 1090 subsidies, 355, reduction in, 1247
India disease among British troops in, *1092 opium in, 210 312 1248*—Indian medical service and free passages 258—Infantile paralysis, outbreak of *932, 1090, 1092* 1147, 1196 1248 1298—Injured workmen and hospital treatment, 259—Insane male patients female nurses and 46—Insurance contributions and benefits, 1299, statistics national, 45
Juveniles, protection of, 1042
Kingston Nursing Association 101
Lead Paint (Protection Against Poisoning) Bill 310 354 1090 1144 1195, *poisoning in the Potteries*, 313, 1090, 1298—Lichfield, out-relief to miners families in, 259—London doctor and Telephone Directory, 257—London University Bill 1146—Lotteries for hospitals, 1349—Lunacy certification, Board of Control and, 312 Commission's Report, Government and 1091, *law reform*, 313
Malaria in India, 1146—Manipulative *practitioners*, registration of 154—Maternity homes, medical inspection of 154—Meat, inspection of imported, *210, 313*, inspectors, qualifications of 101—Mental defective charged with attempted murder 1145—Mental Defectives Bill 209 257, 1198, 1297, local authorities and 101, and marriage 1298—Mentally defective child treatment of 210—Midwives and Maternity Homes Bill, 209 *310—Milk and Dairies Order* 1297 farmers' families and, 1043, new draft 101, producers and 1091—*Milk*, condensed skim, as infants' food 1147, for mothers in mining areas 44, imported machine-skimmed condensed 1043 regulations and imported milk, 1199 pure, 156—Milkers and disease, *1196*—Miners children feeding of 100, 259, 313, dependents and relief, 1090 *1091*, silicosis among *312*, 313—Mining districts, distress in, 1091, industry, fatal accidents in the 313—*Ministry* of Health medical staff of the 210, new officials in, 1092—Ministry of Pensions appointments, 1300—Mosquito pest at Singapore 1247—Motor bicycles as cause of street accidents 210—Motorists and dangerous driving, 101
Naphtha and safety of dock workers, 1090—Naval hospital at Hong-Kong 101 sick berth ratings pay of, 312, staff quarters at Plymouth 312 ratings and tuberculosis 1196—Navy, invaliding procedure in the, 100, 209, venereal disease in the, 100, 101—Necessitous areas, Government and the, 1348—Neurasthenic patient's pension 44—Nigeria disease in, 1147—Nurses hours at West Ham Infirmary 1195 in prisons 356—Nursing Home report, Government and 258, 1091—Nursing homes for the poorer middle class 211
Office sanitation 312—O T C infectious illness among members of, 155, members junior illness among, 210—Old Age pension vouchers, medical men and, 1349—Opium, importation of from India, 210; in India *312, 1248—Orpington* Hospital accident at 353—Outcrop workers and health insurance 313
Pension neurasthenic patient's 44; scheme family for All-India services, 1300—Pensioners and hospital treatment, 1043—Pensions Army *medical* reports and 46—Poor-law Bill 1195; hospitals hours *of work in* 731, institutions margarine for butter in 100 medical and surgical treatment in, 1248, *reform 1145 1196 relief* cost of 313 355, statistics and coal disputes 1043—Poplar, unknown disease at, 312—Post Office employees, physical tests for, 209—Privilege a question of charge of drunkenness against members 931, 932—Public health in India *211* in Scotland, 310—Puerperal septicæmia *see* Septicæmia—Purfleet, dust-shoot nuisance at, 211
Royal Air Force *fatal accidents* in the 1349—R A M C and Dental Corps officers, 211 increases of *pay, 101*, 259—Rural Housing Bill, 310 353
Saltash Pensions Hospital, *1248*—School-children necessitous feeding of, 312, 355—Scotland payment of *sickness benefit* in, 156, public health in 310 suspension of meals for school-children in, 211—Scottish workmen hospital treatment of, 259—Segregation of children from mental defectives, 1147—*Septicæmia* following childbirth, 44, 46—Shetland Islands communications with the, 211—Ships, *doctors in British* cargo, 156—Sickness and disablement benefit in 1925 1248—Silicosis among *miners, 312* 313—Small pox cases in Brondesbury origin of, 1300—Smoke Abatement Bill, 1195 *1248*, nuisance at Palace of Westminster 1199—Southwark, slum clearances in, 258—Spahlinger *tests on cattle*, 1299, treatment 1349—Specialist medical service for insured persons, *1248—Study facilities* for Indian members *of the* I M S 1043
Tropical diseases, problems of, *45*—Tuberculosis dispensaries, 211, naval ratings and, 1196
Unemployment relief, *cost of, 355*—University College, vivisection experiments on dogs at 1299—University College *Laboratory, 1247*—University of London, appointments to Senate of, 355, Bill 154 209, 313, *1146 1298* external degrees at, 154, grant to, 1043
Vaccination anterior poliomyelitis after, 1299, encephalomyelitis after, 1147, young man's death after, 1299 1300—Ventilation *experiment* in postal tube 1199, on H M ships and tuberculosis *1145*—Venereal Disease Act *(1917) Amendment* Bill, 355—Venereal disease among civil population, 101 in the Army, 46, *313* Navy, *100*, 101—Vivisection experiments on dogs and cats in London, 1300, in London physiological schools 1248, 1299; laboratories inspector of, 1298 petition against, 310
Washington Hours Convention Government and, 1300—Winchester condition of casual wards in, *1196*—Windward and Leeward Islands, medical services in, 259

Paroxysmal tachycardia *see* Tachycardia
Parry Robert (O) 881
Parsons, L G, on acute nephritis in children, 600

O

Obesity, the menace of (A), 560

OBITUARY

Adami, John George, C B E M D Camb, F R C P Lond F R S, 522
Ball, James Barry, M D, F R C P Lond, 766
Barendt, Frank Hugh, M D Lond, F R C S Eng, 979
Barnett Lawrence, M D Lond 900
Beeby, Walter Thomas, M D St And, M R C S Eng, 881
Bell, William Bruce, M B, Ch B Edin, 361
Benson Henry Porter D'Arcy, M D, F R C P, F R C S Edin 881
Bostock Edward Ingram Dr, 628
Bradshaw James Charles L R C P and S Edin, D P H, 983
Butcher, Arthur Herbert, Dr, 1215
Cadge, William Hotson, O B E, M R C S Eng, 151
Caird Francis Mitchell, LL D, M B, F R C S Edin, 1033, 1056
Cameron, Allan Gordon Russell, Dr, 50
Caregan, Owen Joseph, L R C P and S Edin 412
Castle, Walter Francis Raphael, D S C M D Camb, M R C P Lond, 100
Churton Thomas, M D Aberd, M R C S Eng 977
Clayton Greene, William Henry, C B E, M B Ch B Camb, F R C S 98
Cole, Robert Henry, M D, F R C P Lond, 410
Colenso Robert John M D Oxf, M R C S Eng, 60
Crook, Herbert David M R C S Eng, 1130
Crowdy, Frederick Hamilton M D Edin, 1016
Davenport, Cecil John, F R C S Eng, L R C P Lond 577
De Jong, Edward Meyer, D P H Manch, 1126
Dunlea, Dr John Gerald 929
Edmondson, Herbert, M B B Ch, 208
Ewart, David, O B E, M D, F R C S Edin, 766
Fleetwood William Hardy, M R C S Eng, 980
Flinn, David Edgar, M R C P I, F R C S I, D P H, 525
Fothergill, William Edward, M D, B Sc Edin, 1034
Fraser, Archie Reith, M D Aberd, 205
Garry, William Alfred MacMahon, Dr, 411
Gemmel, James Francis, M B Glasg, 1208
Gibbons, Charles Telford, M R C S, 929
Gimson, Karl Carwardine, Dr 411
Hall Edwards, John Francis, L R C P Edin, D M R E Camb, F R S Edin, 410
Hamilton, Dr Alexander, 1216
Hanson, Helen Beatrice de Rastricke, M D, B S Lond D P H Oxf, 205
Honeywill, Silas, M R C S Eng, 1194
Horsley, Reginald Ernest, M D, F R C S Edin, 257
Hosegood William, M B Edin, 1089
Johnson, Gilbert Petgrave, M B Glasg, D P H, 1076
Johnston, George Jameson, M B, F R C S I, 820
Judson, Wilfrid Hyde, M B Manch, 983
Kemp Welch, Mr Henry, 262
Lane James Ernest, F R C S Eng, 1033
Lapage, Charles Clement, M D Camb, M R C S Eng, 927
Lawrence, Alexander, M A, M D Aberd, 1207
Lucas, Robert Harry, M R C S Eng, 1036
McAldowie, Alexander Morison, M D Aberd, 683
Maclay, Neil, M B, C M Glasg, 100
McVail, John Christie M D, C M (St And and Glasg), LL D, F R F P S G, D P H Camb, 306
Marshall, William Edward, *M C*, M B, Ch B Edin, D P H, 730
Martin, William George, 927
Mostyn, Sydney Gwenffrwd, Dr, 50
Mummery, J Howard, C B E, D Sc Penn, F R C S Eng, L D S, 570
Noble Samuel Clarke, M R C S, L S A, 1216
Page, Herbert William, M Ch Camb, F R C S Eng, 626
Palmer, Charles John Linton, M R C S Eng, 1191
Parry, Robert, J P M D Lond, 881
Patmore Tennyson Deighton M R C S Eng, L R C P Lond, D P H Camb, 1089
Paul, Cuthbert Balfour, M B, F R C S Edin 978
Pisani Lionel F R C S Eng, Lt Col, I M S (ret) 103
Pollard William Robert, L R C S I, M R C P Edin 1028
Powell Samuel Arthur, O B E, M D Belf, M Ch R U I, J P, V D, 577
Pugh Laura Williams M B Edin, D P H 1348
Redmond, Charles Stennett M D N U I, L R C P I 881
Reynolds Joseph Henry, M B C M Edin 1199
Risk Edmund John Erskine, M R C S Eng, 1293
Ross Hugh Campbell, M R C S, L R C P Lond 1317
Russell, John, O B E, M D Aberd, 110
Ryan Maj Gen Sir Charles Snodgrass M B Edin, 927
Scatliff Arthur William L R C P Edin, D P H, 979
Seymour, Dr Edgar William, M V O, 259
Sherburn, Sir John, 132
Stain William Corbet, M B Edin, 1191
Steen, Robert Hunter, M D, F R C P Lond, 204
Stoker, Henry, F R C S I, D P H, 1293
Swann Mary Aelfreda St Clair, M B Lond 1035
Taylor, Daniel Macpherson, M D Glasg, D P H, 151
Tetley, Frederick Harrison L R C P & S Edin, 834
Thomson John, M D, LL D Edin, F R C S Edin & Lond 99
Todd, Henry Ross F R C S Irel, 1317
Tonking, John Herbert, M B Lond, 628
Warner Francis, M D, F R C P Lond, F R C S Eng, 1035
White, William Henry, M D Dub, M R C P Lond, 978
Williams, Charles Louis Maj, I M S, M D Edin M R C S Eng, D P H Camb, 1032
Wolfenden Richard Norris, M D Camb, F C S, F Z S, F L S 1036
Wright, Andrew Rae (Wilbur), D S O, M B, 205
Wynne Graham Smith, M R C S Eng, L R C P Lond, 1089

O'Brien, R A, on the relationship of streptococci to scarlet fever and its complications, 333
Obstetrics (John S Fairbairn) (R) 958, and Gynæcology, Sixth British Congress of (A), 243
Occupation and health 1304
O'Conor, John, Gangrene of the toe (C), 1212
Oculist, medicine or surgery for the ? (C), 1192
Odeneal, Thomas H, Non Surgical Treatment of Diseases of Mouth, Throat, Nose Ear and Eye (R), 70
O'Donovan, W J, Multiple skin cancers of unknown origin, 278
Odontome, a melanotic epithelial (A), 190
Œsophageal carcinoma, discussion on, 1006, 1141 spasm in child of four, case of, 953
Œsophagus obstruction of caused by persistent ductus arteriosus (A J Jex Blake), 542, sarcoma of the, 1287
Ogilvie, W H, Treatment of strangulated hernia (M T T), 1126
Okell, C C, on streptococci in scarlet fever, 333
Oldham, M O H 's report, 876
Oleothorax (C), 96, (L A), 506
Operation, before and after (Sir Berkeley Moynihan) (Harveian oration), 789
Ophthalmia neonatorum (A), 394, sympathetic, 206, (A), 242
Ophthalmic benefit, 500, 582, Nursing (Maurice H Whiting) (R) 608
Ophthalmological Congress, Oxford, 19
Ophthalmology in Egypt, 1150, in the last half century (Ernest Clarke), 809, 1052, towards an international congress of (A), 867, trigeminal nerve in (A), 136
Opium and dangerous drugs, League of Nations and the traffic in (A), 80, importation of, from India (P I), 210 in India (P I), 312, 1248, Indian internal policy, 249
Opotherapy, experimental, in fowls, 106
Opticians, sight testing, and eye disease (G P Hawker), 1110
Orchidectomy, 216
Orchido cœlioplasty, 246
Orchidopexy 245
Orientation, loss of in insured workmen, economic aspect (Percy Dunn), 66
Orr, Thomas G, Modern Methods of Amputation (R) 390
Orthopædic Association, British annual meeting 920 Surgery (W A Cochrane) (R), 552 The Evolution of (R B Osgood) (R), 336
Osgood, Robert Bayley, The Evolution of Orthopædic Surgery (R), 336
O'Shaughnessy, L F, Case of double intestinal obstruction, 1163
Osler and McCrae's Modern Medicine 3rd edit, Vol III (R), 500
Oslo Neurological Conference at, 731
Osteitis deformans, case of, 808
Osteoclastoma (A), 818, (C), 927
Osteomyelitis of clavicle, 1166, variolosa, 1166
Otago Medical School, clinical teaching at (A), 765
Oto laryngology and Rhinology, Local Anæsthesia in (J J King) (R), 1272
Otology, Contributions to the Art and Science of (Richard Lake) (R) 336
" Over Fens " an Original House for Practical People (Clarice H M Naylor Davidson) (R), 861
Overpopulation Theory and Statistics (P Sargant Florence) (R), 69
Overton Sibyl G, Dermatitis from handling flower bulbs, 1003, (C) 1192
Oxaluria, the pathology of (A) 1334
Oxford, weekly contributions at, 628
Oxygen administration (A), 1332

P

Page, C Max, on periarterial sympathectomy, 1217
Page, Herbert William (O), 626
Pain, discussion on, 858, in malignant disease alcoholic nerve block for (A), 243, insulation and the physiology of, 111, sternal surgical diagnosis of (A J Walton), 999
Paisley, M O H 's report, 877
Palmer, the late Dr Linton, 1194
Paludisme (Malaria) (E Marchoux) (R), 502
Pamphlets medical instruction by, 125
Panama, Red Cross in, 631
Pancréas, La Sécrétion Interne du, et l'Insuline (A Choay) (R), 606
Pancreatic secretion, the mechanism of (John Mellanby), 215
Pancreatitis, acute (R J McNeill Love), 1262
Pandya, Rai Bahadur D D, and Dunn, C L, Indian Hygiene and Public Health (R), 68
Panel Committee, Kent, and the keeping of records, 362, for County of London, removal of officers, 309
Panel Conference, appeal to courts, right of, 909, complaints against officials of approved societies, 911, dental and ophthalmic benefit, 912, disciplinary procedure, 909, maternity benefit, 911, records keeping of, 911, remuneration 911, sickness benefit, increased claims, 910
Panel doctor's grievance, the (L A), 1275, payment of, 208
Panel practitioners, complaints against (P I), 1248
Pannett, Charles A The Surgery of Gastro Duodenal Ulceration (R), 606
Papworth Tuberculosis Industrial Settlement, annual report, 683, the King at, 103, printing and publication of book by, 1284
Paraffin in plastic surgery of the nose (C), 1037
Paraguay, Red Cross in, 631
Paramore, R H, Reform in midwifery (C), 777

PUBLIC HEALTH SERVICES—Certification forms, safeguarding of, 570—Colonial health reports, 888—Incapacity for work in an industrial crisis, 517—Infectious disease in England and Wales, weekly lists, 41, 73, 148, 209, 255, 307 356, 414 480, 573, 629, 679, 712, 776, 836 878, 938 974, 1032, 1086, 1140, 1187, 1242, 1291 1345—London school-children health of, in 1925, 405—Medical officers of health, reports of, 40, 71 147 251 405, 570, 622, 677, 774, 875, 975, 1029, 1185 1240, 1288, 1343—Mental hospital reports, 73, 253, 518, 572, 652 1045—Notification of puerperal pyrexia, 404—Office International d'Hygiene Publique (A.) 966—Poliomyelitis in Leicester, 678—Port sanitary authorities reports, 517—Record cards as index of efficiency, 1029—Registrar General's Statistical Review (1924–25) 822—Scarlatina, home treatment of mild, 974—School medical service reports 72, 149 254, 405, 679, 877, 977, 1031, 1086, 1291, 1345

Public health social revolutions and the (L A), 1226, a Text book of (E W Hope and C O Stallybrass) 9th edit (R.), 705

Puerperal pyrexia notification of 404 sepsis, Metropolitan Asylums Board and 512 treatment of, by intra-uterine injections of glycerine experimental inquiry into (Arthur Compton), 326, septicæmia (P I), 44, 46, (George Geddes) (R) 958

Pugh, Laura Williams (O) 1348

Pugh, Leslie P, Epidemic encephalitis in dogs 950, (C), 1193

Pulmonary tuberculosis heliotherapy in (J E Wood) 372 (C), 574, 681, 729, 779, *and see* Tuberculosis, pulmonary

Pulse, respiratory variation of the (A), 817

Punch, A Lisle and Wilkinson Russell, Ultra-violet radiation some illustrative cases, 1211

Purgative, a new 213

Purpura hæmorrhagica two cases of splenectomy in (A W Falconer and A R McLachlan), 493

Pyelonephritis, 54

Pyloric stenosis, treatment of congenital hypertrophic (C K J Hamilton) (M T T), 510

Pyorrhœa and the mechanism of tooth eruption (L A.), 134

Q

Quaker Adventure, A (A. Ruth Fry) (R), 291

Quartz Mercury-Vapour Lamp, The (J B Ferguson) (R), 1224

Queen Alexandra Memorial, contributions to, 1139 1258

Queen Alexandra Sanatorium Fund, annual report, 727

Quinidine, diuretic action of 924

Quinine, supply of, from India, 248

Quinsy, treatment of, 973

R

Rabies, on suspicion of (A), 719, (M L), 724

Racial degeneration (Dean W R Inge) 1097; (C), 1190

Radiograms, Visceral, Descriptive Atlas of (A. P Bertwistle and E W H Shenton) (R.), 608

Radiology Lehrbuch der Strahlentherapie (Hans Meyer), Vol I (R), 290 Oral The Technique of (Clarence O Simpson) (R.) 237

Radiotherapy in Germany (A) 1176, in Relation to General Medicine (F Hernaman-Johnson) (R), 237

Radium in angioma, 350, in gynæcology, 769, malignant tumours experimentally obtained by means of (Frans Daels and G Baeten), 666, medical uses of (A) 1231, needle stand, an operative (A. B and S M Smith) (N I.) 605, therapy of cancer of cervix (A) 868 treatment with operation in cancer (Walter C. Stevenson) 1158

Railwaymen's support of hospitals, 412, 521

Rankin, F W, Surgery of the Colon (R), 655

Rasch, C, on effect of light on skin and skin diseases 904

Rassers, J R F, Die Pathogenese des Chronischen Magendarmgeschwürs (R), 755

Rawlinson, E G, Note on the bacterial content of ice cream, 1267

Rawnsley, W F, Edward Thring Maker of Uppingham School (R), 238

Ray, M B, Non specific protein injections in chronic arthritis (C), 149, rheumatic disease in industry 935

Raynaud's disease treatment of (E P Poulton) (M T T) 1282

Read, John Text book of Organic Chemistry, Historical, Structural and Economic (R) 960

Rectal cancer, prognosis in (J P Lockhart-Mummery) 1307

Recto-sigmoidoscopy 303

Rectum Handbook of Diseases of (L J Hirschman) (R) 1066 tumours of the Colon and (J M Lynch and J Felson) (R), 755

Red Cross and disaster relief (A) 1124

Red Cross Pan-American Conference at Washington 39 631

Redding, Magnus X Ray Diagnosis (R) 1323

Redmond Charles Stennett (O) 881

Redmond J Johnstone The danger of an external drug combining with an internal drug (C), 43

Reeves H G, and Hewitt J A Action of glyceric aldehyde and dihydroxyacetone on insulin hypoglycæmia 703

Registrar General's Statistical Review (1924–25), 822, 938

Relaxation 838

Renal calculus case of (A C Sen Gupta), 21 efficiency tests, comparative value of in patients with enlarged prostates (John Marrack and Sybil Robinson) 369, function disturbance of, in experimental nephritis, 1115 Surgery (F McG McLoughnane) (R) 1222 tuberculosis closed (H P Winsbury White), 1310, (L A), 1329

REPORTS AND ANALYTICAL RECORDS—Allisatin 1118—Anna brightening shampoo jelly, 554—Angostura bitters 128—Cheese crustless Cheddar and Cheshire, 1118 1274—Cocoa Van Houten's pure soluble 1274—Creoterpin compound (Wampole) 1118—Cromessol 1118—Digitalis leaf "Tabloid" 1118—Honey prepared (Empire produce) 958—Isacen Roche brand, 128—Lobelin 'Ingelheim" 1274—Neo-Reargon, 1118—Normacol 1118—Ryvita crisp bread (mixed), 292—Vitalia meat juice, 128

Respiratory archives (A), 343

Retina, pathological action of light on, 16

Retinal hæmorrhages significance of, discussion on, 498

"Reward, £2000," 582

Reynolds, the late Dr J H, 1199

Rheumatic disease in childhood (A) 659, 866, 769, Diseases Chronic (F G Thomson and R G Gordon) (R), 551, problem in children 769

Rheumatism and heart disease in children, 1133 chronic Amsterdam Conference on, 957, clinics for (L A), 914, in elementary school-children, inquiry into (Richard H Vercoe), 669, in industry, 930 (M B Ray), 935

Richards Major H E S, appointed to Executive Council Grenada 411

Rickets cœliac and renal 953 with femoral deformities case of, 1165

Riddell, Lord Dame Louisa Aldrich-Blake (R), 1067

Riddoch George, and Thomson, H Campbell Diseases of the Nervous System 4th edit (R), 69

Rideal, Eric Keightley, An Introduction to Surface Chemistry (R) 960

Ringworm, treatment of 566

Risk, Edmund John Erskine (O), 1293

Rivers pollution (L A), 714

Riviere, Clive, Bronchiectasis recent advances in treatment and diagnosis, 1102

Rixon, C H L and Grierson H A The intelligence of criminals 277

Roberts, J E H, Bronchiectasis from the surgical aspect, 1106

Robertson George M. The prevention of insanity, 158

Robinson, J Hargreaves, A large dose of aspirin (C), 256

Robinson, Sybil and Marrack John, Comparative value of renal efficiency tests in patients with enlarged prostates, 369

Roche, Alex E, Vesical calculus with paraffin nucleus, 902

Rock drilling, a new dust trap for (A) 344

Rockefeller Foundation *offer for research* in breeding animals 341

Roentgen Interpretation (George W Holmes and Howard E *Ruggles*), 3rd edit (R) 1067

Rolleston, Sir Humphry on blood transfusion, 280 functions of the school clinic, 687 on high blood pressure from the clinical aspect 1014, 1203 professional careers 737

Root Howard F Excessive insulin dosage in diabetic gangrene, 544

Roques Frederick W Reaction to blood transfusion (C) 682

Rosenheim O, and Webster T A, A critical study of colour tests suggested for vitamin A 806

Ross, Hugh Campbell (O), 1347

Ross Institute and Hospital for Tropical Diseases opening of 202

Ross, J Paterson on periarterial sympathectomy, 1217

Rous chicken tumour, effect of β radiation on (J C Mottram) 1266 X rays upon (S Russ and G. M Scott) 374

Rous sarcoma No 1 the (Ronald D Mackenzie and C F W Illingworth), 745

Roux Prof César retirement of, 1088

Rowbotham Stanley, Intratracheal anæsthesia 783

Rowland Hill and vaccination, 106

Rows R. G, and Bond W E, Epilepsy A Functional Mental Illness (R) 907

Roxburghshire M O H's report 623

Royal College of Physicians of Edinburgh, admission of Fellows 260 annual meeting 1301 appointments 260 1301 quarterly meeting 1041, Victoria Jubilee Cullen prize award of 260

Royal College of Physicians of Edinburgh Royal College of Surgeons of Edinburgh Royal Faculty of Physicians and Surgeons of Glasgow (triple qualification) pass lists 928

Royal College of Physicians of Ireland, amendments in charter (A) 764, annual meeting and election of office-bearers 929

Royal College of Physicians of London, appointments 308, comitia, 308, 980, lectures at 820, licences granted, 308, *pass-lists, 308*

Royal Colleges of Physicians of London and Surgeons of England, diplomas conferred, 308, 359, pass lists, 307, 359, 981, 1040

Royal College of Surgeons of Edinburgh, admission of Fellows, 260, 928, diplomas granted 981, pass-lists 981

Royal College of Surgeons of England annual meeting, 1131, appointments, 207, 308 council meeting, 152 308 1088, 1301, dental licences conferred, 152 308, diplomas conferred, 883 election of members of council, 102, Museum (A), 298, additions to, 49, demonstrations at, 781, pass-lists, 152, 1301, 1350, supplemental charter of, 1038

Royal Commission on Local Government, 227, on Lunacy and Mental Disorder, Report of (L A.), 239, some critical views 302, (A) 966

Royal Faculty of Physicians and Surgeons of Glasgow, admission of Fellows, 833

Royal Institute of Public Health programme of *lectures* 683, 981 1041

Royal Institution, programme of, 883, 1194, 1245

Royal Medical Benevolent Fund, 255, 304 810, 853, 974, 1054, 1143, 1154, Christmas gifts (A.), 1230

Royal Naval Medical Compassionate Fund 884

Royal Sanitary Institute history of the (A.) 663, jubilee congress of, 92, 141, sessional meeting, 783

Royal Society, award of medals 1089

Royal Society of Edinburgh annual meeting 984

Royal Society of Medicine and bibliographies (C), 203

Royal Surgical Aid Society, income of, 1335

Rugby, "penny in the pound" scheme at, 1115

Partnership some facts and a warning (C) 150
Pascal, C , and Davesne Jean, Traitement des Maladies Mentales par les Chocs (R) 705
Pass lists Cambridge University 102, 207, 928 , Dublin University, Trinity College, 153, 981, 1245 , Durham University, 48, 1350 Edinburgh University, 48, 207, 928 Glasgow University, 928 , Liverpool University, 152, 1350 , London School of Hygiene and Tropical Medicine 260 , London University, 260, 1301 , Manchester, Victoria University, 152 783, 1301 , Oxford University 151 , Royal Colleges of Physicians of London and Surgeons of England 307, 359, 980 1010 , Royal College of Surgeons of Edinburgh 207, 928, 981 Royal College of Surgeons of England, 152, 1301 1350 , Sheffield University, 102, 1301 , Society of Apothecaries of London, 48, 308, 525, 980, 1142
Passports for the Italian Riviera, 1201
Pastilles, royalties from for charity 146
Patel, Purushottam T , Cerebro spinal fever in Bombay, 539
Paterson, H J , on gastro enterostomy, 283
Pathological service of the general hospital, the 362 , (C) 624
Pathologie Médicale Précis de (F Bezançon and A Philibert), Vol I , Pt I (R), 500
Patmore the late Dr T D , 1089
Paton, D Noël, Physiology of the Continuity of Life (R) 291
Patten C J The Memory Factor in Biology (R), 1117
Pattison C Lee and Dawkins Veronica, Irradiated milk its effect on the blood, 1314
Paul, Cuthbert Balfour (O) 978
Peacock, P R Action of light on cod liver oil, 328 , Heliotherapy in pulmonary tuberculosis (C) 779
" Penny in the pound " scheme at Rugby, 1115
Pensions for hospital officers and nurses 84, 208 1300
People's League of Health, programme, 731, 929
Peptone therapy, 301
Pepys Atavism Christmas and Mr , 1353
Peritoneal cavity, case of polycystic disease of, 954
Perry, Alan, and Russell Howard The House Surgeon's Vade Mecum, 2nd edit (R), 861
Perthshire Cottage Hospital a new 191
Pharmaceutical Society of Great Britain, 731
Pharmacist, the, his training and vocation (James F Tocher) 836
Phelps, Earle B , Principles of Public Health Engineering (R), 553
Philibert, A , and Bezançon, F , Precis de Pathologie Médicale, Vol I , Pt I (R), 500
Phlyctenules, causation of (A), 967
Photograms, the use of (A), 1228
Phototherapy, *note on dosage in* (Albert Eidinow), 645
Phrenic paralysis, unilateral (A) 78 clinical applications of an experimental study (Grace Briscoe), 56
Phthisis, early afebrile tachycardia in (Anthony Delmege), 899
Physical Signs, Normal, Manual of (W B Blanton) (R), 907
Physiology, Essentials of, Bainbridge and Menzies', ed C Lovatt Evans, 5th edit (R), 185 , of the Continuity of Life (D Noël Paton) (R), 291 , Recent Advances in (C Lovatt Evans), 2nd edit (R), 755
Piaget, Jean The Language and Thought of the Child (R), 501
Pickerill, H P , Malignant tumours following application of an irritant, 854
Pictures, looking at, 734
Pierce, Bedford, Risk of suicide in mental cases (C), 829
Pilgrimage, a modern (A), 398
Pine oil preparations, 888
Pinel, the centenary of, 1182
Pisani the late Lt Col Lionel, 103
Pit-head baths (P I), 45
Pitts, A T , Treatment of fractures of the jaws (M T T), 1336
Pituitary Body, Anatomy, Histology and Development of (G R de Beer) (R), 1117 , disorders, discussion on, 386 , extract, action of, on the uterus (A) 343 , (anterior lobe), the effects of feeding, to children (H Gardiner Hill and J Forest Smith), 219
Plague and the flea, 632 , bubonic, case *of, in Liverpool, 573 , in S Africa,* researches on 93 , pneumonic (A), 965
Plasmochin, 825 , (A), 1279
Platt Harry, on non tuberculous *coxitis in the young,* 605
Plaut, Alfred, Peptic ulcer and cancer of stomach (C), 925
Plumbism, *see* Lead poisoning
Plummer, Henry W , and Mayo Charles H , The Thyroid Gland (R), 1170
Plymouth " *penny in the pound* " scheme 683
Pneumococcal meningitis originating from occult sinusitis (Isabel Falconer King) 515
Pneumonia *acute hæmorrhagic, of infants* (W P H Sheldon) 64 , cases in fever *hospitals* (L A), 133
Pneumonic plague (A), 965
Pneumopyopericardium, *peculiar case of* (Duncan Leys) 1001
Pneumothorax artificial, bilateral selective (A), 212
Poison accidents prevention of, 263
Poisoning cases immediate treatment of, at hospitals (A), 661
Poisons and Pharmacy Acts Committee *to consider, 208, 309*
Poliomyelitis, acute (L A) 1120 and polio encephalitis prevalence of (A), 918 and school infection (A) 961 in Broadstairs 1085 , in Leicester, 678 *in schools* (L A) 1070 , prophylaxis of (C) 1190 , of bulbar type acute fulminant case of (F C Collinson), 597 , treatment of, by irradiation and diathermy, 1181
Politzer's Text-book on Diseases of the Ear, 6th edit (rev M J Ballin) (R), 607
Pollard the late Dr W R , 1028
Polonium and the treatment of syphilis (A), 31
Pontine hæmorrhage, note on two cases of (A Muir Crawford) 173
Poor law Bill (P I), 1195 , institutions medical and surgical treatment in (P I) 1248 reform 232 (P I), 1196 , and public health discussion on 495 , *medicine and* (L A), 503 *relief cost* of (P I), 313, 355 statistics and coal disputes (P I), 1013
Popischill, Dionys, Von den Akut-Infektiösen Respirationsstenosen der Kinder (R), 706
Poradenitis, or subacute lymphogranulomatosis (A T Todd), 700
" Porcupine " poison bottle, 263
Port health officers at Liverpool 833 , medical officers' gathering luncheon to, 766 Sanitary Authorities, M O 's reports, 517 *work, internationalism* in (L A), 506 , treaty, health of a 632
Porter, Elsie, and Langley George J , Studies in blood-sugar, 917
Porteus *maze tests application of,* to 100 Borstal lads (R I Jarrett), 1059
Portsmouth, M O H 's report, 876 , service hospitals at, 881
Post encephalitic respiratory disturbances 953
Post encephalitis unit of the Northern Hospital, 512 (A), 1281
Post graduate congress at Budapest, 349
Post graduate hostel for *London* (A), 81, 192, 525 , clinical reminiscences, 1201 , inauguration of, 261 , meetings *of,* 309, 733, 954, 1217
Post graduate lectures and courses Berlin, 309, 516—Dublin University, Trinity College 251—Fellowship of *Medicine* and *Post Graduate Medical* Association, 49, 102, 153, 207, 261, 309, 360, 411, 525, 730 781, 833, 883, 929, 981, 1041, 1071, 1143, 1193, 1227, 1302 1348—Karlsbad, international at, 102 —Royal Northern Hospital, 1303—St Bartholomew's summer course for practitioners (A) 344—St Mary s *Hospital,* 730, 768—Trinity College, Dublin, 208—Tuberculosis, non pulmonary, 360—Vienna, 519, 628, 833
Post mortem examinations in hospitals, responsibility *for* (M L), 89
Posture and anæsthesia (A), 869 , physiology of (Rudolph *Magnus*) (Cameron Prize lectures), 531, 585 , (L A), 657
Potteries, lead poisoning in the (P I), 313, 1090, 1298
Potters' rot (A), 1024
Potts, W A , Psycho analysis and its development, 178
Pötzl, Otto, and Hermann, Georg, Über die Agraphie und ihre lokaldiagnostischen Beziehungen (R), 1116
Poulton, E P , Treatment of Raynaud's disease (M T T), 1282
Poverty, *nutrition and growth* (Med Res Counc Rep) (L A), 240
Powell, Samuel Arthur (O), 577
Poynton, F J , Cyclic vomiting (C), 1292 , and Wyllie, W G Auricular flutter in infancy, 371
Precipitin test for human blood (A), 965
Pregnancy, hyperpiesis and meningitis (Joan L Lush), 1005 , indications and methods for terminating, before viability of child, discussion on, 378 tuberculosis and (A), 297, 379
Premature labour, induction of, in treatment of contracted pelvis, discussion on, 380
Presentations to medical men Balfour Dr Andrew 248 Crichton Browne, Sir James, 262 , Dixon, *Prof* W E , 1294 Freeman Dr E G F , 1003 Marsh, Dr J C , 1089 Morris, Dr Price, 1191 , Scholefield, Dr G E 952 , Slater, Dr Benjamin Holroyd, 688
Press medical articles and the general, 832, 1078
Preston M O H 's report 571
Pretoria Medical Congress at 929
Preventive medicine, an outline of the practice of (Sir Geo Newman) (L A), 26 , research work on, discussion on, 1111
Price, Frederick W , on anæsthesia in relation to cardiovascular affections, 332 on cardiac indications for terminating pregnancy, 379 , syphilis of the heart and aorta 61
Prince of Wales's interest in hospitals, 226, 831 860 , presidential address to British Association (L A) 293
Princess Mary and hospitals, 361, 411, 628 751 831, 984, 1012
Pringle, G L Kerr, *on rheumatoid* arthritis, 180
Print Collector s Quarterly, The, 788
Prison clothing, the obligation to wear (M L) 247
Pritchard, Dr Evan Christopher, memorial to 833
Professional careers (Sir Humphry Rolleston) 737 standards (C), 214
Prolapse and carcinoma (A) 1124 , prophylactic treatment of (John S Fairbairn) (M T T), 1076
Prostate, enlarged, value of renal efficiency tests in (J Marrack and Sybil Robinson), 369
Prostatectomy (A), 395
Protein injections non specific, *in chronic* arthritis (C) 42, 149, 203
Protozoa, The Biology of the (Gary N Calkins) (R), 290
Protozoology (C M Wenyon) (R), 654
Prussia, *statistics of hospitals in,* 621
Pryde, John Recent Advances in Biochemistry (R), 754
Psoriasis, discussion on, 550 , treatment of (A), 559
Psychiatry, clinical, research in (A), 1179 , progress in (R H Cole), 166 , prolonged narcosis in (A) 662 , teaching of, to medical students (W S Dawson), 722
Psychic traumas (mental accidents)(Albert E Davis) 117
Psycho analysis and its development, 178 by laymen, 513 , London clinic of, 946
Psychological Medicine (Sir Maurice Craig and Thomas *Beaton*), 4th edit (R), 387
Psychology, Experimental, *Text book of (Charles S* Myers and F C Bartlett), 3rd edit (R), 501 , of the *Thinker, The* (I B Saxby) (R), 811
Psychopathic hospital at Boston, 826 , at Edinburgh, 753
Psychoses and psychoneuroses contrasted from a psychological point *of view* (Henry Yellowlees), 481
Public doctors and the (E Graham Little), 742
Public health and medical profession in overseas legislation (A) 139 , appointments B M A and, 231 Department, Organisation and *Administration* of (W A Leonard) (R) 705 , Engineering, Principles of (Earle B *Phelps*) (R), 553 , in Bechuanaland, 364 , in China (L A), 76, and the Boxer indemnity (S H Chuan) 105 , in Germany, 886 , in India (P I), 211 in Northern *Rhodesia,* 530 in Scotland in Northern Rhodesia, 530 in Scotland (P I), 310 , legislation in England the history of, 1352 , milk and the, 309 , *Poor* law reform and, discussion on, 495 , progress of, 155

Social capacity (A.), 1072; (C.), 1292; some observations on application of Porteus maze tests to 100 Borstal lads 1059
Social hygiene, women's organisations in relation to 159
Social Hygiene Congress, Imperial, Proceedings (R.) 656
Social revolutions and the public health (L.A.) 1226

SOCIETIES, MEDICAL

Aberdeen Medico-Chirurgical Society.—Election of office bearers 1194; fractures of mandible, treatment of 1169; hip joint, lesions of the, 1169
Brighton and Sussex Medico-Chirurgical Society.—Meeting, 1089; presidential address 859
Bristol Medico-Chirurgical Society.—Congenital club-foot 1114
Caledonian Medical Society.—Annual meeting, 726
Cambridge University Medical Society.—Visit to America (A.) 664
Cardiff Medical Society.—Gastric and duodenal ulcer, diagnosis and treatment of, 1321
Edinburgh Medico-Chirurgical Society.—Arthritis, rheumatoid, discussion on, 180; backache from the orthopædic standpoint, 1322; intestinal anastomosis, simple method of, 1322; non-specific therapy, investigation into 1065; urinary bladder, treatment of tumours of, 1065
Edinburgh Obstetrical Society.—Accidental hæmorrhage, concealed, 125
Harveian Society.—Addition to George Buckston Browne Memorial Prize Fund 833; Buckston Browne prize, 1246; contracted pelvis, treatment of, discussion on, 1001, 1009, 1096
Hunterian Society.—Medicine and the Press, discussion on 1078; presidential address 858; programme 682
James Mackenzie Institute for Clinical Research, St. Andrews.—Analogies from the eye, 874; arteriosclerosis, 1183; blood pressure, high, from the clinical aspect, 1014, 1202; diabetic coma 1293; renal function, disturbance of, in experimental nephritis 1115
Leeds and West Riding Medico-Chirurgical Society.—Meeting, 1189
Listerian Society.—Mock trial for wrongful certification 937
Liverpool Medical Institution.—Arthritis deformans, 1321; duodenum, obstruction of 1064; intussusception, recurring acute, 1321
Liverpool Psychological Society.—Psychic traumas 117
London Association of the Medical Women's Federation.—Meeting of, 67, 884; professional women, health of 5
Manchester Medical Society.—School boys' physique, stamina and efficiency of 956; spastic paralysis in children, discussion on 1063
Manchester Medico-Chirurgical and Obstetrical Society.—Abdominal tuberculosis in children 1013; Fallopian tubes, insufflation of, 1270
Medical Society of London.—Bronchiectasis, diagnosis and treatment, discussion on 1102, 1106, 1113; programme 783; sternal pain, discussion on 999, 1010
Medical Society for the Study of Venereal Diseases.—Syphilis of the heart and aorta 61
Medical Women's Federation.—Annual general meeting, 52; half-yearly meeting, 1143
Medico-Legal Society.—Carbon monoxide poisoning, medico-legal importance of, discussion on 1218
North and East Riding Medical Benevolent Society.—Annual meeting 946
North of England Obstetrical and Gynæcological Society.—Abdominal pregnancy, case of 905; bladder, rupture of, during labour, 905; exhibition of cases and specimens 1220
Nottingham Medico-Chirurgical Society.—Vaccine treatment in chronic arthritis and rheumatism 1012
Pathological Society of Great Britain and Ireland.—Meeting in Aberdeen 122
Research Defence Society.—Cancer problems, experimental attack on 22
Royal Academy of Medicine in Ireland.—Colon carcinoma of pelvic, involving bladder, 1319; liver, diffuse hæmangioma of 1321; thrombo-angiitis obliterans, 1320
Royal Medico-Psychological Association.—Annual meeting 177; child, educational adaptation of 178; dinner 178; encephalitis, chronic epidemic 1220; encephalitis lethargica 177; madness of Ajax as conceived by Sophocles 177; Maudsley lecture on prevention of insanity, 158; mental disorders, clinical study of 177; psycho-analysis and its development, 178
Royal Society of Medicine.—Anæsthesia, alleviation of acidosis of 179; in goitre 179; in urological surgery 179; anæsthetics, physiology of respiration in relation to 123; annual dinner (A.), 1122; biological standardisation of remedies, discussion on, 1039; Bloomfield, Alice William Gibson Research scholarship awarded to 102; carcinoma of cervix 855; œsophageal, treatment of, discussion on, 1006; cases, exhibition of 953, 1165; clinical section meeting of 808; colitis, discussion on, 1151, 1164; dermatological cases, exhibition of, 903; ear, outer, diseases of 1008; ear disease, blood pressure and, discussion on 1268; femur, fractures of upper end of, in adults, discussion on 1269; fragilitas ossium, deafness with 1009; *gangrene of the extremities, treatment of, discussion on 1215*; gout, treatment of 856; hospital in relation to public health, discussion on 1167; light, effect of, on skin and skin diseases, 904; nerve anastomosis, effects of, on vocal cord and diaphragm movements 1009; nitrous oxide and the ignition points of certain anæsthetic vapours 124; ophthalmology in the last half-century, 809 (Ernest Clarke) 1052; proceedings, the new (A.), 1073; programme 720; psychiatry, progress in 166
Royal Society of Tropical Medicine and Hygiene.—Dinner 1138
Society of Medical Officers of Health.—Annual meeting, 50; dinner, 1142; post-scarlatinal meningitis 1207; presidential address 857; research work in preventive medicine, discussion on 1111
Society of Medical Officers of Schools.—Management of infectious diseases in boarding-schools, discussion on, 1057, 1062
Society of Members of Royal College of Surgeons of England.—Annual meeting 833, 983
Society for the Prevention of Venereal Disease.—Annual general meeting 309
Society of Superintendents of Tuberculosis Institutions.—Meeting, 49
Ulster Medical Society.—Presidential address 1079
West Kent Medico-Chirurgical Society.—Meeting, 1143

Society of Apothecaries of London, diplomas granted 48, 308, 980; pass lists 48, 308, 525, 980, 1142; presentation to Prof. W. E. Dixon, 1294; Rogers prize, award of 152
Somaliland, public health in 1354
Somerset, M.O.H.'s report 1186
Somnifen treatment in the psychoses (W. S. Dawson and M. R. Barkas), 1155
Sophocles and confusional insanity, 177; (C.), 520
Sorrel-Dejerine, Mme. la Dr., Contribution à l'Étude des Paraplégies Pottiques (R.) 68
Sourasky, M., Case of simultaneous abdominal and tubal pregnancy, 650
South Africa, Correspondence from.—Davies, the late Dr. Howell 1083—Massage and medical gymnastics, 1083—Medical Congress at Pretoria 1083—Medical, Dental and Pharmacy Bill, 93—Plague in S. Africa, researches on 93; menace, 1083—Watkins-Pitchford, retirement of Dr. W., 93

South African Institute for Medical Research, annual report 1026
Southport (C.B.), M.O.H.'s report, 40
Southwark, slum clearances in (P.I.), 258
Souttar, H. S., on treatment of œsophageal carcinoma 1006
Spahlinger tests on cattle (P.I.) 1299; treatment (P.I.), 155, 1349
Spastic paralysis, discussion on 602; in children, discussion on 1063
Spectroscopy of X rays and ultra-violet radiation 887
Spence, J. C., on acute nephritis in children, 600
Spermatoxin, contraception by, 1096
Spider bites (A.) 1230
Spina Bifida, Zur Bewertung der Chirurgischen Behandlung der Spina Bifida (Karl M. Stockmeyer) (R.) 1223
Spinks, A. F. G., The ex-baby (C.), 305
Spiritual healing (C.), 1242
Spiritualism (A.) 30
Spleen in hæmorrhagic diathesis, 366
Splenectomy in angiostaxis, 368; in purpura hæmorrhagica, two cases of (A. W. Falconer and A. R. McLachlan), 493
Spoon, an improved, the "Cachon," 364
Sprawson, Evelyn, Treatment of infection at apices of teeth (M.T.T.), 300
Sprigge, Sir Squire, on medical literature and journalism 1352
Sprigge, N. I., The definition of drunkenness (C.) 305
Sprue and Addisonian anæmia, study of (H. B. Newham, R. M. Morris, and P. H. Manson-Bahr) 269; (C.) 408
Stafford, M.O.H.'s report 77
Staffordshire, M.O.H.'s report, 1344
Stain, the late Dr. W. C. W., 1194
Stallybrass, C. O., Epidemic encephalitis in dogs (C.) 1036; and Hope, E. W., A Text-book of Public Health, 9th edit. (R.) 705
Standardisation of remedies, biological, discussion on, 1039
Stanton, Dr. A. T., award of Bisset-Hawkins medal to 869
Status lymphaticus (C.), 357
Stebbing, George F., A simplified colostomy cup (N.I.) 1274
Stedman's Practical Medical Dictionary, 8th edit. (R.) 414
Steen, Robert Hunter (O.), 204
Sterilisation of *defectives, 1234*
Sternal pain, discussion on, 999, 1010; surgical diagnosis of (A. J. Walton), 999
Stevens, T. G., The use of radium in gynæcology 769
Stevenson, Walter C., Rationale and technique of combining operation with radium treatment in cancer, 1158
Steward, F. J., on surgery of malignant disease of upper air and food passages 546; on treatment of œsophageal carcinoma 1006
Stewart, Clara, and Young, Matthew, Cancer of the uterus, a statistical study, 1258
Stewart, F. H., Mendelian variation in bacteria (C.) 880
Stillbirth and neonatal death (A.), 1331
Stirling, county of, S.M.O.'s report, 149
Stockman, R., on rheumatoid arthritis, 180
Stockmeyer, Karl M., Zur Bewertung der chirurgischen Behandlung der Spina Bifida (R.) 1223
Stockport, M.O.H.'s report, 71; S.M.O.'s report 1291
Stoker, Henry (O.) 1293
Stomach, acute dilatation of, with aortic succussion (N. W. Snell and L. H. Savin), 279; peptic ulcer and cancer of (C.) 925
Stone, Kenneth, Technique of blood transfusion (C.), 574
Stopes, Marie C., The Human Body and its Functions (R.), 70; Sex and the Young (R.) 70
Stopford, J. S. B., on spastic paralysis in children, 1064

Ruggles Howard E, and Holmes George W, Roentgen Interpretation, 3rd edit (R), 1067
Russ, S, and Scott, G M, Effect of X rays on Rous chicken tumour, 374
Russell, John (O), 410
Russell, W T Fog and low temperature, relative influence of, on mortality from respiratory disease, 1128
Rutherford W J, Alteration of vision due to basal fracture of skull (C), 204
Ryan, Maj -Gen Sir Charles S, the late, 927
Ryle, John A on colitis, 1165, medical treatment of chronic diarrhœa (M T T) 563, 615
Ryvita crisp bread (mixed) (R & A R) 292

S

Sachs B, and Hausman, Louis, From Birth through Adolescence (R), 960
Saidman Dr, Les Rayons Ultra violets en Thérapeutique (R) 68
St Bartholomew's Hospital Reports Vol LIX (R) 812, rebuilding of in 18th century, 214, war memorial archway, 120
St Helens, M O H's report, 1241, S M O's report, 679
St John of Jerusalem, Venerable Order of Hospital of Pilgrimage of 1926 (A), 398, promotions and appointments, 50
St Luke's Day Service, 761
Salford, M O H's report, 1240
Salivary calculus, submaxillary, 619, (A), 716
Salmond, M, Post operative tetanus (C), 777
Salmonella group, the (A), 397
Sanarelli, G, Les Enteropathies Microbiennes (R) 861
Sanatorium treatment of tuberculosis (A) 560, (C), 680, Swiss, value of, (A Sandison), 580
Sanatorium Wehrawald, bought by State Insurance Institute, 983
Sandison, Alex, Note on the value of Swiss sanatorium treatment, 580
Saner, F D, Transcondylar fractures of humerus in children 901
Sanitary Conference at Paris, International, 770
Sanitary Conferences, International (C), 927
Sanocrysin treatment in Belfast 632, in pulmonary tuberculosis, 1095, in Spain (A), 82, *and see* Gold treatment
Sarcoma, malignant myeloid (A), 818
Sargent, Percy, on cerebral tumours, 282
Sausage, what is a? (A), 720
Save the Children Fund, 984
Savill, Agnes, Treatment of menorrhagia (C), 520
Savin, L H, and Snell, N W, Acute dilatation of stomach with aortic succussion, 279
Savy, Felix, Sanatorium treatment of tuberculosis (C), 779, Tuberculosis in the Shetland Islands (C), 257
Saxby, I B The Psychology of the Thinker (R) 811
Scales, F Shillington, Practical Microscopy, 3rd edit (R), 127
Scarlatina, home treatment of mild, 975
Scarlatinal infection of books (L A), 1331
Scarlet fever and its complications, relationship of streptococci to, discussion on, 333, and streptococci (A), 917, epidemiology and prophylaxis, 617, in Lancashire 984, in Scotland, 924 post-scarlatinal meningitis (J Graham Forbes), 1207, prophylaxis and treatment of, 675, saponified toxin in (A), 1231, surgical emphysema in (F R Curtis and I C Thomson), 854, virus of, 1027
Scarlet fever *antitoxin in a case of endo* and myo carditis (E S Toogood), 545
Scatliff, Arthur William (O), 979
Scharlieb, Dame Mary, complimentary dinner to, 208
Schmiegelow, Professor, jubilee of (A), 917, retirement of (A), 764
School boy diet (A), 295
School-boys, physique, stamina, and efficiency of, 957
School certificate, doctor refuses, 1288, clinic, functions of the (Sir Humphry Rolleston), 687, clinics (L A), 714, elementary, hygiene in the precept and practice (L A) 1173 Health, The Fundamentals of (James Kerr) (R) 1170, medical officers' reports, 72 149, 254, 405, 670, 877 1086, 1291, 1345
Schools, hygiene for 632
Schweizerische Medizinische Wochenschrift, co editor appointed, 1246
Science, Popular Essays in (Julian Huxley) (R), 1424
Scotland and venereal disease (C), 778, 926

SCOTLAND, CORRESPONDENCE FROM—Aberdeen hospital development, 873 —*Back strain as a cause of incapacity* 1238—Civil servants an experiment by, 923—Edinburgh Royal Infirmary new radiological department, 823—Encephalitis lethargica accommodation for, 923—Eye, analogies from the 874—Falkirk new hospital for, 1238 —Health visitors, courses for 726 —Heredity, a course on 924—Housing, 874—Ices 874—Inglis Dr Elsie, *memorial to* 1238—Ker Dr Claude, memorial tablet to 823—Medical *symptoms and surgical operations* 1341—Midwifery position the 874 —Nursing in Scottish Health Administration 726—Poor relief and the coal strike, 823, to miners' dependents, 1341—Rickets in Scotland, 823—Scarlet fever 924—Veterinary services, 924—Women citizens and health work, 726

Scotland housing in 874, influenza in (A) 562 mental disorder in (A) 868, public health in (P I), 310, State insurance in, 97
Scott, G M, and Russ S, Effect of X rays upon Rous chicken tumour, 374
Scott, S Gilbert, Secondary jejunal ulcers and their radiological diagnosis, 222
Scottish Board of Health, pamphlet on venereal diseases 653
Seamen, merchant international aid for, 1333
Seminal vesiculitis *see* Vesiculitis
Semon, Sir Felix, Autobiography of (R), 959
Semon, Henry C, Iodide eruption an unusual case, 803
Senile insanity, treatment of (G W B James) (M T T), 820, 870

SERVICES THE—Beadnell Surg Rear-Admiral, retirement of, 522—B M A and the Services 232—Deaths in the Services, 356, 927, 1032—Director General of Army Medical Service appointment of 48—Indian Medical Service, 48, 132, 201 311, 356, 522, 578 615 720, 829, 878, 927, 967, 1093 1140, 1187, 1242 1294, 1335, and free passages (P I), 258, special recruitment (1926), 131, study facilities for Indian members of (P I), 1043—King, hon physician to the, 409, 1093 664, hon surgeons to the, 409, 1093 —North Persian Forces Memorial Medal, award of, 74—Royal Air Force Medical Service 48, 74, 244, 314, 356, 409, 522, 578, 615, 664 720 766, 829, 878 927, 967, 1032, 1093, 1140, 1187, 1242, 1294, 1335, fatalities in (P I) 355, 1349, new orders, pay and conditions, 47, 74—Royal Army Dental Corps, 1140, new orders 47—Royal Army Medical Corps, 48, 74, 132, 201, 244, 314, 356, 409 522, 578 615, 664, 720, 766, 829, 878, 927, 967, 1032, 1093, 1140, 1187, 1242 1294, 1335, commissions, 1140, increases of pay (P I), 101, new orders, 47, obligations of officers, 244—Royal Army Veterinary Corps new orders, 48—Royal Naval Medical Service, 48, 74, 132, 244 314, 356, 409 522 578, 615, 664, 720 766 829, 878, 927, 1093, 1187, 1242, 1294, 1335, new orders, 46—West African Medical Staff, 132, 201

Sewage treatment, activated sludge process of (H T Calvert), 1149
Sex and the Young (Marie C Stopes) (R), 70, in Man and Animals (John R Baker) (R) 1016, instruction, 786
Seychelles, public health in, 1096
Seymour, the late Dr E W 259
Seymour plan, the (A), 1333
Shampoo jelly, Anana brightening (R & A R), 554
Shapland, C D, Blood sugar in the normal and diabetic, 589
Shaw, Ernest H, Vesical calculus with nucleus of paraffin wax, 225
Shaw, Fletcher, on carcinoma of cervix, 855, on uterine hæmorrhage without gross physical signs, 383
Shaw Mackenzie, J A, Immunity and malignant tumours (C) 256
Sheffield, encephalitis outbreak of 1924 in (A), 1123, maternity and child welfare centre at, 925, M O H's report, 1288
Shehadeh, H, Subdural hæmorrhage, cases of (C) 256
Sheldon, W P H, Acute hæmorrhagic pneumonia of infants, 64
Shell fish, poisons in (A), 1229
Shenton, E W H, and Bertwistle, A P, Descriptive Atlas of Visceral Radiograms (R) 608
Sherard Robert Harborough, Guy de Maupassant (R), 502
Sherburn, the late Sir John, 132
Shetland Islands, communications with the (P I), 211, tuberculosis in the (C), 97, 257
Shipway, Francis E, Anæsthetics in urology (C) 926
Shrewsbury S M O's report, 1291
Shrubsall, F C, on after effects of encephalitis lethargica 1284
Sigmoidoscopy 303
Silence, an alleged conspiracy of (A), 1334
Silkworm disease (A), 1178
Silverston, J D, Observations on tryparsamide therapy in neuro syphilis, 693
Simey, A I, Management of infectious diseases in boarding schools, 1057
Simpson, Alan S A case of amœbic dysentery with liver abscess contracted in England, 495
Simpson, Clarence O, The Technique of Oral Radiology (R), 237
Simpson, G C E, on obstruction of the duodenum, 1064
Sinclair, J D Speid, Anæsthetics in urology (C), 881
Singapore, mosquito pest at (P I), 1247
Skin Diseases of the (Richard L Sutton), 6th edit (R), 388, multiple cancers of unknown origin (W J O'Donovan), 278
Skull, basal fracture of, alteration of vision due to (C), 43, 204, tumour of, with Jacksonian epilepsy, case of, 808
Skulls, the two Gibraltar (A), 559
Sleeping sickness in Tanganyika territory (A), 29, treatment of, 1342
Slesinger, E G, Elongation of pelvic colon and its surgical treatment, 274, on periarterial sympathectomy in gangrene, 1216
Slit lamp, clinical use of the (T Harrison Butler) (Montgomery lecture), 315, (L A) 340
Slum clearances in Southwark (P I), 258
Small pox and Poor law institutions, 208, in Durban, 1246, in London, 781, 834, 982, (P I), 1300, in the North (L A), 1175, in relation to climatic changes (A) 190, in South Shields, 884, in Willesden, fatal case of, 781, intra cutaneous vaccination for 874, preparedness against (C), 830
Smellie, J M, on acute nephritis in children, 600
Smith, Arthur B, and Sydney, M, An operative radium needle stand (N I), 605
Smith, Frances E, Medicine in Mexico, 413
Smith, G Elliot, The significance of anatomy (Thomas Vicary lecture), 943
Smith J Forest, and Gardiner Hill H, The effects of feeding anterior lobe pituitary extract to children, 219
Smith, Lewis A, on blood pressure and ear disease 1268
Smith, R Travers Heart disease and epilepsy (C), 203
Smith, Sydney, Two cases of suicidal cut-throat, 1163
Smoke Abatement Bill (P I) 1195, 1248
Smoking and fire worship (C), 264
Smollett, Tobias, letters of, to the Hunters, 1068
Snell, N W, and Savin, L H, Case of acute dilatation of stomach with aortic succussion, 279

Typhoid hexamine in 824 in Hanover epidemic of, 824, skin reaction for, 263
Typhus fever in Glasgow 467

U

Ultra violet dosage measurement of 838 Light Therapy Practical (T Clyde McKenzie) (R) 861 radiation (C), 1346 in cœliac disease (R G Michelmore) 1264 some illustrative cases (A Lisle Punch and Russell Wilkinson) 1211 rays Les Rayons Ultra violets en Thérapeutique (Dr Saidman) (R) 68 therapy in a general hospital (A) 1074

UNITED STATES OF AMERICA, CORRESPONDENCE FROM —Alcohol medicinal 1239—Boston Psychopathic Hospital 826—Cancer and heredity 1342—Cancer Conference, the 825—Criminals, study of 1342—Hospitals of the United States, 1239—Medical examination of students at Columbia 1239 Practice Act new 145 publicity 145—Mexican Blue Cross the 39—New York Academy of Medicine 1239—Nursing private cost of 349—Rabies in New York City 1239—Red Cross Conference Pan American the second 39 Society American annual report 1342—Thyroid tumours in bone 1259 —Tularæmia, spread of, 349

U S.A, Dispensatory of the 21st edit (R) 1615 hospitals in N America 1250, incidence of cancer in (A) 1026 maternal mortality and morbidity in America 579 (L.A) 655 Red Cross activities in the Americas, 39 631 thyroid surgery in America (W Sampson Handley) 1253
University of Aberdeen degrees conferred 153 resignation of Prof Matthew Hay 207—University of Birmingham appointments, 1089 degrees conferred, 102 1356—University of Cambridge, degrees conferred, 102, 307 980, 1088, 1350, Michael Foster studentship endowment *increased*, *411* pass lists, 102, 207, 928—University of Dublin, Biological Association, address on cancer at 1079 pass lists in School of Physic, 153, 980, 1145 post graduate course, 251—University of Durham, degrees conferred 152, pass lists, 48 1350 Sir Thomas Oliver elected President of College of Medicine, 984—University of Edinburgh, Chair of Animal Breeding at, 883 degrees conferred, 260, 928 1350 the D T M. & H and D P H at (A) 614 pass lists 48 207—University of Glasgow degrees conferred 102, 928, 1193—University of Leeds appointments, 1142, degrees conferred 102, resignation of Sir Berkeley Moynihan, 1328—University of Liverpool appointment of Dr Patton to Chair of Entomology, 1246 needs of, 931 pass lists, 152, 1350—University of London, appointments 48, 151 260 731 1245, awards, 260 1041 1193 Bloomsbury site 360, external degrees at (P I), 154 fellowships and prizes, 151 *lectures* at, 731 982 1041 meeting of Senate, 151, 260 1142 nursing, diploma in, 260 (A) 299 Parliamentary grant to (P I), 1043, pass lists, 260, 1193 research grant 360 resignations 260 Stocks, Dr Percy appointed Reader in Medical Statistics, 928 studentships, 260 University College the birth of 686, University of London Bill in the House of Lords (P I) 154 260 313—University of Manchester Victoria appointments 1193 awards of scholarships, 208, awards of studentships 411 Dr A D Macdonald appointed lecturer 884, pass lists, 152, 783—University of Oxford, degrees conferred, 260, 928 1193, 1350 honorary degrees 48 pass lists 151 Radcliffe prize 928 Radcliffe fellowship, 1193 scholarships, 207 260—University of Sheffield, appointment in pathology, 153 cancer research in, 361 pass lists 102—University of Sydney, appointments, 1304
Uppingham School closing of (C), 1188
Ureteral and trigonal stricture (A) 298
Urinary bladder Die Innervation der Harnblase Physiologie und Klinik (Helmut Denning) (R) 1171 rupture of, during labour 90 treatment of tumours of (Henry Wade) 1063
Urine distension overflow of treatment of (W F M Mitchell) (M T T) 1025 suppression of for three days (A Leslie Lankester), 598
Urology anæsthetics in 179 (C) 881 926 Congress of in Vienna 1082 German Association of 562 Practice of (Hugh H Young and David M Davis) (R) 359
Uterine Hæmorrhage (Samuel J Cameron and John Hewitt) (R) 501 abnormal nomenclature of (C) 519 575 without gross physical signs causes and treatment of discussion on 382
Uterus cancer of a statistical study (Clara Stewart and Matthew Young) 1258

V

Vacancies weekly lists of 51, 104 157 212 262, 314, 362 412 526, 579 629 684 733 784 835 885 934 985 1044 1094 1148, 1200 1249 1300, 1351
Vaccination encephalomyelitis following (L.A) 44 (A) 764 (P I) 1147 inquiry a (A) 1231 Rowland Hill and 106
Vaccines live and dead (A) 1026
Vaccinia virus new *device* for purifying (A) 79
Vagina case of atresia of (Arthur A Gemmell) 1661
Van Leeuwen W Storm Allergic Diseases (R) 654
Varicose ulcers vaccinotherapy for 350 veins treatment of by injection (Sir Sidney Alexander) 176 (A) 661 (C), 926
Veale F de Coverly Certification of injury under Workmen's Compensation Act (C), 358
Venereal disease in the Army (P I), 46 in the civil population (P I), *101* in the French Army, 788, in the Navy (P I), 100, 101 in Rumania, 1082 1182, pamphlet on, 653 Scotland and (C), 778, 926 treatment centres for, 160
Venereal infection responsibility for 675
Ventilation in factories (A) 31
Ventricular puncture in *apoplexy* (*Hildred* Carlill) 1212
Vercoe, Richard H, Inquiry into rheumatism in elementary school-children 666
Vertebrates, Comparative Anatomy of (J S Kingsley), 3rd edit (P), 1118
Vesical calculus with paraffin nucleus (Ernest H Shaw) 225 (A E Roche) 962
Vesiculæ seminales, lavage of 304
Vesiculitis seminal (A) 818 some points in the surgical management of (A Reith Fraser and L B Goldschmidt) 749
Victor Horsley memorial lecture on the insulation of the nervous system (Wilfred Trotter), 167
Victoria Bush Nursing Association report, 1089
Vienna antitoxin controversy (A.), 1074

VIENNA CORRESPONDENCE FROM —Accident hospital of Vienna 773—Blood comparison in forensic medicine 773 —Brain weight of 403—Cardiac hormone, the 975—Dermatologists Vienna 403—Difficulties of Vienna medical organisation 773—Disinfectant a new surgical 514—Ehrmann, Prof death of, 1083—Fattening cure a new 973—Insurance clubs sickness 773—Medical students fewer, 974 studies uncompleted 403—Mosquitoes in Vienna 513—Psycho analysis by laymen 513—Quinsy treatment of 973—Trichinosis in Austria 513—Tuberculosis municipal sanatorium for 774—Urology, a Congress of 1082

Vienna post graduate courses in 519, 628, 833
Varol Research Scholarship award of 261
Vesicoptosis in women operation for creating an abdominal 'shelf' for certain cases of (Victor Bonney), 487
Vital statistics civil 938 of 1924-25 Registrar General's statistical review [illegible]
Vitalin Meat Juice (Liq hæmoglobin dulc) (L & A P) [illegible]
Vitamin A critical study of colour tests suggested for (O Rosenheim and T A Webster) 816
Vitamins farming and 1251, light and (A) 345
Vivisection in London physiological schools (P I) 1248 1299 1301
Vlasto Michael The Nursing of Diseases of the Nose, Ear, and Throat (R) 862
Vomiting, cyclic (A) 1178, (C) 1241, 1292
Voronoff's operation results in Vienna 404
Vulsellum forceps improved (H C Donald) (N.I), [illegible]

W

Wade Henry, on treatment of tumours of urinary bladder 1063
Waiting room the panel doctor's 160
Wakeley Cecil P G Case of perforated gastric ulcer with appendicitis 752 treatment of ectopic and undescended testicle (M T T) 245
Wales North overcrowding at Mental Hospital Denbigh 261
Wallis R L Mackenzie, on encephalitis lethargica 177
Walsall (C B) M O H's report 252
Walters F R, sanatorium treatment of tuberculosis (C) 681
Walton A J surgical diagnosis of sternal pain 999 surgical treatment of gastric and duodenal ulcers (C), 95
Wanklyn, W McC, Preparedness against small pox (C) 836
War, the aftermath of (A), 561, medical supplies in (A), 1230
Ward E, Research and mediocrity (C), 1245
Ward, Gordon, Sprue and Addisonian anæmia (C), 465
Ward, J F, on spastic paralysis in children 1663
Warner Francis (O) 1635
Warrington, S M.O's report 1086
Warwickshire, M O H's report, 622
Water-colours contemporary English, 838
Watford (B) M O H's report 40
Watson J K Handbook for Nurses, 7th edit (R) 862
Webbe W H The teaching of swimming (C) 160
Weber F Parkes Halogen eruptions with lesions on the tongue (C) 1137
Webster T A and *Rosenheim O* Critical study of colour tests suggested for vitamin A 816
Weights and measures (C) 1096 1252
Weihaiwei public health in 652
Weinbren M, Ultra-violet radiation (C) 1346 and Graham-Hodgson H K, Tuberculosis verrucosa treated by ultra-violet radiation and associated with unsuspected trichinosis, 174
Welch, T B *Castor oil* v saline aperient (C) 681
Wellcome Historical Medical Museum, reopening of 882
Wellcome Medical Research Bureau reopening of, 1285
Wembley Hospital laying of foundation-stone 984
Wenyon C M Protozoology (R) 654
Wesleyan and General Assurance Society, educational pamphlets issued by, 125
Wheatley James Thyroid enlargement and *the* lack of iodine theory (C) 96
Wheeler Sir William, Thrombo angiitis obliterans 1320
Whitaker the complete, 1304
Whitchurch Yesterday and To-day (Sir Rickman J Godlee) (R) 127
White Charles Powell Pathological service of the general hospital (C) 520
White Clifford on management *of* contracted pelvis, 1009

Strandberg O Heliotherapy and artificial sunlight in tuberculosis 1134

Strangeways, T S P, on tissue culture 335

Streptococcal toxin (L A) 658

Streptococci of erysipelas, 334

Streptococci relationship of to scarlet fever and its complications discussion on 333

Students guide a 887 medical and dental, numbers of (1900–1925) 480 medical, selection of (A) 1073 Number 415–480 supplementary information 614 707, 756

Submaxillary gland case of six facetted calculi in (W I Daggett) 649 salivary calculus (A) 716

Sugar and disease 897 basin the S O S ' 1202

Suicide risk of in mental cases (C) 829 a study of 1182

Summer time, 720

Sun bathing in Upper Egypt (G V Worthington) 985

Sun blindness 18

Sundell C E, Non specific protein injections in chronic arthritis (C) 42, 203

Sunderland (C B) M O H 's report 71

Sunlight clinics new 1113

Sunshine measurements (C) 1244

Supersession amicable (A) 1022

Surgeon What the surgeon sees (L A) 813

Surgery Manual of (Alexis Thomson and Alexander Miles) Vol II , 7th edit (R) 186 Vol III 7th edit (R) 1117 Orthopædic The Evolution of (R B Osgood) (R) 336

Sussex East M O H 's report 775

Sussex Provident Scheme, finances of 325

Sussex provident schemes 838

Sutton Richard L Diseases of the Skin 6th edit (R) 388

Swann Mary A St Clair (O) 1035

Swansea hospitals, new 776

Swimming the teaching of (C) 160 (P I) 210

Swindon hospital accommodation at 153, M O H 's report 118

Swinton and Pendlebury (U D) M O H 's report, 72

Swiss sanatorium treatment value of (Alex Sandison) 580

Symbiosis (A) 562

Syme W S on diathermy in malignant disease of upper air and food passages 546

Symonds Sir Charters on fractures of upper end of femur 1270

Symonds C P Narcolepsy as a symptom of encephalitis lethargica 1214

Syndrome an interesting (C) 1191

Synthaline 1288

Syphilis and gonorrhœa in the Navy (P I), 101 decline of in Europe (A) 1125 of the heart and aorta (J W Price) 61 in general practice (A) 1021 Meinicke micro reaction for 875 mercury in late (A) 1075, polonium and the treatment of (A) 31 yaws and in tropical Africa mass treatment with bismuth arsenic compounds (C) 43

Syphilomata, subcutaneous fibroid (C Worster Drought), 637

T

Tables atypical (Ivor J Davies) 1316 Tabloids ' a correction 1085

Tachycardia, paroxysmal syncope in (A), 244

Tanganyika territory sleeping sickness in (A), 29

Tankard Arnold R The treatment of flour (C), 1243

Tapeworm treatment of, 1354

Tavistock clinic matinée, 833

Taylor Daniel M (O) 151

Taylor, Gordon on cancer of the tongue, 284

Teaching and learning (A), 138

Teapot, the Pura 160

Teeth filled, as source of streptococcal blood infection, discussion on 954 , treatment of infection at the apices of the (Evelyn Sprawson) (M T T) 300

Teissier Prof reports of his death, 201 (L A), 294

Terrien, Felix Sémiologie Oculaire Le Crystallin et son Appareil Suspenseur (R), 607

Testicle ectopic and undescended treatment of (Cecil P G Wakeley) (M T T), 245

Tetanus, a death from (M L) 516 immunisation of new born against, 511 microscopical appearances of spinal cord in (S H Nelson), 852 post operative case of (S C Dyke), 596 (C), 777

Tetany infantile parathyroid extract in (A) 80

Tetley the late Dr F H 834

Theobald G W A plea for drastic reforms in the teaching and practice of midwifery 633

Therapeutic Substances Act (1925) 480

Thomas Vicary lecture on the significance of anatomy (G Elliot Smith), 913

Thomson, Ernest The ex baby (C) 305

Thomson F G and Gordon R G Chronic Rheumatic Diseases (R) 551

Thomson H Campbell, and Riddoch George Diseases of the Nervous System 4th edit (R) 69

Thomson I C and Curtis I R Case of surgical emphysema in scarlet fever 854

Thomson John (O) 99

Thomson J Arthur Heredity 5th edit (R), 606

Thomson M Sydney, and Colwell, Hector Some effects of primary and secondary X rays on the skin of the frog tadpole 59

Thomson Walker Sir John The treatment of urinary calculus (M T T) 193

Thomson and Miles's Manual of Surgery, Vol II 7th edit (R) 186 , Vol III , 7th edit (R) 1117

Thoracoplasty in phthisis results of (J Gravesen) 702

Thorax, new growths of differential diagnosis from tuberculosis (J M Johnston) 537

Thorp E and Cookson H A Outbreak of infantile diarrhœa associated with a parasitic fungus 330

Thrapston (R D), M O H 's report 41

Thring, Edward Maker of Uppingham School (W F Rawnsley) (R) 238

Thrombo angiitis obliterans 1320

Thyroid enlargement and the lack of iodine ' theory (C) 96 gland The (Chas H Mayo and Henry W Plummer) (R) 1170 the active substance of the (A) 192 , surgery in America (W Sampson Handley), 1253 tumours in bone, 1239

Thyroxine recent progress in the chemistry of 200

Tidy H Letheby, Hunterian lecture on the hæmorrhagic diathesis angiostaxis, 365

Tingle Clara and Naish A E Case of lymphatic leukæmia of unusual type, 1156

Tiredness and fatigue (A) 615

Tissue culture 335

Tobacco amblyopia (A), 818

Tocher James F , The pharmacist his training and vocation 836

Todd A T Poradenitis or subacute lymphogranulomatosis 700

Todd, Henry Ross (O) 1347

Todesco, J Case of measles showing unusual nervous symptoms 21

Tomb J Walker, Treatment of cholera (M T T) 721

Tongan islands public health in the, 582

Tongue carcinoma of, discussion on 284

Tonking, John Herbert (O), 628

Tonsils and adenoids 130 hæmorrhage associated with peritonsillar abscess (C), 119 879

Toogood, F S Scarlet fever antitoxin in a case of endo and myo carditis, 545

Tooth brush in defence of the (A), 314

Torquay, S M O 's report 977

Tottenham M O H 's report, 1030

Toxicology (A H Brundage), 15th edit (R), 1116

Trachoma treatment of (A F MacCallan) (M T T) 919

Tracheotomy tube, new (A Cubley) (N I), 656 734

TREATMENT MODERN TECHNIQUE IN — Ankylostomiasis (Clayton Lane), 346— Calculus, urinary (Sir John Thomson Walker) 193—Cataract (Frank Juler) 83—Chilblain (H W Barber) 1180, 1232—Cholera (J Walker Tomb) 721 —Diarrhœa, chronic medical treat ment of (John A Ryle), 563 615— Glottis, spasm of the, in adults and children (Harold Barwell), 32—Hallux valgus and hallux rigidus (R C Elmslie), 665—Hernia, strangulated (W H Ogilvie) 1126—Hiccup, persistent (C F T East), 140—Intussusception in infants acute (Gertrude Herzfeld), 767—Iritis, acute (Ida C Mann), 399—Jaws, fractures of (A T Pitts) 1336—Nasal accessory sinuses, infection of (G Seccombe Hett), 968— Prolapse prophylactic treatment of (John S Fairbairn), 1076—Pyloric stenosis, congenital hypertrophic (C K J Hamilton) 510—Raynaud's disease (F P Poulton), 1282—Senile insanity (G W B James) 820 870— Teeth, treatment of infection at the apices of (Evelyn Sprawson), 300— Testicle, ectopic and undescended (Cecil P G Wakeley) 245—Trachoma (A F MacCallan) 919—Urine distension overflow of (W E M Mitchell), 1025

Tredgold, A F on after effects of encephalitis lethargica 1283

Trials Notable British Trial of Katharine Nairn (ed W Roughead) (R) 389

Trichinosis associated with tuberculosis verrucosa 174 in Austria 513

Trigeminal nerve in ophthalmology (A), 136

Tropical Equipment Hints on Equipment and Health for Intending Residents in the Tropics (J Balfour Kirk) (R) 656 medicine and the London School (A), 1280

Tropics *hygiene in the*, 758

Trotter, Wilfred The insulation of the nervous system (Victor Horsley memorial lecture) 107

Tryparsamide therapy in neuro syphilis (T D Silverston), 693 (A) 716, treatment of general paralysis by (M Brown and A R Martin) 699

Tubal and abdominal pregnancy case of simultaneous (M Sourasky), 650

Tubercle bacilli in tuberculous pus (C), 42

Tubercle free milk (A), 398

Tuberculin dispensaries (C), 681

Tuberculosis and employment (L A), 25 and pregnancy (A), 297 , annual conference of National Association for Prevention of 89 cancer and, relation between (A) 816 conference 930, 1134 Council Joint 1350 , dispensaries (P I) 211 dispensary place and function of the 90 (P I), 211 gold treatment of (Medical Research Council's second report), 181 in India, 1080 in the Navy (P I), 1196 in the Shetland Islands (C), 97 257 malaria and, 675 milk and (A) 1076 , new remedy for, 825 , non pulmonary, provision for the care of 89 , Officers Association Irish, annual meeting in Dublin 250 , The Principles of Immunity in (W Camac Wilkinson) (R) 336 pulmonary, experimental studies as to origin of 91, heliotherapy in (J F Wood), 372 , (C) 574, 681, 729 779, rate of sedimentation of red blood corpuscles in (R Goodman and R C Wingfield) 805 , renal, closed (H P Winsbury White), 1310 (L A) 1329 sanocrysin in (A), 82 632, 1095 , sanatorium treatment of (A), 560 , (C), 681 779 specific stimulation therapy and protective inoculation measures in 1135 , sunlight treatment of, 91 1131 surgical, balneotherapy for 566 treatment of, at the Institution of Santa Maria Cannes (W H Battle) 213 vaccine treatment of, with living virus and protective inoculations 1136 verrucosa treated by ultra violet radiation and associated with unsuspected trichinosis (M Weinbren and H K Graham Hodgson) 174 , Why it Exists How it may be and has been Cured and Prevented (R Goulburn Lovell) (R) 1271

Tuberculous fertility of the (C) 409 insured persons in Ireland treatment of 573

Tuck, Dr G L (Dr Wu Lien Teh), Japanese degree conferred on 244

Tularæmia spread of, in America, 349

Tumour, a wandering (C), 686

Tunbridge Wells, S M O 's report, 977

Turner, L B , The value of popular lectures (C) 255

Turner G Grey on the use of wedges for elevating the loin in gall stone operations, 224

Turner, Philip on treatment of gangrene of the extremities 1216

Twickenham Dr J R Leeson elected mayor 153

Twins, identical (A), 1335

Typesetting light and, 1251

THE LANCET

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

Telegrams—LANCET, WESTRAND LONDON *Telephones*—GERRARD 4314 & 4315 *Offices*—423, Strand, London, W C 2

No I. OF VOL. II, 1926
No. 5366 Vol. CCXI.

LONDON, SATURDAY, JULY 3, 1926.

Founded 1823 Registered as a Newspaper Published Weekly

Pp. 120—Price 1s.
Annual Subscription
Inland £2 2s Abroad £2 10s

THE LANCET EXTRA NUMBERS

No 2. EARLY MENTAL DISEASE

For important announcement see pp 7 8, 9, & 10

OXFORD MEDICAL PUBLICATIONS.

SEE PAGE 2

THE RADIUM INSTITUTE LONDON

Just Published Cloth Demy 8vo Art Paper Pp xii + 41
Illustrated with 40 Photographs

A MANUAL OF TECHNIQUE IN RADIUM THERAPY

Being a Supplement to A CLINICAL INDEX OF RADIUM THERAPY (Issued in 1925)

By A E HAYWARD PINCH, F R C S, Medical Superintendent
(Published with the authority of the Committee)

"Contains observations of special interest gives a succinct account of the technique employed in special situations"—THE LANCET

"Describes in detail the methods used in the surgery of access contains much valuable practical advice will be of real service to the profession"—BRITISH MEDICAL JOURNAL.

A copy of the above will be sent post free to any Medical Practitioner upon application to the Secretary, Thomas A Garner, F C I S, 16 Riding House-street Portland place, W 1

HYPNOTISM AND TREATMENT BY SUGGESTION

4th Ed] [5s net

By ALBERT E DAVIS, F R C S Ed, L R C P, Hon Physician to the Liverpool Psycho-Therapeutic Clinic

"A fascinating book"—THE DAILY NEWS

Putnam's Sons Ltd London

Pp viii +262 with 51 Illustrations Price 8s 6d

DISORDERS OF THE HEART.

By ALEXANDER BLACKHALL-MORISON, M D, F R C P,
Consulting Physician to the Royal Northern Hospital, &c

"*The book merits careful perusal and consideration, as it contains many striking criticisms of current theories and a new marshalling of ascertained facts*"—BRITISH MEDICAL JOURNAL

Baillière, Tindall & Cox 8, Henrietta St Covent Garden, W C 2

STERILITY IN WOMAN

ITS CAUSES AND TREATMENT

By ROBERT A GIBBONS, M D, F R C S E,
Gynæcologist to the Grosvenor Hospital for Women

"It is written clearly, and should make a special appeal to the general practitioner We can heartily recommend this useful and well written book."—THE LANCET

"The volume provides an admirable account of the whole subject it is sufficiently full for the needs of the family practitioner, and is written in a refreshingly clear and lucid style"—BRITISH MEDICAL JOURNAL

With 44 illustrations 12s 6d J & A Churchill, 1923

ON THE BREAST.

By DUNCAN C L FITZWILLIAMS, C M G, M D, Ch M, F R C S Ed and Eng

Royal 8vo 456 pp 2 Plates, 166 Illustrations 30s net

LANCET.—"The book is packed with accurate clinical observations and bears evidence throughout of extensive clinical experience and wide reading on the part of the author"

Wm Heinemann (Medical Books) Ltd, 20, Bedford-street, London, W C 2

JUST READY

THE NEW VOLUME OF THE COLLECTED PAPERS OF THE

MAYO CLINIC.

See Saunders' Advertisement on Page 3

THE PATHOLOGY, DIAGNOSIS AND TREATMENT OF

FUNCTIONAL NERVOUS DISEASES

By PAUL BOUSFIELD, M R C S, L R C P

Crown 8vo 6s net

Medical Times—"The book constitutes one of the best of the smaller works on functional nervous diseases The general practitioner to whom an elementary knowledge of psycho therapy is now really essential will find this book invaluable in the routine of everyday practice"

Wm Heinemann (Medical Books) Ltd, 20, Bedford Street, *London* W C 2

THE STOMACH

AND UPPER ALIMENTARY CANAL IN HEALTH AND DISEASE

By T IZOD BENNETT, M D, M R C P

Demy 8vo Illustrated *21s net*

CHARING CROSS HOSPITAL GAZETTE—"Quite up to date but in the tradition of the best medical literature An excellent book for the student and the practitioner"

Wm Heinemann (Medical Books) Ltd, 20, Bedford-street, London W C 2

WORKS BY DR HARRY CAMPBELL.

TREATMENT OF DISEASES OF THE NERVOUS SYSTEM
(Functional and Organic) In Preparation
FUNDAMENTAL PRINCIPLES OF TREATMENT
MAN'S MENTAL EVOLUTION

Baillière, Tindall & Cox, 8, Henrietta-street Covent Garden, W C 2

HEADACHE
FLUSHING AND MORBID BLUSHING
H K Lewis & Co, Ltd 28 Gower-place, W C 1

LEWIS'S PUBLICATIONS

IN ONE VOLUME Demy 8vo 18s net, postage 9d

A SYNOPSIS OF SPECIAL SUBJECTS.

For the use of Practitioners.

RMATOLOGY By H Semon, M A, M D Oxon, Physician, s of the Skin, Royal Northern Hospital, etc

CS AND DISEASES OF WOMEN By Malcolm M B, B Ch. Cantab, F R C S Eng, Assist heur, St Bartholomew's Hospital, etc

EAR, NOSE, AND THROAT By Archer Ryland, F R C S Edin, Surgeon, Central London Throat, Nose, and Ear Hospital, etc

EYE. By John F Cunningham, O B E F R C S Eng, Surgeon, Central London Ophthalmic Hospital, etc

ue will undoubtedly receive a warm welcome from the busy practitioner The ground covered is extensive, dequately carried out"—THE LANCET

With 149 Charts (145 in Colour) Demy 8vo 25s. net postage 9d

AL CLIMATOLOGY OF ENGLAND AND WALES.

By EDGAR HAWKINS, M A Oxon, M D Edin, D P H Oxford

ill find this creditable and handy volume of much service. The book is well arranged, and, for ly the best of its kind now available"—THE LANCET

ON: H K LEWIS & CO LTD., 136 GOWER STREET and 24 GOWER PLACE, W C 1

White, H P Winsbury, Closed renal tuberculosis 1310
White William Henry (O), 978
Whitehouse, Beckwith on causes and treatment of uterine hæmorrhage without gross physical signs, 382 on nomenclature of abnormal uterine hæmorrhage (C), 575
Whitfield A, on eczema 548
Whiting Maurice H, Ophthalmic Nursing (R) 608
Widgery, F W Acute intussusception in an adult, 122
Wigan, S M O's report, 1345
Wilkes, G A, Definition of drunkenness (C) 358
Wilkie, D P D, Functions of biliary passages in relation to their pathology, 689, on gastro enterostomy, 284
Wilkinson, Russell and Punch, A Lisle, Ultra violet radiation some illustrative cases 1211
Wilkinson, W Camac The Principles of Immunity in Tuberculosis (R) 336
Willcox, Sir W, on medico legal importance of carbon monoxide poisoning, 1219
Willesden, M O H's report, 1030
William Gibson Memorial Scholarship for Women, award of 102
Williams, Maj Charles Louis, death of, 1032
Williams Leonard, Obesity (R), 560
Willoughby, W G Management of infectious diseases in boarding schools 1063
Willoughby, W M Tuberculosis in the Shetland Islands (C), 97
Wilson, R McNair, The Beloved Physician, Sir James Mackenzie (R) 906
Wimbledon (B) M O H's report 148
Windward and Leeward Islands, medical services in (P I), 259
Wine and the Wine Lands of the World (F Hedges Butler) (R) 1321 non alcoholic (M L), 972 what is? (M L), 972
Wireless in hospitals, 1028
Witts, Leslie J Treatment of diabetes in Canada and U S A, 1160
Woking (U D), M O H's report 11
Wolfenden, Richard Norris (O) 1036
Woman juror's illness (M L), 971
Women citizens and health work, 726
Women in medicine, the future of (Sir Walter Fletcher), 710 medical in Germany 1027, (C), 1087 Medical Women's International Association, 628, *professional, an address on the health of* (Letitia Fairfield), 5, proposers, all sickness insurance rates for, 35
Women's medical service for India, 515 organisations in relation to social hygiene, 159
Wood, Prof Carter, on action of lead on rat tumours 282
Wood J I Heliotherapy in pulmonary tuberculosis 372
Woodcock, H de Carle, Oleothorax (C), 96
Woodhall Spa, 1334
Woolf, Mortimer on pain 858
Woollen and Worsted Textiles (Lifting of Heavy Weights) Regulations (1925), 686
Workhouse statistics, 67
Workmen insured loss of orientation in (Percy Dunn), 66
Workmen's compensation and the surgeon (V Warren Low), 841
Worster Drought C, Subcutaneous fibroid syphilomata, 637
Worthington George V Sun bathing in Upper Egypt 988
Wounded evacuation of, by air, 529
Wright A J Hæmorrhage associated with peritonsillar abscess (C), 149
Wright, Andrew Rae (Wilbur) (O) 205
Wright Samson and Curtis F R, Observations on the action of lobeline, 1255
Wynne, the late Dr Smith 1089
Wynter Dr Essex gift to the Middlesex *Hospital by (L A), 1277*

X

X Ray *Diagnosis (Magnus Redding)* (R) 1323 in Embryology and Obstetrics, The (W A N Dorland and M J Hubeny) (R), 1222
X *Rays and Peripheral Circulation* Die Peripheren Blutgefässe im Röntgenbild (S Hirsch) (R), 69, some effects of primary and secondary upon the skin of the frog tadpole (Hector Colwell and M Sydney Thomson), 59
Xanthochromia, cutaneous (A), 1125

Y

Yates, A Lowndes The righting reflexes in encephalitis (C), 728
Yaws acetylarsan in, 350 in Kenya (A), 507, and syphilis in tropical Africa mass treatment with bismuth arsenic compounds (C), 43
Yeates Thomas 'Ex nihilo nihil fit' 744
Yellowlees, Henry, Psychoses and psychoneuroses contrasted from a psychological point of view, 481
York M O H's report, 1031
Yorkshire cancer pamphlet, a (A), 918, hospitals Royal family and, 831 West Riding mental defectives in 261 S M O's report 254
Young Hugh H, and Davis David M, Practice of Urology (R) 389
Young Matthew and Stewart, Clara, Cancer of the uterus, 1255

Z

Zander treatment, 838
Zinc absorption effect of, upon health, 530 the toxicity of (A), 194
Zorbo joint jackets, 888

CONCORDANCE

To enable the reader to determine at a glance the date and serial number of the issue of THE LANCET containing the required page reference

Pages	Date of Issue	No	Pages	Date of Issue	No	Pages	Date of Issue	No
1– 52	July 3rd	5366	481–530	Sept 4th	5375	939– 988	Nov 6th	5384
53–106	„ 10th	5367	531–582	„ 11th	5376	989–1046	„ 13th	5385
107–160	„ 17th	5368	583–632	„ 18th	5377	1047–1096	„ 20th	5386
161–214	„ 24th	5369	633–686	„ 25th	5378	1097–1150	„ 27th	5387
215–264	„ 31st	5370	687–734	Oct 2nd	5379	1151–1202	Dec 4th	5388
265–314	Aug 7th	5371	735–788	„ 9th	5380	1203–1252	„ 11th	5389
315–364	„ 14th	5372	789–838	„ 16th	5381	1253–1304	„ 18th	5390
365–414	„ 21st	5373	839–888	„ 23rd	5382	1305–1354	„ 25th	5391
415–480	„ 28th	5374	889–938	„ 30th	5383			

PUBLISHED BY THE PROPRIETORS, THE LANCET LIMITED, No 423, Strand, and No 1, Bedford street Strand, in the County of London, and printed by HAZELL, WATSON & VINEY, LD, 52, Long Acre, W C 2

Arris and Gale Lecture

ON

CHOLECYSTOGRAPHY.

Delivered before the Royal College of Surgeons of England

BY STANFORD CADE, F R C S ENG,
ASSISTANT SURGEON, WESTMINSTER HOSPITAL.

RADIOLOGICAL diagnosis of the condition of the biliary tract has made a distinct advance by the development of cholecystography Ewart A Graham published in 1924 the preliminary report[1] of the method known as Graham's test, by which a radiogram of the gall-bladder is obtained after intravenous injection of certain chemical substances Following the investigation of the hepatic function by its power of excreting certain dyes, first introduced by Rowntree, Hurwitz, and Bloomfield[2] in 1923, Graham conceived and carried out a systematic series of experiments for the production of hepatitis and cholecystitis, this led to the investigation of the gall-bladder by means of certain salts which are taken up from the blood stream by the liver and excreted in the bile, and which are opaque to the X rays when concentrated In a series of papers published[3 4 5] in 1924 and 1925 Graham and his collaborators have gradually improved the technique of this method of investigation The substance employed is one of the halogen elements linked with phenolphthalein Iodine and bromine were found to be the most suitable halogens, and a comparison of the two was worked out by Whitaker and Milliken[6] These workers, as well as Carman,[7] Sherwood Moore, and many others,[8 9] have put the method to clinical tests and correlated their results The method has been eagerly tried by many clinicians, and papers by Cohen and Roberts[10] and by Wilkie and Illingworth[11] have been published recently

In my experience the use of sodium tetraiodophenolphthalein gives the better results The radiograms are much more distinct than those with the bromine salt The toxicity is so low that, if the dosage is carefully regulated and the patient suitably prepared, no unpleasant symptoms result, with very few exceptions Intravenous administration is vastly superior to the oral method if a good shadow is desired

TECHNIQUE

The preparation of the patient is important The stomach must be empty and the alimentary canal as free from gas as possible No food is to be given during the period the radiograms are taken Protein is omitted from the last meal on the eve of the injection 40 gr of sodium bicarbonate are given two-hourly during the day A maximum dose of 4 5 g of sodium tetraiodophenolphthalein dissolved in 40 c cm of double distilled water is injected intravenously, the solution must be warm and injected very slowly No ill-effects have been noticed from a single injection, but Graham[3] and Carman[7] advocate the administration of two equal half doses at a half hour's interval The greatest possible care must be taken that the solution is given intravenously, the escape of even the smallest quantity into the subcutaneous tissue produces cellulitis and necrosis Skiagrams are taken 4, 8, 24, and, if necessary, 30 hours later

Normal Biliary System

In cases where the biliary system is normal and the gall-bladder healthy a shadow is obtained three hours after the injection of the dye The density of the shadow will vary with the softness or hardness of the tube and the length of exposure With a correct radiological technique uniform results are obtained The size of the shadow is always larger than the actual gall-bladder It is largest four hours after inject and gradually diminishes in size of gall-bladder shadow is generally pyriform with the base downwards, less frequently it is ovoid and rarely spherical

Position of the Gall-bladder.

When full the fundus reaches, as a rule, the transverse process of the third lumbar vertebra, its upper extremity extending to the transverse process of the first lumbar or just below it The long axis is directed downwards and slightly outwards, parallel with the psoas muscle In narrow-chested individuals the position may be vertical, in cases with a wide thoracic angle it is more horizontal; the relation of the shadow to the twelfth rib is variable, most commonly it is well below it; not infrequently it is only a short distance from it, and at times at the level of the twelfth rib A shadow above the twelfth rib is an indication of abnormality most commonly due to adhesions, the high-situated shadows are, as a rule, more spherical and smaller than the low ones, one can regard the small, round shadow situated between the eleventh and twelfth ribs, well away from the transverse processes, as an indication of cholecystic disease

The gradual diminution of the shadow in the course of 24 hours is evidence of the normal elasticity of the muscular coat In a fasting individual this diminution in size is gradual and regular, and takes place in all directions, the shadow becoming shorter and narrower.

It has been observed that the density of the cholecystogram increases from the fifth to the tenth or twelfth hour, and then gradually diminishes This variation in density is an important feature, it indicates a normal and healthy mucosa and is a proof of the power the gall-bladder possesses to concentrate bile; the power of concentration is a normal function of the biliary vesicle and depends on the state of the mucosa Rous and McMaster[12] have shown that the normal gall-bladder concentrates the bile which passes through it sometimes as much as ten times, and Boyd,[13] in examining the gall-bladder by means of a dissecting microscope, described in detail the appearance of the mucosa so admirably suitable for absorption The gradually increasing density of the cholecystogram is in entire agreement with the conclusions drawn from those observations. The function of the gall-bladder is reduced to that of a mere reservoir only in cases where the mucosa has been changed by disease into a thin atrophied lining In these cases there is no variation in the density of the successive shadows

The dye as excreted by the liver is not sufficiently opaque to cast a shadow[14] The ducts do not possess the property of concentrating the bile; on the contrary, it has been shown that they dilute the bile with a thin secretion of their own· this secretion, which is colourless and devoid of cholates, is the so-called "white bile" found in certain pathological conditions Consequently, in cases of common duct obstruction, owing to lack of concentration, no shadow is obtained, although the gall-bladder is present and the cystic duct patent

Rate of Emptying

The difficulty of ascertaining the rate of bile flow from the gall-bladder in normal individuals and animals has given rise to contradictory statements In observations on biliary fistulas one is dealing with an abnormal condition, this criticism applies even more forcibly to observations under anæsthesia; from clinical studies with the duodenal tube different observers have arrived at different conclusions The visualised human gall-bladder casts an opaque shadow which, photographed at periodical intervals, gives a true picture of the variations in size during the period of opacity The activity of the gall-bladder varies with intake of food In fasting individuals there is a slow and progressive emptying of the biliary vesicle which is fairly constant The size of the shadow becomes gradually smaller and is about one-third of its original 30 hours This gradual emptying is a constant n in all normal gall-bladders observed. In t the surface areas of the

SUGGESTIONS FOR EFFECTIVE

PLURIGLANDULAR OPOTHERAPY

DIGLOBIN → **ANÆMIA**

Spleen Extract and Epiphyseal Bone Marrow.

References "*The Hematopoietic effects of desiccated Red Bone Marrow and Spleen in Normal Humans*"
"*The Erythropoietic Action of Red Bone Marrow and Splenic Extracts*"
—The Journal of Pharmacology and Experimental Therapeutics, Vol No 22, Nos 2 and 7, etc, etc

In Bottles of 60 Tablets, each containing 30 ctgs of the desiccated extracts

IODOBESIN → **OBESITY**

Pluriglandular Total Extracts with Iodalbumen.

A safe and useful adjunct in the treatment of Obesity and other troubles due to deficient endocrine activity

In bottles of 60 Tablets, containing 15 ctgs of desiccated extracts and 5 ctgs of Iodalbumen (colloidal)

HOMOVIR → **IMPOTENCY**

A combination of Thyroid, Suprarenal, Pituitary, Prostatic and Orchitic Extracts.

Used in certain forms of aspermia, sterility, asexualism, and pre-senility
In bottles containing 50 Tablets

MYCOLACTINE → **CONSTIPATION**

A combination of Bile Extract, Yeast and Lactic Ferments.

An educator of the bowels and an intestinal disinfectant in alimentary toxemias and intestinal stasis
In bottles of 50 Tablets

Literature and Samples obtainable on request from

THE ANGLO-FRENCH DRUG CO., LTD.,
238a, Gray's Inn Road, London, W.C.1.

jaundice is no contra-indication for the administration of sodium tetraiodophenolphthalein.

I have investigated cases of common duct obstruction due to neoplasm of the pancreas with large easily palpable distended gall-bladders, and cases of calculus obstruction with shrunken atrophied biliary vesicles; in none was a shadow obtained. The conclusions drawn from the study of these cases controlled by operation or autopsy are that in obstruction of the common duct the gall-bladder function is abolished and its power of concentrating bile is diminished.

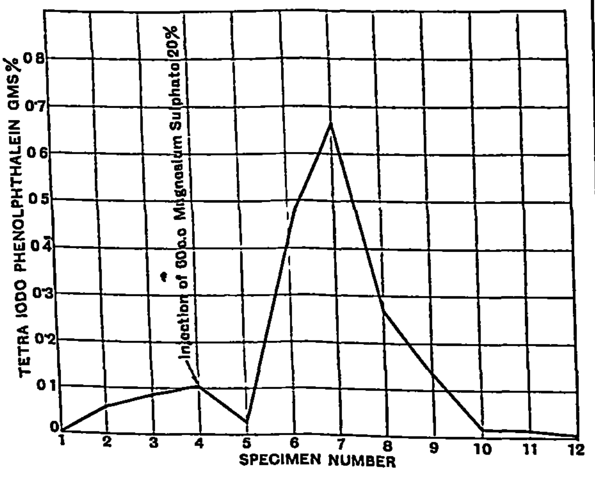
GALL-STONES

The opacity of gall-stones to the X rays depends on their chemical composition. Pure cholesterin stones are so transparent that no shadow is obtained; calculi containing calcium are opaque, and the density of the shadow is in direct proportion with the amount of calcium salts present. Ringed shadows are very typical. The appearances of cholecystograms in cases of lithiasis without cystic duct obstruction depend upon two factors—the degree of cholecystitis and the number of stones. If the stones are so numerous as to fill the gall-bladder, or if there is marked cholecystitis, no cholecystogram is obtained. With fewer stones the shadow is of mottled appearance, and the stones become more opaque as the density of the shadow is increased. The mottling of the shadows is definite evidence of gall-stones. The usefulness of the method lies in the fact that gall-stones which are invisible in a preliminary radiogram, when immersed in bile containing the dye are outlined as negative shadows. Also some calculi, by absorbing the dye in sufficient amount, become visible in the skiagrams. Further, it is a means of differentiating gall-stones from shadows cast by glands, stercoliths, renal calculi, and phleboliths.

CHRONIC NON-CALCULOUS CHOLECYSTITIS

This condition was first described by Keen in 1883, and since by numerous pathologists and surgeons. Clinically it may resemble gall-stone disease so closely as to merit the name pseudo-cholelithiasis, or the main burden of the symptoms may, on the other hand, be extravesicular. These extravesicular symptoms, predominant in the patient's account of his illness, consist in gastric or intestinal disturbance, deterioration of general health, repeated migraine, and signs of toxæmia, which accounts for the frequent mistaken diagnosis. The vesicular symptoms are transient and obscured in the patient's mind by the more obtrusive general discomfort; they are present, none the less, and will be found if looked for.

FIG. 2



The essential histological picture is the gradual replacement of all the layers of the gall-bladder wall by inflammatory fibrosis. The changes vary in degree according to the duration of disease. In the early stages there is round-cell infiltration of the submucosa, some shedding of the epithelium, formation of small diverticula containing bile grit, and a slight degeneration of the muscle; later on the mucosa degenerates and stains feebly, the fibrosis of the muscular wall is increased, and the subperitoneal stratum is beginning to be invaded with fat. In the late stages the columnar epithelium is replaced by a layer of flattened cells, or the mucosa may be absent altogether; the wall is thickened and no elastic and muscular tissue can be distinguished; the fat under the peritoneum is greatly increased.

The diagnosis, although not obvious, can be arrived at in combining careful clinical examination with cholecystography and the Meltzer-Lyon test. Cholecystographic findings are as follows. When the mucosa is grossly involved no opaque shadow is obtained. In lesser degrees the shadow is faint throughout; it does not vary in intensity and only slightly in size, and it conveys the information that the mucosa is incapable of concentrating the dye and that the elasticity of the viscus is lost—such a finding is a clear indication for cholecystectomy. In lesser degrees of disease the shadow is faint, and the rate of emptying is greatly diminished. This slow emptying, so apparent in consecutive cholecystograms, means biliary stasis; and the stagnation of bile is responsible for the symptoms produced. The importance of cholecystography in these cases lies not only in the aid in diagnosis but in the information obtained in connexion with the results of non-operative treatment and the progress of the case. The whole investigation can be done on out-patients; hospitalisation is preferable, but not essential. The following is the routine: a careful history of the case is taken, a preliminary radiogram obtained, after suitable preparation cholecystography by the intravenous method is done: if there is evidence of early chronic non-calculous cholecystitis the patient is given 5 g. of magnesium sulphate and 2 g. of De Witte's peptone, half an hour before breakfast and half an hour before dinner. This should not be given if there is obstruction in the cystic duct, as biliary colic may ensue.

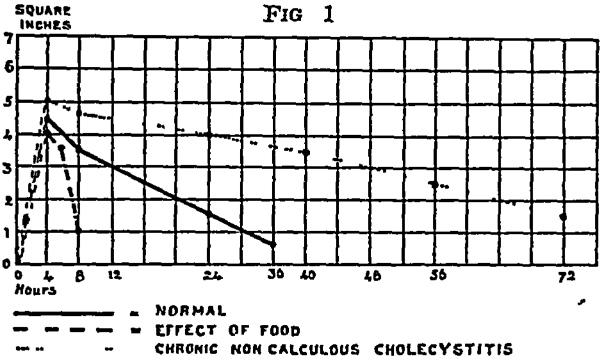
Treatment is continued for 10 or 14 days, and is followed by a second cholecystography, which shows if drainage has been efficient or not. If successful the rate of emptying is found to be increased and the shadows obtained approach the normal; if the picture remains unaltered it is obvious that the non-surgical drainage by magnesium sulphate-peptone is of no benefit and operation is indicated.[27] By this method a few cases of early cholecystitis can be rationally treated by medical means and their progress controlled. Other abnormalities observed relate to the implication of the gall-bladder in adhesions, to changes due to pericholecystitis. As previously mentioned, they can be summarised as follows: a shadow high situated between eleventh and twelfth ribs spherical in outline and of poor intensity.

In examining cases which previously had cholecystotomy performed it was found that none gave a normal opacity; in some no shadow was obtained showing loss of function of the viscus, subsequently proved by operation; in others very poor shadows were obtained. Without entering into the consideration of the value of cholecystostomy as compared to cholecystectomy, and admitting freely that both operations have their indications and their uses, cholecystography gives important information as to the functional capacity of gall-bladders previously drained. It appears from the preliminary investigation that the recovery of function after cholecystostomy occurs only in cases of lithiasis with very little cholecystitis. When drainage was chosen instead of removal owing to operative difficulties caused either by the anatomical or the pathological condition at the time of operation the recovery of function is very rarely established and sooner or later further trouble results. To quote Sir John Bland-Sutton: "A gall-bladder that has been subjected to a cholecystotomy is a liability rather than an asset."[28]

and plotting out the figures according to the time elapsed since injection a graphic representation of the rate of emptying is obtained The superimposed curves of over 25 normal graphic representations is taken as the average rate of emptying of a normal gall-bladder when fasting (Fig 1)

The effect of food was studied, and it was noticed that water, milk, tea have very little influence on the rate of emptying Solid food, specially fat, produces a rapid diminution of the size of the gall-bladder shadow; the graph obtained under these conditions shows a sharp fall in the curve Moreover, if the emptying is complete no further shadow is obtained, indicating that the intake of food is followed not only by emptying of the gall-bladder, but by increased activity of the liver and relaxation of the sphincter of Oddi, as most of the bile containing the dye is passed straight into the duodenum It was also noticed that in two cases of duodenal ulcer the rate of emptying was more rapid, this is interesting in view of the remark recently made by Charles Mayo that "Nature has provided us in the gall-bladder with a natural soda fountain, very useful in hyperacidity"

FIG 1



CHOLECYSTOGRAMS IN CONJUNCTION WITH MELTZER-LYON TEST

Doyon [15] in 1893 paved the way for the Meltzer-Lyon test in showing that the contraction of the muscular coat of the gall-bladder was dependent on its innervation by the great splanchnic nerve, and that the relaxation of the sphincter of Oddi was under the influence of the vagus In 1917 S J Meltzer [16] observed that the application of 25 per cent magnesium sulphate solution to the duodenal mucosa was followed by gaping of the ampulla of Vater and a flow of bile Two years later Vincent Lyon [17] carried out Meltzer's experiment on the human subject and postulated the non-surgical drainage of the gall-bladder The emptying of the gall-bladder after the intraduodenal exhibition of magnesium sulphate, known as the Meltzer-Lyon test, has been criticised by Einhorn,[18] Auster and Crohn,[19] Diamond,[20] and a host of others [21] It was maintained that the flow of green bile (bile B) was due to the action of magnesium sulphate on the liver Numerous complicated and ingenious experiments were carried out to prove that the dark-coloured bile obtained in the Meltzer-Lyon test was not vesical but hepatic in origin Substances other than magnesium sulphate were found to produce the same effect Lyon himself failed to observe the contraction of the gall-bladder in the anæsthetised dog, and explained the failure by the fact that the reflex was "easily disturbed" [22] Bassler, Lucket, and Lutz [23] failed to see the contracting gall-bladder Gradually it came about that the gall-bladder was robbed by some authors of all power of contraction On perusal of the rapidly increasing literature on this subject [24] one cannot fail to be impressed by the importance attached to the Meltzer-Lyon phenomenon The combination of cholecystography with the Meltzer-Lyon test has the advantage that it is carried out without anæsthesia, without laparotomy, with very little disturbance of the reflex itself It gives photographic evidence of a reduction in size and alteration in position of the gall-bladder shadow And since non-surgical drainage of the gall-bladder with the appearance of a large amount of dark-coloured bile is accompanied by the alteration in shape and diminution in size of the cholecystogram, the bile obtained by the test must be vesical and not hepatic Further, the bile B thus obtained showed to contain a large amount of tetraiodophenolphthalein (Fig 2) Silverman and Melville [25] combined cholecystography with the Meltzer-Lyon test and arrived at the same conclusions

Chiray and Pavel [26] have analysed the various experiments, and conclude that the gall-bladder contractions exist, that they are of small amplitude *and long duration*, and therefore difficult to observe My own experiments on dogs have shown distinct contractions of the gall-bladder after application of magnesium sulphate to the duodenum I repeated the experiments in the presence of Dr de Souza, who observed the same result

In reviewing the various normal functions attributed to the gall-bladder cholecystography helps to transfer these functions from the realm of hypothesis to that of fact The gall-bladder acts as a reservoir and stores bile secreted in between meals The gall-bladder is contractile and expels its contents by waves of contractions of *slow amplitude accelerated by the* entrance of chyme into the duodenum The gall-bladder concentrates bile These various functions are deduced from the *appearance of the opaque* shadow its increase in density, its gradual disappearance when fasting, and its quick emptying after food or with the action of magnesium sulphate.

PATHOLOGICAL BILIARY SYSTEM.

Cholecystography as an aid to clinical diagnosis of disease of the biliary system requires no apology. Although the diagnosis of a number of cases presents no special difficulty, it is notorious that the characteristic symptom of biliary disease is the lack of definite characteristics, and the mimicking of gastric and duodenal symptoms is a fruitful source of errors in diagnosis Familiarity with normal cholecystographic appearances is obviously *essential for the detection* and correct interpretation of abnormal findings The absence of shadow or negative result is a sign of disease It has been *accepted by all who are familiar* with the method and has been proved time after time by operation

A stone in the cystic duct or in Hartman's pouch, or scarring of the duct, prevents the entrance of the dye into the gall-bladder and no shadow is obtained. The *information* derived *from* cholecystography in that type of lesion is illustrated by the following case

A lady, aged 73, was admitted under the care of Sir James Purves Stewart for an abdominal tumour and gastritis She had suffered from gastritis for 30 years, for the last two years there was progressive loss of weight, marked deterioration of general health, frequent bouts of vomiting, persistent constipation, and a constant dull ache on the right side of abdomen On examination a large, hard, solid tumour was felt in the right hypochondrium and right iliac fossa The tumour was at first thought to be renal but a pyelogram showed normal calyces and pelvis, it was then considered to be a colonic growth—a bismuth meal showed a normal alimentary canal I was asked to see the patient with view to cholecystography The radiograms, taken 4, 8, 24, and 36 hours after injection, showed no gall-bladder shadow, and in the second plate a circular ringed shadow with darker nucleus became apparent The diagnosis was gall-stones and cholecystitis with large Riedel's lobe At operation under regional anæsthesia I found a large Riedel's lobe covering a bilocular *gall-bladder adherent* to duodenum, stomach, colon, and omentum, the proximal loculus contained a large stone in Hartman's pouch, the *distal* loculus contained multiple stones, and communicated by perforation with an abscess in the adherent omentum *Cholecystectomy* was performed The patient made an uninterrupted recovery

Every case of obstruction of the cystic duct gave negative cholecystographic findings In cases with obstruction of the common duct from whatever cause no shadow of the gall-bladder is obtained Presence of symptoms followed intravenous injection; the symptoms occurred within one or two minutes after injection, and were as follows giddiness headache, nausea, vomiting sudden fall of blood pressure (the pulse at the wrist could not be felt for half to three-quarters of an hour), and acute abdominal pain The symptoms were very alarming, recovery was gradual but complete and both patients were fit to leave the hospital five hours later I have reason to believe that the toxic effect was partly due to a too rapid injection and partly to oxidation of the iodo compound The necessity of slow administration cannot be emphasised too strongly, the salt itself must be absolutely pure and as fresh as possible With these precautions and attention to the accuracy of the dose and preliminary preparation I consider the method as an absolutely safe procedure

Oral administration never gives as good results as the intravenous method, it gives also far less information as regards function of the gall-bladder, as the shadow appears much later lasts a shorter period and is never as dense as that obtained by the intravenous injection In my opinion oral administration presents definite inconvenience and it cannot be said to be safer The drug has to be given in solid form · as contact with hydrochloric acid produces a definite chemical reaction, it is customary to give it in capsules, enteric capsules have been tried and discarded owing to delay of solution, ordinary gelatin capsules often fail to liberate the dye and small masses of the drug can be watched under the fluoroscopic screen in their transit through the alimentary canal, the rate of absorption is extremely variable and, owing to the laxative action of the phenolphthalein, a good deal of the dye is lost, this accounts for the poor shadows obtained and the unstability of results A negative result after oral administration is therefore of no value, on the other hand, after intravenous injection is definite evidence of disease The loss of the salt by the bowel cannot be made good by giving a larger dose orally, as the stomach and intestine do not tolerate it and vomiting and diarrhœa result. this explains why the advocates of the oral method never exceed by the mouth the intravenous dose, and often give less The advantage of oral administration is simplicity, but for this method to be of full value it is necessary to give a substance which is rapidly absorbed by the intestine, is non-irritant to the mucosa, and non-toxic, so that a much larger dose than is necessary to produce a shadow could be given to allow for the loss by passage through the alimentary canal Sodium tetraiodophenolphthalein does not possess these properties, neither does strontium bromide advocated by some Italian clinicians Dr F D M Hocking however, is at present engaged in the preparation of a chemical compound which one hopes will fulfil the necessary desiderata for oral administration

Summary

Cholecystography is a new method of investigation of the biliary system based on the capability of the liver to excrete certain dyes opaque to the X rays

It is a means of studying the topographical anatomy of the gall-bladder in the living; it throws light on the physiology of the gall-bladder, on its activities under various conditions, and on its multiple functions In disease it provides additional information in late and in early stages It is a means of controlling the non-operative treatment of chronic cholecystitis

It is not meant to replace clinical diagnosis, but adds greatly to its accuracy It is to the biliary system what the opaque meal is to the alimentary canal, and pyelography to the urinary tract It has made rapid advances in a very brief period of time and has gained for itself, I believe, a permanent position amongst modern methods of investigating disease

In conclusion, I have much pleasure in expressing my obligation to all those who collaborated with me in this study To Dr W H Coldwell I am indebted for all the radiological and radiographic work, and for the willingness with which he placed at my disposal his entire department, his time and his skill To Mr Arthur Evans my thanks are due for his whole-hearted and encouraging interest in the method, his unstinted generosity in the matter of hospital beds, and for giving me the opportunity of investigating cases of biliary disease under his care In the John Burford Carlill laboratories the pathological work connected with this investigation was carried out by Dr Braxton Hicks who examined all specimens, human and animal, and the biochemical work was done by Dr Hocking, to both I am greatly indebted To Mr Price Thomas I wish to express my appreciation for the valuable assistance with the animal experiments and the clinical part of the work

Bibliography

1 Graham, E A, Cole, W. H Jour Amer Med Assoc, 1924 lxxxii, 613
2 Rowntree Hurwitz Bloomfield Bull Johns Hopkins Hosp, 1913 xxiv 327
3 Graham and Cole Jour Amer Med Assoc, 1924, lxxxii, 1177
4 Graham, Cole, Copher Ibid, 1925 lxxxiv, 14
5 Graham, Cole, Copher Ann. Surg Philad 1924 xxx 173
6 Whitaker, L R, and Milliken, G Surg Gyn Obst, 1925, x, 17
7 Carman R D THE LANCET, 1925 ii, 67
8 Sabatini, G, and Milani, E Il Policlinico, 1925, i, 623
9 Wheeler, R. R Boston Med and Surg Jour, Oct 8th, 1925
10 Cohen, H, and Roberts, R E Brit Med Jour, 1925, ii, 54
11 Wilkie and Illingworth Ibid 1925, ii 1046
12 Rous, P, and McMaster, P. D Jour Exp Med, 1921, xxxiv, 95
13 Boyd, W Brit Jour Surg 1923, x, 337
14 Copher, G H Jour Amer Med Assoc, 1925, lxxxiv, 21
15 Doyon Th Doc Sc Nat. Lyon 1893
16 Meltzer, S J, and Auer Amer Jour Med Sc, 1917, cliii, 469
17 Lyon, Vincent Ibid, 1920, clx, 515
18 Einhorn N Y Med Jour, Sept 7th, 1921
19 Auster L S and Crohn, B B Amer Jour Med Sc, 1923, clxiv, 345
20 Diamond Ibid, 1923, clxvi, 894
21 Kamastima Zeit Gesam. Experim Med, 1923 xxxv 391
22 Lyon (quoted by Chiray and Pavel) Jour Phys. and Path Gén, xxxiii, 109
23 Bassler, A, Lucket W H and Lutz, J R Amer Jour Med Sc, 1921, clxii, 674
24 Chiray, M, and Milochewitch, M Diag and Trait Mal Ves Bil (Paris, Masson)
25 Silverman, D M, and Melville, L J Jour Amer Med Assoc, 1925, xxxiv, 416
26 Chiray, M, and Pavel J La Presse Méd, 1925, xxxiii, 713
27 Chiray, M. Ibid, January, 1925, p 102
28 Bland Sutton, Sir John Brit Med Jour, 1924, ii, 797
29 Copher, G H Jour Amer Med Assoc, 1925, lxxxiv, No 21

An Address
ON THE
HEALTH OF PROFESSIONAL WOMEN.

Delivered to the London Association of the Medical Women's Federation on June 8th, 1926,

BY LETITIA FAIRFIELD, C B E, M D EDIN, D P H,
FORMERLY WOMAN MEDICAL DIRECTOR TO WOMEN'S ROYAL AIR FORCE.

MODERN social and economic developments have brought important changes in the lives of women which necessarily have involved profound effects on their health These results have been much discussed, and in the case of the *industrial* woman have been made the subject of intensive study from which she has derived substantial benefit The *professional* woman is much less accessible to observation, and the exact data which are a condition precedent to advance in hygiene and success in the prevention of disease are deplorably lacking With the exception of the comparative statistics furnished by the post office about its employees, and a few small inquiries conducted in training colleges, a paper on the Sickness Data of Elementary School Teachers in London, 1904–19, by Mr J Y Hart, B Sc (*Journal of the Royal Statistical Society*, 1922) stands almost alone as a detailed study I have therefore ventured to present some observations on the health of profes-

It can therefore be concluded that non-appearance of the shadow is definite indication of cholecystic disease Mottling is evidence of gall-stones Chronic cholecystitis gives definite abnormality in the cholecystogram Cholecystectomy is indicated when the function of the gall-bladder is impaired

Histological evidence of disease has been found in every case where the shadow was abnormal or absent The surgeon will have to learn to distinguish from the appearance of the gall-bladder on laparotomy the early signs of disease in the absence of stones I have removed 30 gall-bladders in the past ten months, my senior colleague, Mr Arthur Evans, has given me the opportunity of examining every gall-bladder operated on by him during the past year—a considerable number—and I gradually came to appreciate the macroscopical appearance in the early stages of cholecystic disease.

ANIMAL EXPERIMENTS

The object in performing animal experiments was to ascertain the following points (1) The path taken by the dye from the time it is injected into a vein till it reaches the gall-bladder (2) The way out from the gall-bladder (3) The effect of sodium tetraiodophenolphthalein in various doses on the tissues and organs of the body (4) The symptoms produced by an overdose (5) The effect produced on the gall-bladder of magnesium sulphate in the duodenum All experiments were carried out on healthy adult dogs

In injecting the dye into a vein of a limb the dye is introduced into the systemic circulation It is carried to the heart, whence to the lungs and back to the heart, and so into the arterial stream It is presumed, as phenolphthalein is excreted by the liver, that in the course of the passage from the hepatic arteries into the hepatic vein the liver cells separate from the blood the phenolphthalein and with it the combined iodine In fact the dye is found in the bile canaliculi and is carried down to the gall-bladder by the hepatic and cystic ducts To prove this it is necessary to show that no dye can be separated by the gall-bladder itself from the blood stream The following experiment was carried out Laparotomy was performed on a fasting dog the gall-bladder was found to be fully distended ; the peritoneum over the cystic duct was incised, and the duct isolated by carefully separating it from the cystic artery and veins The duct was then divided between two ligatures The abdomen was closed and the dog allowed to recover When well a maximum dose of sodium tetraiodophenolphthalein was given intravenously, seven hours after injection the abdomen was opened a second time, the gall-bladder was seen to be normal in every respect and its blood-supply unimpaired, the gall-bladder was removed and its contents tested chemically and spectroscopically for the presence of the dye with absolutely negative results, the reactions being capable of showing 0 00001 g of the dye A specimen of blood of the same animal taken at the same time showed on analysis presence of the dye, this shows that no dye has entered the gall-bladder and that the mucosa is incapable of separating it from the blood stream [14]

The next experiment was made with the object to find out if any dye is absorbed from the gall-bladder by its blood-vessels or lymphatics Laparotomy was performed The cystic duct was isolated as before and divided between two ligatures, avoiding injury to its vascular supply A measured quantity—namely, 2 5 c cm of the dye (0 281 g)—was injected into the gall-bladder with a fine hypodermic needle As it is known that the dye produces necrosis of tissue a small quantity only was given and this was well diluted The abdomen was closed The dog was X rayed two days later, but no shadow was obtained, probably owing to the minute quantity of the dye injected, seven days later the abdomen was reopened, the gall-bladder, which appeared normal, was aspirated and the contents analysed The iodine content of the specimen showed the recovery of 84 1 per cent of total salt injected, by weight 0 236 g The small discrepancy in the figures is fully accounted for by the fact that not all the contents of the gall-bladder were aspirated, and that some of the dye remained adherent to the syringe The mucosa of the gall-bladder appeared normal The conclusion drawn from this experiment is that no sodium tetraiodophenolphthalein is absorbed by the wall of the gall-bladder, and that its disappearance is due to the ejection through the cystic duct [29]

Gradually increasing doses of " tetraiodo " were given to dogs on several occasions It was found that doses up to 0 2 g per kilo of body-weight produced no toxic effect, and repeated injections of non-toxic doses at regular short intervals up to full dose had no apparent cumulative effects on the animals, but when killed fatty degeneration of the liver and nephric changes were found histologically A large overdose, 5 g, given to a dog weighing 8 kilos, was followed by an immediate fall of blood pressure, and death occurred within 25 minutes. A dose of 3 5 g given to a dog weighing 7 kilos resulted in death after 16 hours The following symptoms were observed weakness (animal could not sit), fall of blood pressure, diarrhœa, vomiting, and convulsions *Post-mortem* examination revealed intense congestion of the liver and kidneys, these viscera being almost black, the heart was dilated, the bladder contained some blood-stained urine, the lungs were bright pink Histologically the liver showed intense congestion, the intralobular veins were distended, the portal capillaries engorged, there were marked subcapsular hæmorrhages and areas of destruction of liver tissue were present in which were seen particles of pigment (probably altered blood), the kidneys were in a condition of glomerular nephritis, the brain was engorged and there was some fragmentation of cerebral cells

The experiments with intraduodenal application of magnesium sulphate, as previously related, showed definite contractions of the gall-bladder All the animal experiments were carried out at the Brown Institution, and I am indebted to the University of London for permission to work there, and to the Director, Dr F W Twort, for his courtesy and the facilities afforded

RECORD OF CASES AND ANALYSIS OF RESULTS

Table I shows the total number of cases examined, the relative numbers of positive and negative results, and the control by operation Table II gives the analysis of the various conditions which gave positive or negative results Amongst the 49 normal gall-bladders are included conditions such as gastric ulcer or appendicitis, where the appearance of the gall-bladder was subsequently judged to be normal at operation

TABLE I —*Cholecystographies*

(Total number of cases, 100)

Positive results	61	
Negative results	39	
Controlled by operation		55
" by autopsy		3
Not operated		42

TABLE II —*Total Number of Cases, 100*

Positive		Negative	
Normal gall bladder	49	Cystic duct obstruction	16
Mottled shadow	6	Chronic cholecystitis	9
Cholecystitis	4	After cholecystectomy	3
Catarrhal jaundice	1	After cholecystostomy	4
Acholuric jaundice	1	Malignant gall bladder	1
		" pancreas	5
		Chronic pancreatitis	1
	61		39

The vast majority of cases were done by the intravenous method, and showed no ill-effects after the injection The dose varied from 3 to 4 5 g, according to the weight of the patient The only symptoms noticed in a small number of cases were headache, flushing of the face, giddiness, transient nausea, within 10 or 15 minutes the patient had entirely recovered There is no evidence up till now of any remote consequences attributable to the use of the drug In two consecutive cases severe toxic some the necessity for prompt and prolonged rest from work was not recognised early enough.

GASTRO-INTESTINAL GROUP

The *gastro-intestinal* group is large (96 cases), but shows some encouraging features. First may be noted in all teachers a very remarkable improvement in the care of the teeth. In only nine instances did septic mouths appear to be even a contributory cause of ill health, and in but two of these was there any opposition to dental treatment. These figures would have seemed incredible 12 years ago and show both the encouraging possibilities of health education and the value of the advice. One notes an almost dramatic contrast with the foul teeth of the lower grade workers, such as school cleaners, whose slow recovery after trivial accidents and ailments is largely due to septic absorption from the mouth. Secondly, there is a diminution in constipation, certainly in *neglected* constipation, which again furnishes an agreeable contrast to the days of our professional youth. But too many women have still to admit difficulty in securing adequate evacuations, and there is much reason to think that the 25 cases of appendicitis and 31 of other bowel troubles are associated with this condition. Two defects of hygiene may be suspected. One, lack of physical exercise, is common in the older women, who rarely played games in girlhood and had no opportunity of keeping them up after leaving college. The result is a general lack of muscle tone, flabby abdominal walls, and sagging viscera. The tennis-playing, dancing young professional woman of to-day has a much better chance of an alert middle age. The second common error is one of dietetics. Nearly every constipated person one meets nowadays claims to be a large fruit-eater, but, like all of us, has difficulty in getting a good supply of fresh vegetables. It has escaped comment that a curious, and I believe unique, food situation has arisen in this country during the last few years. Thanks to commercial developments large amounts of fruit now enter into the diet of all except the very poorest, but vegetables, especially green vegetables, are actually more expensive and unobtainable than in former days. The question arises whether we have not got too much into the habit of thinking of diet as a matter of purely hypothetical vitamins. Are "fruit and vegetables" really interchangeable? Certainly all those primitive peoples whose freedom from appendicitis and bowel troubles we envy, eat largely of both. It is a pity that it does not pay anyone to teach the public to "eat more vegetables."

A further encouraging sign is that "chronic indigestion" and dyspepsia seem to be diminishing. Of the 27 gastric cases, some 10 were gastric or duodenal ulcer, but the remainder were acute and were usually first attacks. The typical pink-nosed old maid, with her bottle of bismuth mixture and flow of confidences about her stomach troubles, is happily on the way to extinction. In addition to the improvements in hygiene before noted—to which should be added the abolition of the corset—credit is due to the more energetic and thorough treatment adopted by the modern practitioner. During the past year six "martyrs to indigestion" have come to announce triumphantly that they have been relieved of their symptoms by operations for appendicitis, gall-stones, or omental band.

A most important element in securing good digestion and good health is money to buy proper food. Women never really liked dining on sardines and cheap pastry, but they must pretend that they do when they can afford nothing better. Improved pay and professional prospects probably mean more in the reduction of digestive troubles than any other single factor.

CANCER

Cancer was the chief cause of death among women teachers, 8 deaths out of 35 in 1925 being due to this cause. About 12 other cases are known to have been operated on in the last 18 months. The only point of interest which emerges is the old story of the need for earlier diagnosis and treatment. There have been some tragic cases of an ignorance of notorious symptoms almost incredible in educated women, but it is clear that the fault is not all on one side. There seems, as Dr. W. Fletcher Shaw points out in the *British Medical Journal* (June 19th, p. 1026), to be a great reluctance to examine in certain quarters. As it is impossible to be too explicit in popular education about cancer for fear of creating undue alarm, the only practicable course is to warn women in general terms to consult their doctors in certain events. If practitioners do not "play up," the bottom falls out of the whole preventive campaign, and the cancer death-rate will remain where it is.

The following table shows:

Teachers on Prolonged Sick Leave (1 to 12 months)
Total number, 13,748

1	Pulmonary disease (non tuberculous)—		
	Asthma	10	49
	Pneumonia and bronchitis, &c.	36	
	Miscellaneous	3	
2	Influenza		84
3	Nervous system—		
	Insanity	6	293
	Organic disease	47	
	Functional	240	
4	Rheumatism—		
	Rheumatic fever	21	37
	Chronic arthritis	16	
5	Infectious fevers		17
6	Ear nose and throat disease		68
7	Ophthalmic disease		12
8	Digestive system—		
	Appendicitis	25	96
	Gastric	27	
	Intestinal	31	
	Gall stones	13	
9	Circulatory system—		
	Cardiac	27	56
	Anæmia	9	
	Phlebitis and varicose veins	9	
	Arterio-sclerosis	11	
10	Diseases of women—		
	Hysterectomy	25	66
	Ovarian	9	
	Malposition, &c.	11	
	Menopause	11	
	Menstrual troubles	10	
11	Accidents		49
12	Miscellaneous—		
	Cancer	12	73
	Hyperthyroidism	13	
	Pyorrhœa	12	
	Mixed	36	
			900

DISEASES PECULIAR TO WOMEN

The *diseases of women* are of special importance, not only on their intrinsic merits but as the chief alleged reason for discrepancy between male and female sickness rates. The 25 hysterectomy and nine ovarian cysts were responsible for a heavy time loss in senior teachers, as they were all absent for over three months. This liability to tumour formation between the ages of 40 and 60 would seem to be a sex disability which cannot yet be brought within the scope of preventive medicine. With menstrual disabilities the condition is far otherwise. Only 10 were noted in this series of 900; it is true that they would be expected to show as short and recurrent rather than long absences, but such short absences if persistent would be included in this series. It is hoped to conduct an investigation this year into the precise amount of interference with work due to the menses in teachers and nurses. Tentative inquiries have shown that it is surprisingly small. London teachers are not a selected class, in that no teacher has ever been excluded from the service on this ground, but for many years strenuous efforts have been made to supervise the health of the girls in the London training colleges (and probably those elsewhere), so that any necessary treatment is secured while in college. Very few young teachers have left still suffering from dysmenorrhœa or menorrhagia. One finds that the coöperation of the family doctor is very much easier to secure than it was 12 years ago, and the usual maternal attitude that pain at the periods is an act of God with which it would be impious to interfere is gradually disappearing. Twenty years ago the late Dr. J. W. Ballantyne, of Edinburgh, told me with grim amusement of his struggles to get his colleagues to take an interest in the then unfashionable subject of the ailments of the expectant mother. "Some think they're too trivial and others too hopeless, and they all look on it as a woman's job to put up with them, anyhow"! It is possible that a similar attitude to menstrual disability has been responsible for much unnecessary suffering.

sional women, based on a series of 900 consecutive cases of teachers referred to the school medical officer on account of absence for over a month, and for sundry other reasons, and supplemented by a knowledge of the same staff at their daily occupation over a period of 12 years. The number of teachers concerned is 13,748. They make good material for study, as their conditions of pay are sufficient to procure reasonable amenities of life and the best of medical and dental attention, and they have derived, by reason of their profession, the maximum benefit from modern hygienic propaganda.

COMPARISON OF SICKNESS RATE IN WOMEN AND MEN

An important point about the health of women generally must be borne in mind throughout, and that is the higher sickness rate which women always show as compared with men living under approximately the same conditions. I have been unable to obtain comparative figures for recent years for London, but Mr. Hart points out that "sex is the most important factor in illness of teachers. The mean illness of men teachers was 4·6 days a year for the period 1904–19, and the corresponding figures for single women and married women are 8·2 and 9·3 respectively. Men are absent least and married women most."

The following table shows:

Average Day's Absence per annum, London, 1904–19

Age groups	Men	Single women	Married women	Age groups	Men	Single women	Married women
21–25	4·3	6·4	11·1	46–50	4·0	10·9	9·7
26–30	4·1	6·0	8·5	51–55	5·5	15·1	11·7
31–35	2·8	8·6	7·1	56–60	5·8	10·4	13·1
36–40	2·8	8·7	8·2	61–65	9·2	19·1	19·6
41–45	3·5	9·1	9·0				

This fact is the more remarkable as the death-rate of men and women shows a disparity in exactly the opposite direction. As Newsholme points out ("Vital Statistics," p. 205), the death-rates at all ages except 10–15 are higher in the male. This discrepancy is most marked both in England and the United States at the very ages, 45 to 65, when the sickness rate is most against the female.

The London rates for death and permanent invaliding show the same peculiarity. The death-rate of female teachers (1925) was 0·25 per cent., as against the male rate of 0·44 per cent., while the permanent disablement rate was 0·40 per cent. for females and 0·27 per cent. for males.

It would appear that in some paradoxical way women save themselves from death by becoming ill! But however gratifying the comparatively lower death-rate is to them, the higher morbidity rate is a nuisance to their employers, and it will be very important to note whether any part of it is due to remediable causes and could be diminished by improved conditions of life. The difference affects *every* disease, however, when short absences are counted, and would appear to be partly due to inferior resistance.

ANÆMIA AND DEBILITY

Anæmia and debility figures prominently in all certificates covering short absences, but in only 1 per cent. of 900 serious cases was it impossible on investigation to find any more definite cause. It is three times as common as among men teachers. The vague "unfitness" thus described interferes considerably with the efficiency of women's work. Lack of exercise, fresh air, and sunshine are common causes in young town-dwellers, but another common cause of debility is too long a journey to work. Some women stand long daily travelling very badly, and improve greatly if they live near their work, and get what fresh air they can at the week-ends.

Diet gets less attention than it deserves in conditions of obscure ill-health. "Intelligent omnivorousness with no fuss" has been described as the ideal, but where loss of vitality is accompanied by poor nutrition it is worth while inquiring into minutiæ. I have found that a very important factor in the health of young women is a *hot*, fairly substantial midday meal. Many teachers now employ a cook to prepare a good dinner in their sitting-room, and office workers are fortunate if they can find a club where similar provision is made. Food in the big multiple shops is a great snare; it is apt to be overcooked and much less nourishing than it seems. Observation should always be kept for the "no-breakfast faddist," and the woman with food phobias retained from childhood who may be starving in the midst of plenty. In investigating cases of malnutrition among the children in a good class school I found that 5 out of 13 cases were cherishing food fads under the sympathetic eye of foolish relatives, and such whims sometimes persist throughout life. By increasing attention to such details of hygiene a real improvement has been and is still being obtained in the health of the younger women.

CARDIAC DISEASE

Cardiac disease furnished 27 cases (3 per cent.). It was the most important single cause of invaliding permanently out of the service in 1925. These serious cases were of mixed origin—septic, rheumatic, and influenzal—and present no remarkable clinical features. There were many opportunities of noting how very reluctant patients are to obey their medical attendants' injunctions to rest in the early stages. A striking example of the value of this was seen in the first half of 1925 when I had a series of about 40 cases of "cardiac debility" due to influenza. All were away from one to six months, and practically all cleared up entirely. On the other hand, I am constantly seeing seriously damaged hearts whose initial failure dates from neglected attacks of influenza.

Because of its pulmonary, as well as its cardiac, complications *influenza* is a great foe of the woman who has to leave her home daily. The temptation to go out on a chill winter morning when "it may be only a cold" is very great, and puts the worker at a disadvantage with her domestic sister. Influenza is a most serious school disease, and one would like to see preventive inoculation tried in the schools on a large scale.

Pulmonary diseases constitute 49 cases out of the 900; 36 were cases of bronchitis or pneumonia, mostly in elderly teachers. Chronic bronchitis is seen most often in stout, flabby women who have lived sedentary lives, and it is hoped that a more active younger generation will escape this most troublesome complaint, which is a serious source of inefficiency from 55 onwards.

Laryngitis is responsible for many prolonged absences, and may be considered as an occupational disease of teachers. Noisy, dusty, and draughty schools play an important part in its causation, and suggest an obvious method of prevention. The common cause of former days—bad voice production—is now comparatively rare, as the subject is well taught in college. Excessive cigarette-smoking is a factor sometimes overlooked. Great benefit has followed to some of the cases in this series from removal of septic tonsils even after the age of 50.

The 16 *exophthalmic goitre* cases call for a special note, as this is a particularly serious disease in teachers. The medical advisers to this education authority have for many years paid special attention to hyperthyroidism, and have regarded definite signs of Graves's disease as a bar to entering the teaching profession. The strain of examination, and even more of work in the class-room, has an inimical effect on the course of the disease, and the temperamental instability which is a feature of hyperthyroidism is peculiarly unfortunate in a teacher. Of my 16 cases one has died, one has left the service gravely ill, five have developed serious nervous instability, though the symptoms have improved, five are still seriously ill, and only four have done well. In less to be pitied—and certainly pities herself less—than some of these neurotics, whose wretchedness does not end with themselves One person can blight the lives of 60 children for a year and spread misery among her relatives and colleagues Yet both the *cure* and *prevention* of the neuroses are on a far less satisfactory basis than those of physical ailments Indeed in certain quarters an attempt to apply any other remedy than "rest and change of scene" is regarded as a species of black magic

A preliminary difficulty in dealing with neurotic patients is that the cause is often not recognised by the patient herself I have been very much struck by the fact that in all this series the severity of the breakdown was in inverse ratio to the alleged cause Where the teacher had collapsed as a result of some disaster (even the loss of a widow's only child, or a daughter seeing a beloved father killed before her eyes) she is back at work within a month—shaken, but able and anxious to carry on The only exception is an unhappy love affair Where the "cause" is vague or trivial, the prognosis is much more doubtful.

OVERWORK

Overwork is one of the commonest reasons for breakdown alleged by teachers or their doctors—often where the patient cannot by any stretch of imagination be held to be overworking The fatigue due to genuine overwork clears up rapidly with rest under good hygienic conditions, and does not entail absence of more than a few days or at most a few weeks I have searched energetically but cannot remember seeing a single case in training college, schools, or in the Services during the war of *serious* breakdown due to this cause Recently I have seen three women with severe neuroses who had in fact been working very hard All denied having worries or that they knew of any other possible cause for their illness Ultimately the first admitted that she had been reluctantly forced into teaching by a domineering mother, and was hankering after the occupation once followed by her father, and the second confessed that she had recently been sent from a school she loved to one she hated, "the work would have been nothing if I'd liked it" The third was seeking distraction from an unhappy love affair It is significant that I have never known a girl break down permanently in the preliminary stages of the teaching profession who had not already desired to give up teaching, usually for reasons financial or amorous

It will be found that what is called overwork is usually too *monotonous* work, or lack of recreation and emotional outlet Often this is not the teacher's own fault, as the single women sometimes find that relatives make enormous claims on their time and money, without any of the compensations accruing to the married man One lady had had upkeep of children imposed on her which would leave her without a spare penny for ten years The entire burden of elderly parents is a common factor in these cases Sometimes temperament rather than circumstance is to blame and a woman may be suffering from a misunderstanding of her own needs As one depressed lady in her late thirties remarked, she had been wasting her life at evening classes when she should have been learning to fox-trot Teachers as well as children must know how to play if they are to keep healthy Fortunately more attention is being paid in the women's colleges to this important item of mental hygiene

OVERSTRAIN

Overstrain at work is another factor very frequently blamed for breakdown but practical experience shows that it often masks much more significant events at home One elderly lady who arrived with this diagnosis in such a condition that it seemed unlikely she would ever work again finally admitted that a rascally relation had appropriated all her savings, and she had been afraid to tell anyone for fear he would be prosecuted She was referred to her solicitor, and a few months later was at work bright and smiling, the relative having been made to disgorge The lack of proportion shown is sometimes rather startling A noisy classroom was solemnly and exclusively blamed in an anxiety neurosis where a young married woman had deliberately decided that children would be an unnecessary interruption to a career.

PARENTAL FIXATIONS

Without entering into contentious theories of the origin of nervous conditions, it may be accepted that a person's attitude to authority and his own exercise of authority is very much determined by his attitude to his parents This is particularly true of the Peter Pan type of person who has never properly grown up, and maintains an infantile attitude to his relations Even on brief contact it is impossible not to be struck by the extreme childishness of some neurotics Some of them, even women of 40, will bring a parent into the room to speak for them, although they maintain they are cured and anxious to return to work A woman of nearly 30 is found to be sleeping of choice in the same bed as her mother; another woman of 55 says she cannot take the holiday her doctor suggests as she is "such a home bird," and has never left big sister! Nearly all this group (and it is a large one) have very similar school troubles which are commonly regarded as the cause rather than the effect of their mental condition To every difficulty (especially if it involves a clash of will with an older person) they can only oppose the weak ineffectual protests of a child, and a flight into disease is a natural escape from situations in which they find themselves powerless It is obviously very desirable to deal with these "parental fixations" as early in life as possible They ruin a woman's career (they are significantly rare in head teachers) and interfere seriously with her chance of marriage. The most tragic results, far too common among professional women, are seen in later life In old age parents need the support of a mature independent woman, not a clinging child, and they invariably despise and turn against the daughter who has never grown up, even if the situation should be of their own making

Teachers are more fortunate than most professional women in that they can have the necessary time and money to recover from a deep-seated neurotic illness They are doubly fortunate, however, if their medical attendant uses his tact and skill to discover an unsolved conflict or hidden terror behind the ostensible cause before ordering prolonged rest A teacher told me that she had gone to her family doctor very ill and miserable, and complaining of overwork, which she genuinely believed accounted for her symptoms As she did not improve in a week or *two off* duty he insisted on investigating further, and at last she confessed to a cancer phobia, born of family legends, and nourished by the anti-cancer propaganda of a well-known layman As she said, in a few minutes' talk her doctor relieved her of a load of torment, and saved her from *months* of illness I hope it is permissible to note here that the affectionate loyalty and appreciation of their doctor's services shown by these teachers goes far to disprove the gloomy rumours current as to the decline of the Family Doctor

CONCLUSION

The foregoing observations although based mainly on a study of teachers, would probably apply mutatis mutandis to women in other professions A comparison with domestically occupied women would be fallacious as involving the question of the effects of marriage As the number of married women teachers in the London service is steadily decreasing and as many of those still working are handicapped by special disadvantages, such as an invalid husband, I have omitted from this survey consideration of the effects of marriage on women's work But there seems to be *no* reason to think that employment in the brain-working occupations outside the home has any detrimental effect on women's

The Menopause

The last group of the special ailments of women is that associated with the menopause, a period to which enormous significance is attached. Indeed, every untoward experience between 40 and 55 tends to be related to this physiological change. There is no denying the importance of what is happening. As a necessary part of the general atrophy of the reproductive organs, which is the essence of the change, the ovarian secretion gradually ceases and the whole elaborate and closely interdependent system of endocrine glands has to readapt itself to an altered condition of affairs. It is obvious that where there is already a lack of harmony in the endocrine system, or where for some reason the general shrinkage is irregular in its course, physical and mental signs of lack of endocrine balance will appear. To the endocrine enthusiast, who sees the woman even more than the man as the plaything of her ductless glands, these simple physiological facts are enough to account for any conceivable phenomenon, and popular superstition once again finds itself supported by modern science. There seems to be no good reason, however, why the degenerative changes in the reproductive system should not be accomplished as smoothly and with as little constitutional disturbance as the coming of puberty in a healthy girl. It is reasonable to demand that the classification of a mental or physical abnormality as due to the menopause should be a question of evidence in each case and not a generalisation based on the patient's age.

The practice of loosely attributing every ailment to the menopause has two very common and disastrous results. (1) the real causal condition (mental or physical) is apt to be overlooked and left untreated, or if treatment is recommended the patient ignores the advice. Neglect of uterine hæmorrhage, due to cancer, is a common example, but much more frequent is the failure to apply rational treatment to the neuroses and psychoneuroses of middle life because of this obsession. Many such examples might be quoted from the series under survey. (2) A special menopause-phobia may be set up which aggravates any pre-existing mental or physical weakness, and may itself make the patient seriously ill. This often occurs when there is no physical evidence of the menopause at all. One woman has been putting forward "the change" as a cause of her numerous nervous breakdowns for eight years. Her periods are still perfectly regular, and she has no sign whatever of endocrine disturbance. In the worst cases this dread is the last thing the patient will acknowledge.

Many of the women now passing through the climacteric were reared in a bad tradition of physiological ignorance, and they have no means of repelling the alarming superstitions about sex functions which circulate orally. I have found a notion, for example, among elderly neurotics that if they pass through "the change" with no discomfort they must "pay for it" by a nervous breakdown later.

The true facts of the matter are very difficult to ascertain, but inquiry from the older patients in this series and from other professional women shows that the vast majority of women pass through the climacteric with no more than a passing discomfort, and little if any disturbance of work. Flushes, sweats, headaches, dizziness, and difficulty in mental concentration make up the usual syndrome, but many women seem to escape altogether. Only 12 cases in all my series had symptoms definitely to the menopause, and they made good recoveries in one to three months, except where there was a definite pre-existing neurosis. No case of insanity, even remotely associated with the menopause, has been traced in the 18 months covered by this survey, but pre-existing anxiety neurosis or neurasthenia are for obvious reasons liable to become worse at the climacteric. No woman can be expected to *like* such a concrete reminder that middle age is upon her, and those of unstable or imperfectly adjusted temperaments will inevitably find adaptation to this new phase of life a difficult matter. Of the "geyser-like eruption" of the emotions which is said to precede the physical signs, I have, however, been unable to discover any traces. As far as my observation goes, the neuroses due to emotional repression seem to be much more common in the middle thirties than the forties. One finds that cantankerousness and groundless suspicion are not the monopoly of any one age-period; it is true these characteristics tend to harden into definite delusions in the later forties, but that is true of men as well as women.

The following table will give some idea of the relation of age in women to neurotic conditions and to the menopause. The cases analysed are unselected, they comprise all teachers seen by me as absenting themselves from work on certificates of "nervous debility," &c., over a period of 18 months.

—	20–	30–	40–44	45–49	50–54	55–59
*Neuroses and psychoneuroses	42	56	30	35	30	31
Menopause	—	—	1	3	6	1

* No comparable figures exist for men.

It is interesting to note that the *total* absence due to "menopause and diseases of women" over a period of 15 years only amounted to an average of 0.13 day per year for each single woman and 0.24 day for each married woman, excluding pregnancy (Mr. J. Y. Hart).

Average days' illness per annum, 1904-19

Nature of illness	Men	Single women	Married women
Pulmonary, throat colds and influenza	2.08	3.50	3.91
Nervous and mental	0.58	1.43	1.98
Gastric	0.34	0.63	0.85
Rheumatism and synovitis	0.31	0.38	0.65
Infectious disease	0.18	0.33	0.28
Debility and anæmia	0.11	0.33	0.36
Heart	0.11	0.21	0.14
Ophthalmic	0.06	0.13	0.13
Dental	0.03	0.08	0.08
Menopause and diseases of women	—	0.13	0.24

There would in consequence seem to be no reason for the custom adopted by certain Government departments and large commercial houses of allowing their women employees one day's holiday a month. The practice adopted by a famous institution of getting rid of its women employees at 45 is equally unnecessary. These so-called concessions are very detrimental to the status of professional women.

Investigation of Nervous Symptoms

Of the *functional neuroses* my series contained 240 cases. These conditions are particularly common in teachers of both sexes, probably because of the constant strain on the attention and the enforced contact with many different personalities involved in teaching. Mr. Hart found that "nervous and mental conditions" were responsible for 12.8 per cent of the total absence on sick leave among men, 17.4 per cent in single women, and 17.2 per cent in married women. They entailed absences amounting to 0.58 day per annum for each man, 1.43 day for each single woman, and 1.98 day for each married woman over the 15-year period.

The 240 cases under survey included every form of neurotic and "mental" disturbance from slight fatigue and depression to certifiable insanity. No attempt at classification was made as acquaintance with most of the patients was necessarily too brief, though some were seen three or four times. Hysteria seems to be very rare, neurasthenia is most common, and anxiety neurosis a good second. I have been struck by the importance of nervous disease as a cause of unhappiness. The woman with inoperable cancer is process of absorption of a peritoneal or other animal ligature is to be found The interpretation of the appearances seen in our microscopical preparations of films from Ziegler chambers was greatly assisted by a study of papers [6] by Miss Greenwood Miss Greenwood's observations were conducted on living specimens of amœba proteus and actinosphœrium, and she was able to follow in these animals under the microscope all the visible phenomena of the ingestion of prey

> "The food most suitable to these forms is unshielded non-coagulated proteid matter A low degree of vitality, a diminished activity of the protoplasm renders an organism easier prey, more readily captured, and more readily absorbed Little monads, euglenæ, and algæ, co existing in the same water with amœba proteus, were by it ingested A fluid medium in the food vacuole of the amœba appears essential for the manifestation of primitive digestive activity The absence of a vacuole around ingested material may indicate that it is innutritious, and thus nutritive material may be distinguished from innutritive"

In the experiments of Sir Charles Sherrington and myself, successive immigrations of cells were observed to enter the Ziegler chambers The only cell which had a permanence of sojourn in the experimental chambers was the wandering connective tissue or plasma cell The place of amœba proteus and actinosphœrium was taken by the connective tissue cell, which may be described as a hot-house variety of amœba The connective tissue cell was observed ingesting in its food vacuole living prey—viz, a leucocyte or a red corpuscle It found its unshielded non-coagulated proteid food to perfection in the dead or dying leucocyte In some vacuoles the captured leucocyte or red corpuscle was more or less altered, but still perfectly easily recognised, while in others only a granular débris remained that furnished no sufficient clue as to its nature, but which seemed to be the remains of digested prey Clearly a proteolytic ferment is secreted in the food vacuole of the connective tissue cell, as it is in the food vacuole of amœba proteus Is it not probable that the wandering and fixed connective tissue cell can exert digestive action also upon material which it does not incept? Monads in Miss Greenwood's experiments which came to rest against the protoplasm of amœba proteus without being taken into the food vacuole became inert and dead, and were apparently acted on by the same agent as was present in the food vacuole She relates, too, the escape of a flagellate infusorian after contact for one hour with an actinosphœrium, and adds that its movements, after escape, were less rapid than usual Suppose a proteolytic ferment is secreted by the connective tissue cell from the surface of its protoplasm, and a leucocyte simply approximated to or partially embayed in the protoplasm, a gradual dissolution of the proteid of the leucocyte in the tissue plasma would occur, and this was observed

The number of instances in which there could be detected in the Ziegler chambers a wholly or partially included leucocyte would not account for the multitude of these cells that disappeared If, on the other hand, a proteolytic ferment is secreted from the surface of the connective tissue cell it makes clear what would otherwise be obscure, the absorption and substitution of organic ligature material, which is certainly not all dissolved in the food vacuoles of the invading cells It would also offer an explanation of the changes that occur in the microscopical appearance of a blood-clot, or of an organic material such as a ligature of catgut, tendon or peritoneum, within a week or ten days of being buried in living tissue At this period the foreign body is already surrounded by a countless number of phagocytic cells, some of which have commenced to invade it The outline of the cells of a blood-clot becomes obscure and the surface of a section of tendon, of catgut or peritoneal tissue tends to become more opaque and to lose all indication of structure long before the connective tissue cell is in actual contact with the parts so altered Obviously some chemical agent is at work, which is the more potent, and the more effective, in the initiation of the dissolution of the foreign body, the closer the foreign body is to the connective tissue cell There are many analogies supporting this view of the action of the connective tissue cell 1 All the known ferment-manufacturing cells pour their secretions into the world outside themselves 2 In the typical process of ossification the osteoblasts of Kolliker cause absorption of the walls of the primary areolæ by means of a secretion from their surface 3 The myeloplaxes of bone cause absorption of bone 4 The same thing occurs in rarefying osteitis In the three latter examples the cells are of mesoblastic or connective tissue origin

As the connective tissue cells increase in number in the Ziegler chambers they form cell-islets or colonies, which surround the stores of nutriment that is gradually dissolved and digested At first the shape of those cells, which are immediately next to the kernel of nutritious matter in the islet, is irregular, and suggests amœboid movement of the protoplasm of the cells, later, each cell becomes regularly fusiform, and is applied by its side to the material, which gradually disappears The captured food comes to be encircled by chains of fusiform cells set concentrically around it This is what happens when any foreign body, such as a ligature or a blood-clot, lies within a wound that heals over it The fusiform fibroblasts slowly exert the same solvent action upon the imprisoned material as did their amœboid ancestors No doubt the more easily affected portions of the material are the first to go into solution and disappear, leaving a constantly less amenable residue and a less nutrient one Perhaps it is in accordance with the decreasing supply of food that the cells, in contact with the residuum of food undergo a gradual change and lose their pristine elasticity of form. They assume the spindle shape, and a fibrillated intercellular cement substance comes into existence between them Much as amœba under adverse conditions assumes an encysted form so when food is scanty do the inherited tendencies of the fibroblast lead it into states of quietude or encystment Encapsulation, it is important to note, of a foreign body, such as a blood-clot or a ligature, is a stage in the process of absorption

For many years after catgut was reintroduced to the notice of the profession in 1869 by Prof Lister, then of Glasgow, it proved in the hands of many surgeons for various reasons unreliable in use Bryant, of Guy's, read before the Clinical Society on Oct 12th, 1877, a paper in which he reported the ligation of the external iliac, common carotid, right subclavian, and common femoral arteries with carbolised catgut. From our present-day knowledge the results were unsatisfactory but Bryant expressed his belief that "we have in the carbolised catgut the best ligature at our disposal" Callender, of St Bartholomew's, read a paper before the Clinical Society on Feb 8th, 1878, in which he recommended the use of tendon ligatures instead of catgut ligatures He writes: "Catgut occasionally fails to arrest the blood stream for a time sufficiently long to allow of the cure of the aneurysm, and this failure imperils the life of the patient" The kangaroo-tendon ligatures were sent to Callender by Hulme of Guildford, who had received them from Girdlestone, of Melbourne Callender says "that in tendon ligatures we possess a material which resists the solvent action of its surroundings in a wound longer than catgut. Its strength is sufficient, it ties better knots and the knots do not slip" He adds "As the supply of these tendons is distant I am having prepared ligatures which are made from the tendons of the horse They have much the same characteristics as the tendons from the marsupial"

In some cases the failure of the operation was not due to the catgut or tendon ligature employed Sir Thomas Smith [8] ligatured the common iliac artery with kangaroo tendon The next day pulsation was bodies or minds. They start with slight initial handicaps in the form of (*a*) a higher sickness rate than men in all forms of disease, (*b*) a liability to a special group of ailments of their own, (*c*) a tendency to age sooner and more suddenly than men. My conclusion, based certainly on impressions rather than on exact figures (which do not in fact exist), is that all these handicaps have been exaggerated and can be considerably reduced by improved hygiene. In the days of under-payment and restricted opportunities of work the hygiene of women was far inferior to that of men as regards clothes, exercise and diet. They have much leeway to make up especially as regards exercise and diet, but every year brings a demonstrable improvement. Education in the hygiene of the special ailments of women has hardly begun but is already making a substantial difference in reducing disability. Without undue optimism it seems reasonable to consider that preventive medicine has yet much to contribute to the problem of maintaining the physical efficiency of the professional woman.

---

[6] Ibid 1886 and 1887

[7] See Chapters 8 and 10 in Ligation in Continuity

[8] Trans of the Clinical Society, 1887

SOME EXPERIMENTS ON THE CONDUCT AND FATE OF A LIGATURE MADE FROM THE PARIETAL PERITONEUM OF THE OX

WHEN IMPLANTED IN LIVING TISSUE *

BY SIR CHARLES BALLANCE, K C M G, C B, M V O, M S LOND,
CONSULTING SURGEON, ST THOMAS'S HOSPITAL.

(*With Illustrative Plates*)

IN a volume [1] entitled "Ligation in Continuity," published by Mr W Edmunds and myself in 1891, the figures 129 and 130 represent the microscopical appearance of a peritoneal ligature after being applied respectively 14 and 55 days around the carotid of a horse (Figs 1 and 2).

Some three or four years previous to the publication of this book, when showing microscopical sections of kangaroo-tendon ligatures undergoing absorption to the then Sir Joseph Lister, he remarked "that the best material for an absorbable ligature was white fibrous tissue, and that the purest white fibrous tissue in the body was the peritoneum, he thought, therefore, that the best material for a ligature would be peritoneum, and that he had himself tried it, and with success, on the carotid artery of a calf."

Accordingly, we obtained from the butcher a large piece of the parietal peritoneum of the ox, it was fixed and stretched on a board, cut into strips, and twisted into ligatures, which were further prepared by immersion in solutions of chromic acid and carbolic acid. However, these home-made ligatures were not very satisfactory, and we asked Messrs Macfarlan, of Edinburgh, to prepare some for us, these ligatures were made in various sizes, and were from 18 to 20 inches long. Subsequently Messrs Macfarlan made peritoneal ligatures for us, not directly from the ox peritoneum, but from gold-beaters' skin, which is ox peritoneum beaten out thin. The peritoneal ligatures thus made resisted absorption for a somewhat longer time than kangaroo-tendon ligature of the same size.[2] The peritoneal ligature seems to satisfy all the tests of a perfect ligature when employed for the ligation of a large artery in continuity. Being of white fibrous tissue, it is of the same structure as the outer coat and sheath of an artery; it is strong, inelastic, round, smooth, pliable, can be made of any suitable size, is easily tied in a knot, is slowly absorbed, and is easily rendered aseptic.

When a ligature is absorbed it is replaced by new living tissue, there is no interval between the living material and the ligature. The arrangement of the fibres of the new tissue is influenced by the structure of the ligature, and the stages in which it has yielded to solution. As Lister explained, "the new tissue takes as a model the old and forms at its expense the old tissue is absorbed by the new, and as the old is absorbed new is put down in its place."

Lister noted too that a peritoneal ligature placed round the carotid artery of a calf,[3] and examined 30 days afterwards, appeared on casual inspection still to be in place but it was no longer the ligature that was visible encircling the artery, for by absorption and substitution it had been almost entirely transformed into a band of living tissue. This band had, indeed a deceptive resemblance to the former condition but on careful examination it was seen to be continuous in structure with the arterial wall. In the centre of the loop of living tissue was a remnant of the original ligature (so that in 30 days the process of absorption and substitution was as yet incomplete).

> "The fleshy material around the remains of the loop of the ligature proved under the microscope to be a most beautiful example of fibroplastic structure, the fibres which mainly constituted it being composed of large elongated cells with long processes. It appears, then that by applying a ligature of animal tissue around an artery we virtually surround it with a ring of living tissue, and strengthen the vessel where we obstruct it. The surgeon may now tie an arterial trunk in continuity close to a large branch, secure against secondary hæmorrhage provided always that he has so studied the principles of the antiseptic system, and so carefully considered the details of the mode of dressing, that he can feel certain of avoiding putrefaction in the wound. For my own part I should now without hesitation undertake the ligation of the innominate artery believing that it would prove a very safe procedure."[4]

In "Ligation in Continuity" (Fig 115, p 257) are figured two carotids of the ass ligated with kangaroo tendon. The specimens were obtained 67 days and 77 days respectively after the performance of the operations. The ligatures appear at first sight in place and unaltered, but on transverse microscopical section of the loops of the ligatures they are seen to be entirely replaced by young connective tissue, the dead tendon band being substituted by one of living fibrous tissue.

The question naturally arises as to the nature of the intimate processes of absorption of a peritoneal or other animal ligature. Such a ligature is a foreign body, and all foreign bodies which can be acted on by the living cells and fluids are absorbable, but the time required for absorption and substitution of different materials varies greatly. Silver wire and ivory pegs become pitted on their surfaces after a stay of a few months in the living body. The attack of the living cells on pure gold wire fails, as does also the attack of the body cells on a tracheotomy tube made of platinum. In a case of ligation of the external iliac artery with silk for femoral aneurysm it is interesting to recall what Lister found ten months later—

> "fragments of the ligature of various lengths, many of them greatly reduced in thickness. They had the appearance of being superficially *nibbled* so to speak, *confirming* the impression conveyed by the naked eye characters of the knot, that the silk had been eroded by the absorbing action of the surrounding parts. Indeed, considering the organic origin of silk, the remarkable thing seems to be, not that it should be absorbed by the living tissues, but that it should resist their influence so long."

In a paper published [5] by Sir Charles Sherrington and myself the key to the understanding of the is taking place, either within or without the capsule of fibrous tissue Where a portion of ligature has nearly or completely disappeared, there occurs a yellowish staining of the cells which afterwards disappears

---

* The Medical Research Council defrayed the expenses of this research, and the experiments were performed at the National Research Institute, Hampstead. The microscopical sections were cut and stained by Mr S P Steward at the Royal College of Surgeons of England, by the kind permission of Sir Arthur Keith.

[1] MacMillan, 1891.

[2] Ligation in Continuity, p 267.

[3] *Remarks on the Antiseptic System of Treatment in Surgery*, Brit Med Jour, April, 1869. Lister published a remarkable series of addresses under the above title in the same journal for 1867, 1868, 1869, and 1871.

[4] The truth of the statement made by Lister in 1869 has been proved, since that date, by the general experience of surgeons. The cases reported in two papers of my own confirm Lister's wonderful forecast. (1) *A Case of Ligation of the First Part of the Left Subclavian Artery*, Royal Army Medical Corps Journal, vol xxxi, 1918. (2) Cases of Ligation of the Innominate Artery, British Journal of Surgery, vol. x., 1921.

[5] Journal of Physiology, 1889.

Two methods of absorption are shown in Figs 24, 25, and 26 Fig 26 shows a fragment of ligature undergoing absorption within a giant cell, and Figs 24 and 25 show numerous cells encircling a fragment of ligature with certain clear spaces between some of the cells and the fragment of ligature These spaces probably contain the proteolytic ferment in a fluid medium, and if this is so, Miss Greenwood's dictum that "a fluid medium is necessary for the manifestation of primitive digestive activity" is fulfilled In the case of the giant cell (Fig 26) there is no visible space between the protoplasm of the cell and the fragment of ligature, but both in the case of the giant cell and in the other instances where the fragment of ligature is surrounded by many cells, the structure of the fragment of ligature has undergone a change, some parts of it seem not much altered, while in other parts clear spaces appear to exist These spaces indicate parts of the fragment which is already dissolved, and they may contain fluid and the proteolytic ferment

It is not at first easy to find in the sections a fragment of ligature undergoing absorption in a food vacuole of an individual cell In order to do this the granulation tissue in which absorption is actively taking place should be teased out in the fresh state and the cells fixed with osmic acid A few examples of this method of absorption have been seen and three such cells are shown in Fig 27 In some vacuoles a fragment of ligature could be identified, while in others only a granular débris remained that furnished no sufficient clue as to its nature, though the surmise that it is the remains of digested ligature is probably true Many cells have been observed in which the protoplasm was full of granules of varying size, difficult to see, which were not the granules of regular size normally present in the protoplasm In such cells no food vacuole was present, and the impression on the mind of the observer was that this was the last stage of the process of absorption, the food vacuole having given up the granular remains of the ligature to the surrounding protoplasm

In some situations close to a fragment of ligature undergoing absorption (see Fig 16—four weeks—Figs 18, 19, and 20—nine weeks—and Fig 23—13 weeks) the surface of the remains of the ligature when viewed under a high power is seen to be broken up into small islands surrounded by cells Outside these islands are a closely packed mass of cells with oval nuclei In the protoplasm of the cells are several refractile granules of varying size, distinct in some cells and indistinct in others These granules do not belong to the structure of the cell itself, and appear to be minute particles of some foreign body in process of dissolution

When all the ligature has been absorbed and replaced by the living cells, the latter lose their pristine flexibility of form, become spindle-shaped, and spin fibrous tissue The outline of the original dead material of ligature can be recognised by the shape and size of the fleshy mass of new living tissue which has been substituted for it

ABSORPTION EXPERIMENTS

These were carried out by passing the ligature through a portion of the muscle of the rabbit, the animal being anæsthetised with ether The ligature was tied with a reef-knot All the wounds healed by first intention Some experiments were done with catgut in order to contrast the time of absorption of this material with that of the ox peritoneum ligature

(a) List of Experiments with Catgut Ligature

Plain (not chromicised) catgut ligature	Animal killed at the end of—
1	1 week.
2	2 weeks
3	3 ,,
4	4 ,,

(b) List of Experiments with Ox Peritoneum Ligature.

Plain (not chromicised) ox peritoneum ligature	Animal killed at end of—	Chromicised ox peritoneum ligature	Animal killed at end of—
1	1 week	4	4 weeks
2	2 weeks	5	7 ,,
3	3 ,,	6	9 ,,
		7	13 ,,

The catgut ligature used in the experiments was No 4 size The ox peritoneum ligature used was No 4 size in Experiments 1 to 5 and No 8 size in Experiments 6 and 7

DESCRIPTIONS OF ILLUSTRATIONS

(SEE ILLUSTRATIVE PLATES AND FIGURES IN THE TEXT)

DRAWINGS ILLUSTRATING CERTAIN OLD EXPERIMENTS (Figs 1–3)

FIG 1 —*Ox peritoneum ligature* which had been applied for 14 days round the carotid artery of the horse (× 50) The ligature was made by Messrs Macfarlan, of Edinburgh, about the year 1887 The folds formed by the twisting of the membrane are seen separated by white spaces The side away from the artery is uppermost, and in this situation many cells have collected, absorption has commenced The fibrous structure of the ligature can no longer be seen (See "Ligation in Continuity," Fig 129)

FIG 2 —*Ox peritoneum ligature* which has been applied for *55 days round the carotid artery* of the horse (× 50) The ligature was made by Messrs Macfarlan, of Edinburgh, about the year 1887 The spaces between the folds into which the membrane was thrown in manufacture are seen as white streaks, and it is along them that on the side away from the artery that cell invasion is occurring. It is only on this side that absorption and substitution is actively proceeding The fibrous nature of this ligature can no longer be seen. (See "Ligation in Continuity," Fig 130)

FIG 3 —*Chromic catgut ligature which had been applied for three days round the carotid artery* of a sheep (× 90) The operation was performed at the Pathological Institute at Leipzig in the summer of 1884 The microscopic sections were cut and mounted in the autumn of that year at St Thomas's Hospital The actual section from which the above drawing was made is beautifully preserved (1925) In the lower part of the drawing the arterial wall under the knot of the ligature is shown, but it does not appear in the section from which this drawing was made It is copied from a drawing of another section in order to complete the picture of the ligation of the artery

The villi of the mucous coat of the sheep's intestine, from which the ligature was made, are clearly seen, as are also the fissures formed by the twisting of the gut A dense mass of cells are collected on the side of the ligature away from the artery The tension between the arterial wall and the side of the ligature next to it interferes with the cellular invasion in this region

DRAWINGS ILLUSTRATING THE STRUCTURE OF CERTAIN LIGATURES (Figs 4–11)

FIG 4 —*Ox peritoneum ligature* (× 100) made from wide strips of tissue The ligature consists of pure white fibrous tissue The section looks like a section of a fibroma. The folds formed by twisting the membranes in manufacture are few in number and are separated by white streaks

FIG 5 —*Ox peritoneum ligature* (× 100) made from narrow strips of tissue The ligature is composed of pure white fibrous tissue The folds formed in manufacture by twisting the membranous strings are numerous, and are seen separated by white streaks

FIG 6 —*Portion of ox peritoneum ligature, seen in Fig 4, more highly magnified* (× 160) The section shows in detail the fibrous structure of the ligature

FIG 7 —*Gold-beaters' skin ligature* (× 100) This ligature (No 2 size) was made by Messrs Macfarlan of Edinburgh, about the year 1888 It was sent to me in a bottle containing carbolic oil, and has remained in this medium ever since (1925) Gold-beaters' skin is made from ox peritoneum and the structure of gold-beaters' skin ligature is, therefore, white fibrous tissue, compare with Fig 4

FIG 8 —*Portion of gold-beaters' skin ligature* Seen in Fig 7, more highly magnified (× 160) Compare with Fig 6 The section shows in detail the fibrous structures of the ligature

noticed to have occurred He attributed the looseness of the loop of the ligature to the first part of the reef-knot slipping before the second part was completed Thus, although the knot was secure, the loop was loose, this, too, was no doubt what occurred in other cases

In Bryant and Callender's time the manufacture of the catgut ligature was unsatisfactory, and the nature of the process of absorption of an animal ligature was not clearly comprehended Even as late as 1890 I found, on examining microscopical sections of catgut obtained from various sources, that they showed the presence of the villi of the small intestine (Fig 3), though Lister had directed that the mucous membrane of the sheep's intestine should be removed by mechanical means before the material was cut into strips, and twisted into a thread of surgical catgut Recently, in examining microscopical sections of catgut kindly supplied to me by Mr Merson, of Edinburgh, I found that the appearance of the sections did not correspond with the appearance of the sections of ox peritoneum ligatures also supplied by Mr Merson The difference is probably due to the presence in the catgut ligature not only of fibrous tissue but also of muscular tissue During the Great War whenever I had the opportunity of ligating one of the large arteries I employed kangaroo-tendon ligatures (Van Horn) (tendon is a form of white fibrous tissue) tied with a stay-knot, and in every case success was attained

I am informed that it is increasingly difficult to obtain kangaroo tendons, they are now used for other purposes than surgical ligatures Hence, I think Lister's peritoneal ligature might well replace the use in surgery of kangaroo tendon A study of the figures illustrating this paper shows that the peritoneal ligature is particularly well adapted for this purpose, especially if chromicised, which process delays the absorption of the ligature and is in no way surgically disadvantageous

Mr Merson kindly had some ox peritoneum ligatures prepared for me They were of various sizes from No 00 to No 8 and were either plain or chromicised as follow 1 *Plain ligatures prepared from the tissue in its natural state unhardened in any way* whatsoever 2 *A* ligatures—chromicised—prepared from broad strips of peritoneum tissue ¾ to 1 inch in width 3 *B* ligatures—chromicised—prepared by twisting a number of very narrow strips of tissue ⅛ to ¼ inch in width

Mr Merson writes that "he is quite prepared to find that *B* strings made from very narrow ribbons of tissue will break down more readily than those made from broad strips" It was to be expected that with many more channels leading into the interior of the ligature, formed by the twisting of several narrow strips of tissue, that the invading cells would have greater facilities for reaching the interior of the ligature In this way the ligature is split up into little islands which are encircled by cells, so that absorption and substitution is much facilitated

On the other hand, when the peritoneal ligature is made from broad strips of tissue the result is that absorption takes place mainly from the surface as it does in the case of kangaroo tendon A chromicised ox peritoneum ligature of suitable size, made from broad strips of membrane, appears to be a perfect ligature for the ligation of a large artery in continuity, or for use in the operation for the radical cure of hernia There are many other operations in which the ox peritoneum ligature either plain or chromicised, might be usefully employed, seeing that this ligature resists absorption for a somewhat longer period than catgut It appears to me that ox peritoneum ligature of all sizes and for all purposes is superior to catgut, it is composed of one tissue and one tissue only—white fibrous tissue; but unless made in large quantities it would be probably more expensive than catgut

To conclude, this research gives support to the opinion expressed by Lister long ago that the best ligature material is peritoneum, and is published as a humble tribute to the immortal memory and genius of the Master

THE ABSORPTION OF THE OX PERITONEUM LIGATURE AS SHOWN IN THE DRAWINGS AND FROM THE STUDY OF THE MICROSCOPICAL SECTIONS

When an artery is ligated the attack of the invading cells on the ligature is at first, and, indeed, for a long period, confined to that surface of the ligature which is farthest from the arterial wall This is due to the tension of the structures within the loop of the ligature (see Figs 2 and 3) The same fact has been observed in the experiments in which within the loop of the ligature was compressed not an artery but muscular tissue (see Fig 18)

The anatomical features of plain and chromicised ligatures when observed under the microscope are identical Chromicised ligatures and those made from broad strips of membrane resist absorption for a much longer period than plain ligatures and those made from narrow strings

The multitude of cells which collect around the ligature is a striking and early manifestation of the reaction of the tissues to the presence of a foreign body in their midst The cells enter the cracks and fissures of the ligature, when these exist, and divide it successively into small islands As absorption of the fragments of ligature proceeds the columns of cells within the cracks and fissures widen, and as the dead tissue disappears living tissue is put down in its place At last the fragment of the ligature is completely dissolved and its place is occupied by cells which, having completed their duty and destiny, become elongated, and spin fibrils of connective tissue

The cells, while actively engaged in the warfare against the ligature, are of all shapes, their protoplasm giving the appearance of amœboid movement The nuclei of the cells are generally oval in outline, indicating their descent from connective tissue corpuscles A group of cells surrounding the main mass of the ligature assume a spindle shape This capsule of young fibrous tissue is not wide but it shuts off the dead tissue from the rest of the body Within it absorption of the surface of the ligature proceeds Some three or more weeks later it can be observed that some unabsorbed fragments of the ligature are outside the capsule of fibrous tissue so that absorption of the surface of the ligature has taken place in an irregular manner The capsule becomes smaller as the enclosed mass shrinks in size The surface of the ligature has resisted absorption in some places for a longer time than in others It would seem that as the ligature is absorbed certain cells within the encircling band of fibrous tissue enter the resting stage and form fibroblasts, while the outer layers of spindle cells of the band of fibrous tissue resume an active life, being stimulated thus to act in consequence of the presence of unabsorbed fragments of ligature outside the encircling band of young fibrous tissue Thus, as the mass of ligature shrinks in size, the fibrous capsule still remains in contact with it, the capsule of the ensheathing fibroblasts diminishing in diameter as the foreign body is absorbed On the other hand, in those instances in which absorption of the ligature mainly takes place by the action of the cells which penetrate into its interior, the original circle of fibrous tissue remains in place and forms the outer limit of young fibrous tissue which is substituted for the ligature

The tissue outside the capsule of fibrous tissue when there are unabsorbed fragments of ligature in this situation is composed of a numerous army of active single cells, giant cells, and a great number of newly formed capillaries The vascularity of this tissue is a necessary part of the process of absorption for the dissolved material of the ligature must ultimately be carried off by the blood stream and by the lymphatics, and, further, it is from the blood that the cells obtain materials for their sustenance and for the manufacture of a proteolytic ferment Giant cells are numerous wherever active solution of the ligature

SIR CHARLES BALLANCE: PERITONEAL OX LIGATURES AND LIVING TISSUE.

FIG 1

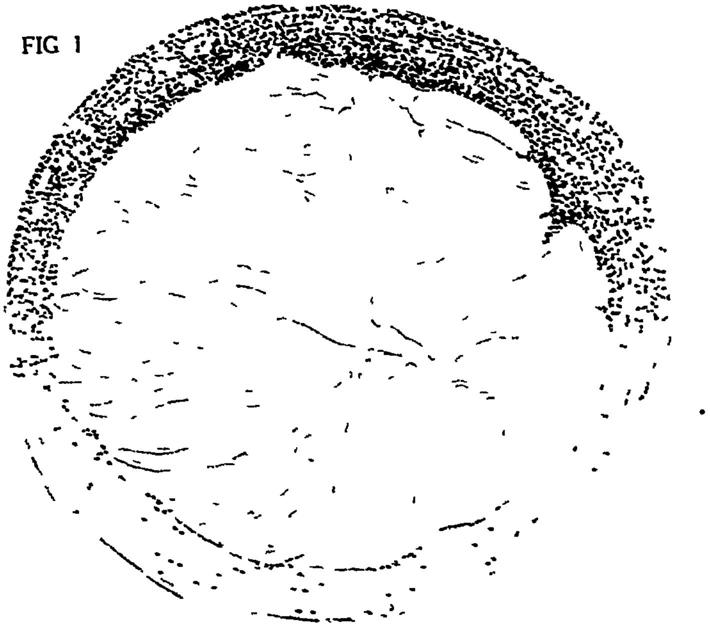


FIG 4

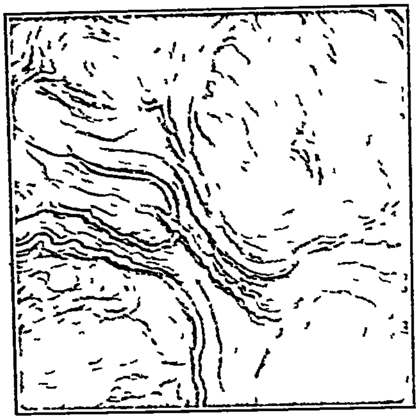


FIG 5

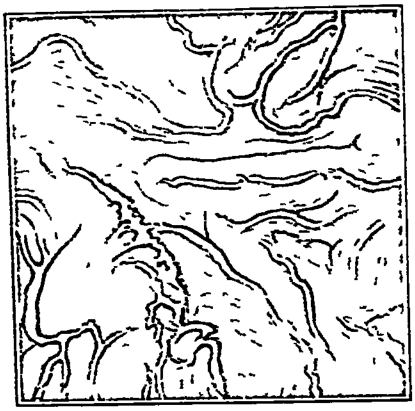


FIG 2

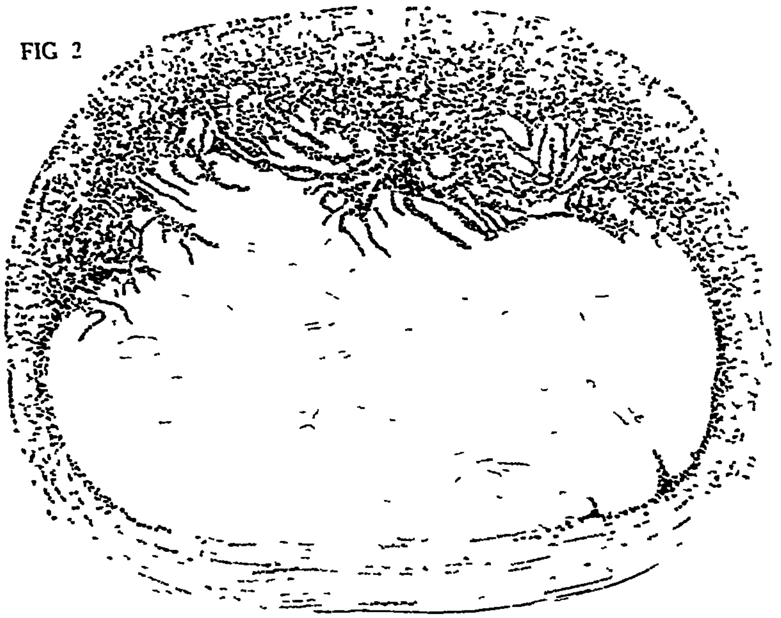


FIG. 6

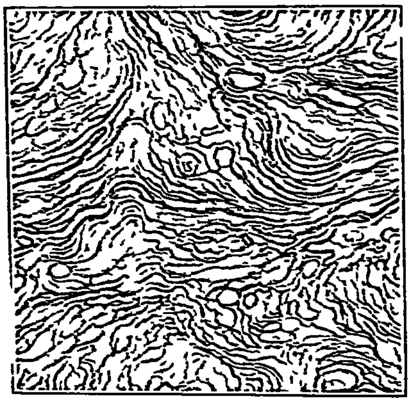


FIG 3

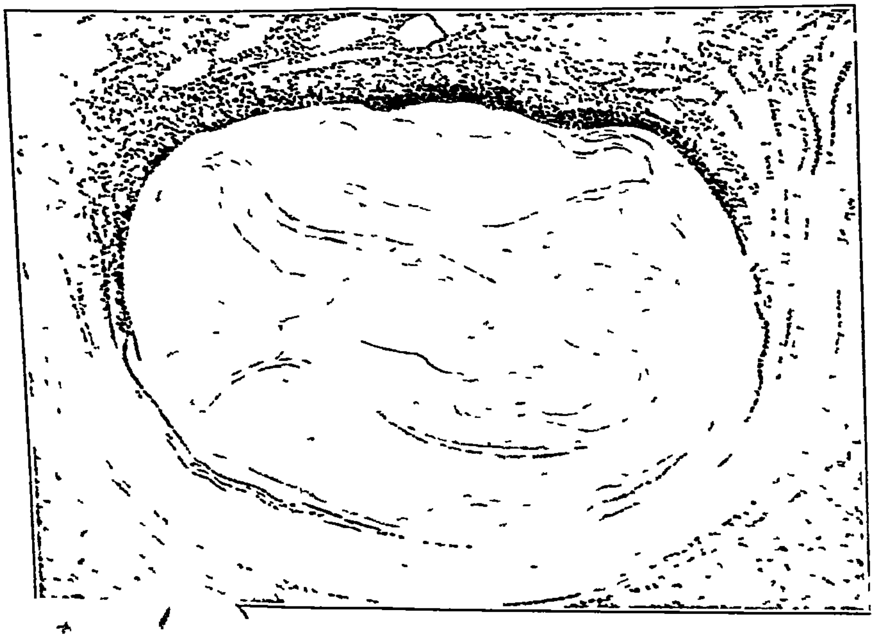


FIG. 7

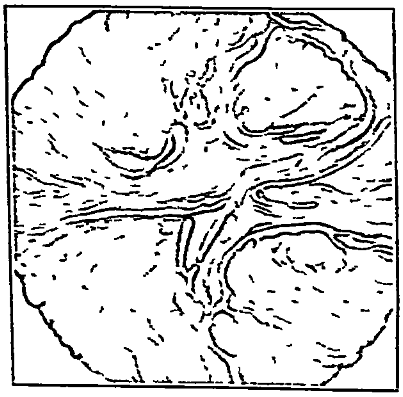


FIG 9 —*Kangaroo-tendon ligature*, medium size, Van Horn (× 160) A tendon consists of bundles of white fibrous tissue with chains of cells The cells partially ensheath the bundles of fibres and are connected by a network of branched processes The structure of tendon is well seen in the section

FIG 10 —*Portion of catgut ligature* Merson (× 160) Made from narrow strips of tissue The ligature does not appear to be made up, as is ox peritoneum ligature, of fibrous tissue only Under a one-twelfth oil-immersion lens no markings indicative of muscular tissue are visible, but there can be seen faint longitudinal striations which may be due to the presence of fibres of the longitudinal muscle coat as well as of the fibres of the peritoneal coat of the gut. The curious angular markings on the section may possibly have been caused by the scraping process employed to get rid of the mucous membrane of the gut during the process of manufacture as originally directed by Lister

FIG 11 —*Portion of chromic catgut ligature*, size No 3, Van Horn (× 160) The structure of the ligature appears homogeneous It is not possible to identify under the microscope either the fibrous or muscular coat of the sheep's intestine There are no longitudinal striations

DRAWINGS ILLUSTRATING THE ABSORPTION OF THE OX PERITONEUM LIGATURE (FIGS 12–23)

FIG 12 —*Catgut ligature* (plain, not chromicised), showing absorption after one week (× 38) Made from narrow strips of tissue Note the cellular invasion and the absorption of the ligature already occurring, especially along its lower border

FIG 13 —*Ox peritoneum ligature* (plain, not chromicised), showing absorption after one week (× 38) Made from narrow strips of membrane Note the outline of the ligature is more distinct than the outline of the catgut in Fig 12, in which absorption is more advanced The invading cells are advancing into some of the cracks and fissures The fibrous structure of the ligature cannot be made out

FIG 14 —*Ox peritoneum ligature* (plain, not chromicised) (× 38), showing absorption after three weeks Made from narrow strips of tissue Note the cellular penetration and absorption of the ligature along the edges of the numerous folds caused by the twisting of the strips of membrane in manufacture The active cells invading the ligature take a deeper stain than those surrounding and encapsulating it As absorption proceeds the channels in the ligature become wider, the dead ligature material being replaced by living cells

FIG 15 —*Catgut ligature* (plain, not chromicised) (× 50), showing absorption after four weeks Made from narrow strips of tissue Note the great cellular proliferation and the almost complete absorption of the ligature

FIG 16 —*Ox peritoneum ligature* (chromicised) (× 60), showing absorption after four weeks Made from wide strips of tissue Note the cellular invasion from the surface of the ligature The outline of the drawing indicates nearly the size of the original ligature, its outer surface having been absorbed and substituted by living tissue The fibrous structure of the ligature cannot be made out The breaking up of the outer surface of the ligature into little islands surrounded by cells is well seen Contrast with Figs 14 and 17

FIG 17 —*Ox peritoneum ligature* (chromicised) (× 38), showing absorption after seven weeks Made from narrow strips of membrane Note the slower absorption of the ligature as compared with the ligature illustrated in Fig 14 The interior of the ligature is being divided up into small islands Each island is in part or wholly surrounded by the invading cells This makes more easy the process of absorption Compare with Fig 16 and note the scheme of absorption is different in the two experiments

FIG 18 —*A sagittal section through the ligatured muscle and through the knot and loop of the ligature of* chromicised ox peritoneum ligature (× 20)—nine weeks The ligature was made from broad bands of membrane The muscle included in the ligature is strangled and dead Cells are invading the dead muscle from each side, but the tension between the muscle and the side of the loop of the ligature next to it has interefered with the cellular invasion in this region There is still much dead muscle to be absorbed The external half of the loop of the ligature in the lower part of the drawing has been absorbed, and the upper half of the corresponding portion of the ligature under the knot shows about the same amount of absorption The remnant of the knot is visible as numerous fragments of ligature surrounded by an innumerable army of attacking cells *E* is the site of high power drawing of Cells 2 and 3 in Fig 27

FIG 19 —*A horizontal section through the middle of the loop of the ox peritoneum ligature* seen in the lower part of drawing Fig 18 (× 38)—nine weeks In the main the ligature is being absorbed from the surface The original size of the ligature nearly corresponds to the oval area shown in the drawing In the mass of cells immediately surrounding the ligature are numerous capillaries, fragments of ligature as yet unabsorbed, and many giant cells containing in their protoplasm or surrounding with the help of other cells portions of ligature in the process of absorption, but these details require a higher power (Zeiss D lens) to be observed The yellow bands of material in the right lower portion of the drawing may be muscular fibres being absorbed *B* is the site of the high power drawings Figs 24 and 25

FIG 20 —*A horizontal section above the middle of the remains of the knot of ox peritoneum ligature* seen in the upper part of the drawing Fig 18 (× 38)—nine weeks The drawing shows two fairly large portions of ligature in the process of absorption from the surface In the mass of cells are seen a great number (with a higher power) of fragments of ligature in the stage of active absorption and substitution by the cells Only the larger fragments are visible in the drawing Giant cells are to be seen also with a high power dotted about among the army of single cells In this case the knot was probably not tied tight, hence the invading cells were able to reach its interior and attack the strands, of which the knot is made up, separately *C* is the site of the high power drawing Fig 21 *D* is the site of the high power drawing of Cell 1 in Fig 27

FIG 21 —*High power drawing of fragments of ox peritoneum ligature* seen at *C* in Fig 20 within the fibrous capsule (× 200)—nine weeks Fragments of the ox peritoneum ligature are seen surrounded by a multitude of single cells and a few giant cells Absorption is taking place

FIG 22 —*Section through the knot of a chromicised ox peritoneum ligature* (× 30)—13 weeks The ligature was made from broad bands of membrane The drawing shows that absorption has taken place from the surface, the cells having been unable to penetrate between the various strands of the knot, as is seen in drawing Fig 18 Below, the immense cellular invasion extends as far as the muscle, but above, the granulation tissue was broken off in making the section The amount of absorption already effected is considerable The tissue of the knot extended half-way at least to the muscular tissue in the lower part of the drawing, and it is probable that the same amount of substitution of living tissue for the material of the ligature has occurred in the whole circumference of the knot In the vascular tissue stained blue outside the surviving portion of the knot are to be seen in this drawing many lighter areas which represent fragments of ligature that have as yet escaped solution Under a higher power these fragments of unabsorbed ligature are very numerous, and giant cells and capillaries are visible around them The remnant of the knot is surrounded closely in most places by a narrow band of young fibrous tissue No evidence of fibrous structure can be detected in the unabsorbed portion of the ligature

FIG 23 —*A section through the granulation tissue surrounding the unabsorbed portion of the knot of ox peritoneum ligature* seen in Fig 22 (× 38)—13 weeks In one place a considerable portion of ox peritoneum ligature is seen undergoing absorption It may be that this is one of the free ends of the knot of the ligature The rest of the drawing of this section shows very numerous fragments of ligature not yet absorbed Under a higher power giant cells and single cells containing fragments of ligature can be observed and numerous capillaries The whole area of the drawing was obviously originally occupied by the ox peritoneum ligature of the knot *A* is the site of the high power drawing Fig 26

DRAWINGS ILLUSTRATING THE INTIMATE PROCESS OF ABSORPTION OF OX PERITONEUM LIGATURE BY GROUPS OF CELLS, BY A GIANT CELL, AND BY SINGLE CELLS (FIGS 24–27)

FIG 24 —*A fragment of ox peritoneum ligature encapsuled by young fibrous tissue and undergoing absorption* (× 750)—nine weeks Within the capsule in the lower part of the drawing is seen a giant cell, and many clear spaces are visible which may contain a proteolytic ferment in a fluid medium This would explain the slow dissolution of the fragment of ligature which is homogeneous in

FIG. 16

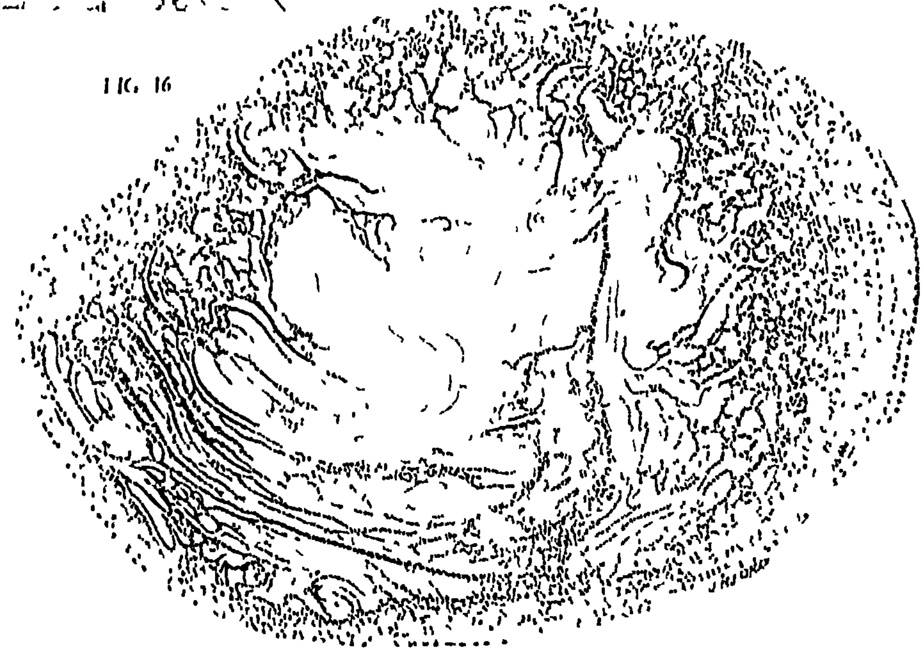


FIG. 17.

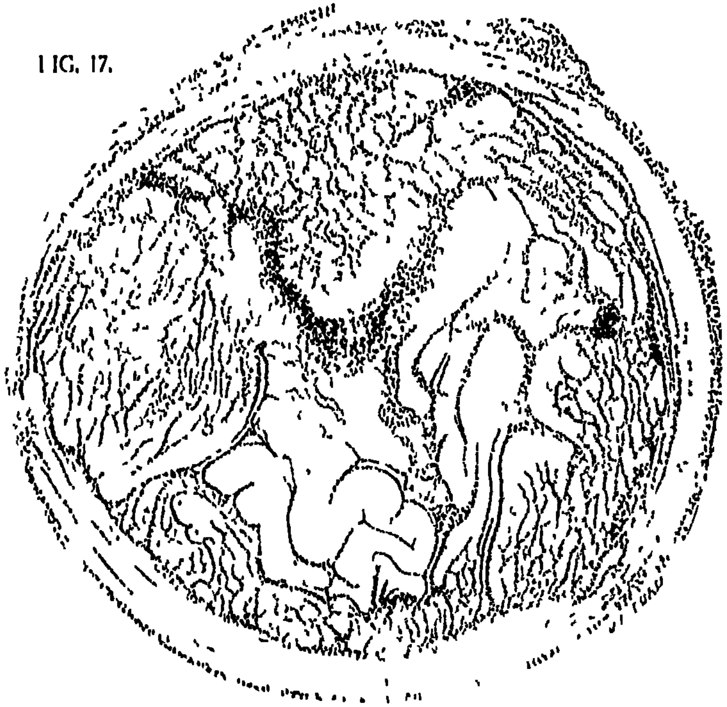


FIG 18

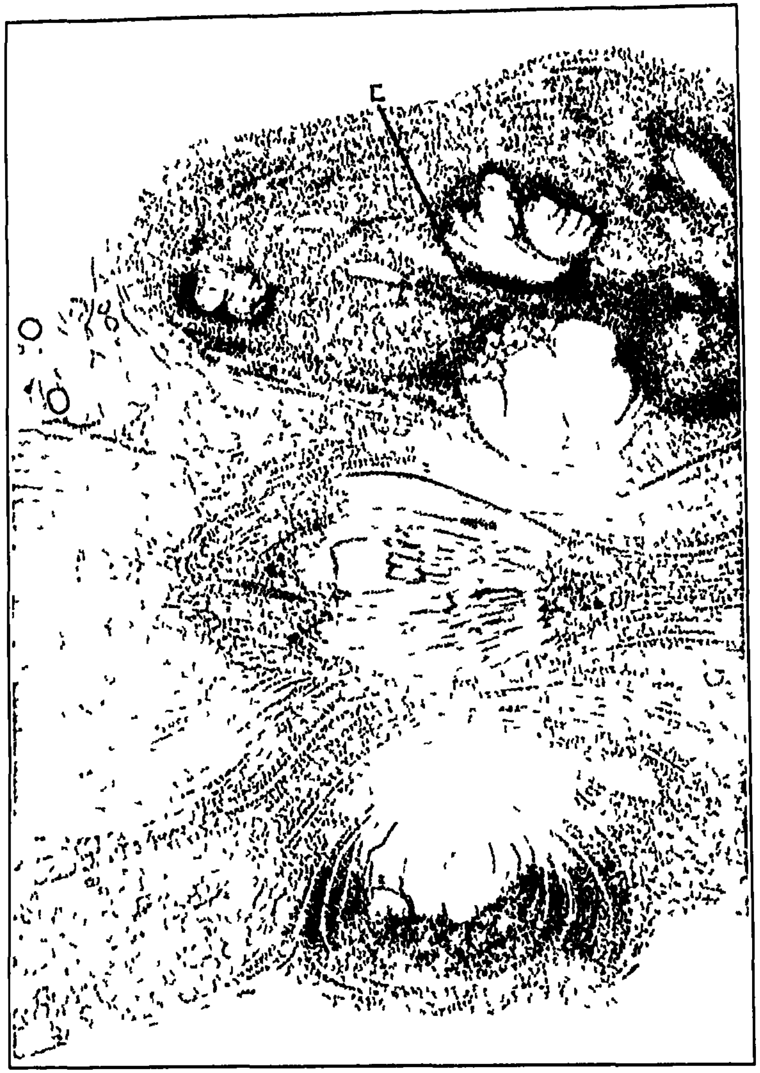


FIG 8

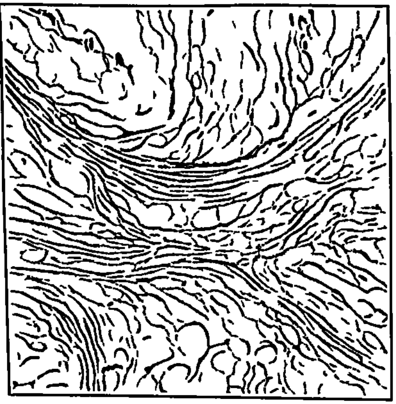


FIG 9

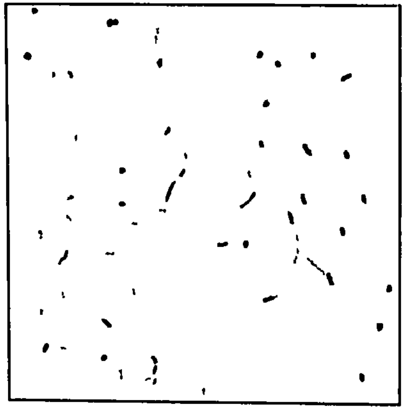


FIG 10

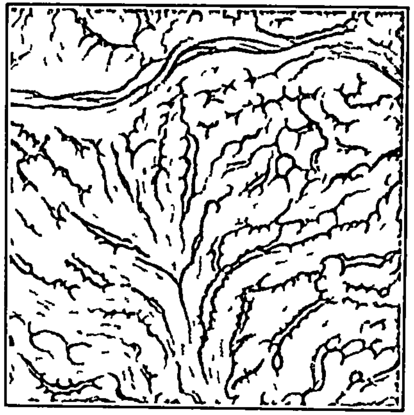


FIG 11

FIG 12

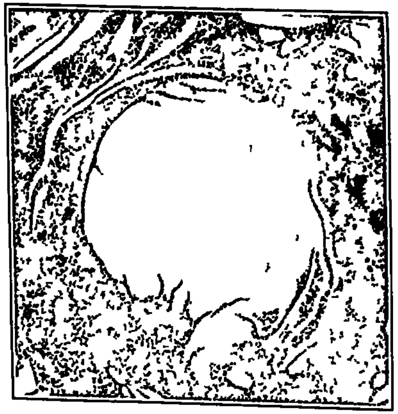


FIG 13

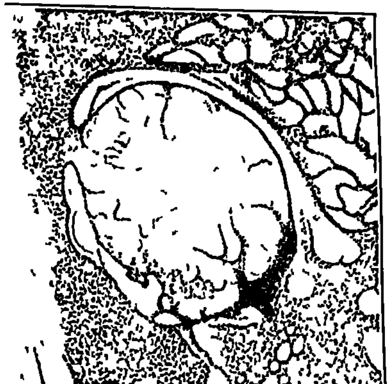


FIG 14

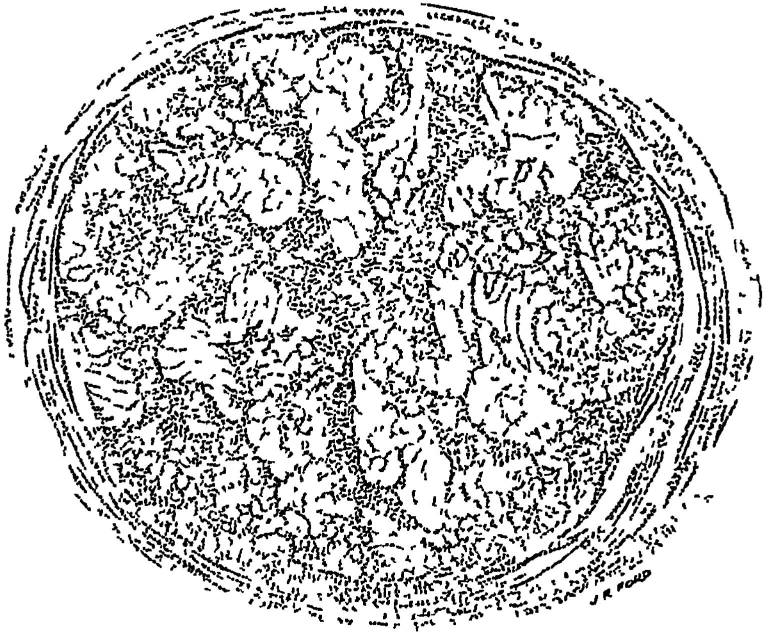
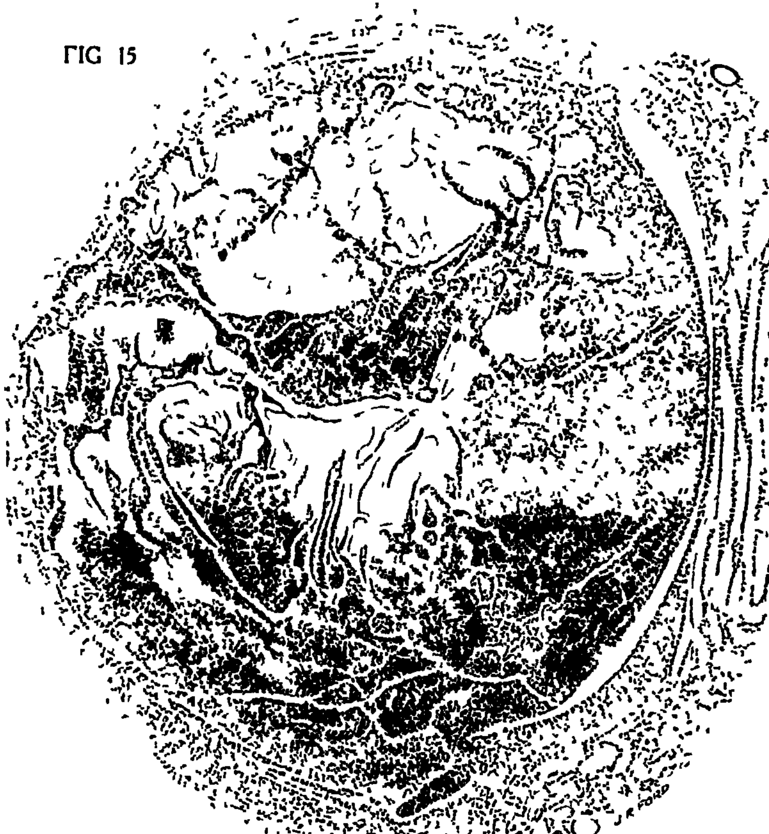


FIG 15



appearance and has lost its typical structure The drawing is taken from a spot in Fig 19 marked *B*

FIG 25 —*A fragment of ox peritoneum ligature encapsuled by young fibrous tissue and undergoing absorption* (× 750)—nine weeks Within the capsule in the lower part of this drawing is seen a giant cell, and several wide clear spaces are seen external to the fragment of ligature They may contain a proteolytic ferment (secreted by the cells) in a fluid medium This would explain the absorption of the ligature material The lower part of the fragment of ligature still seems to show some faint signs of structure, but this is probably fallacious, the appearances being caused by the lines of absorption The upper part of the fragment is quite structureless A light area of absorption is visible around a cell which seems to have embayed itself in the substance of the ligature The drawing is taken from a spot in Fig 19 marked *B*

FIG 22

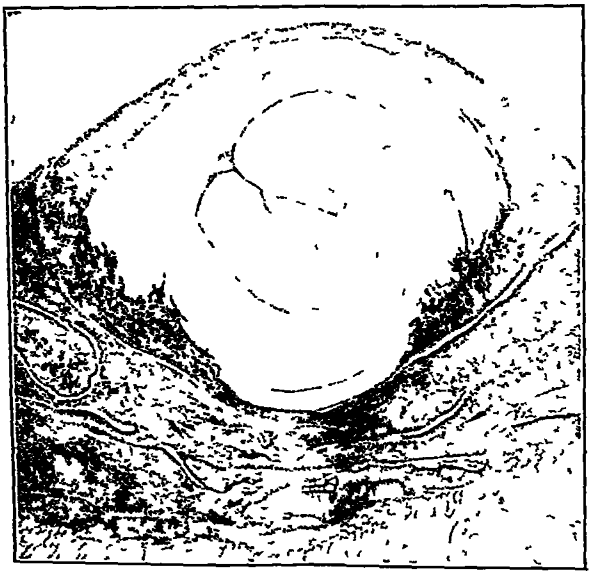


FIG 26 —*A giant cell containing in its protoplasm a fragment of ox peritoneum ligature* (× 750)—13 weeks The protoplasm of the cell is in close contact with the fragment of ligature (*a*) Several light areas crossing the fragment can be seen where absorption has taken place They may contain the ferment in a fluid medium, hence the non-necessity, at this stage, of absorption occurring in a "vacuole" All trace of the fibrous structure of the ligature material has been lost The drawing was made at the place marked *A* in Fig 23

FIG 23

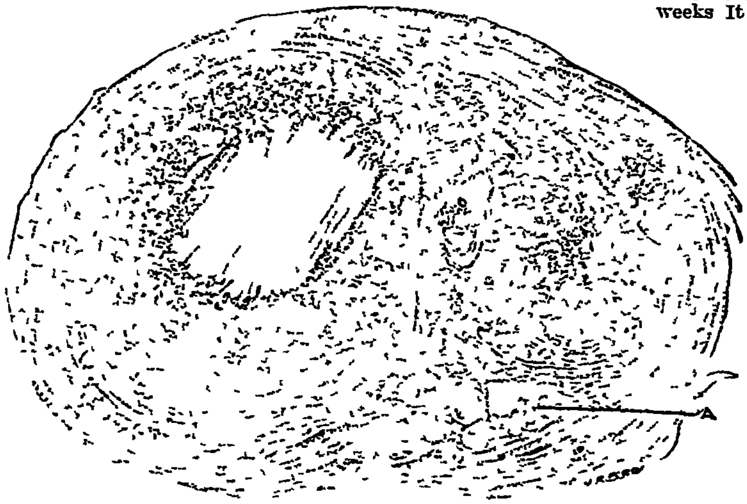
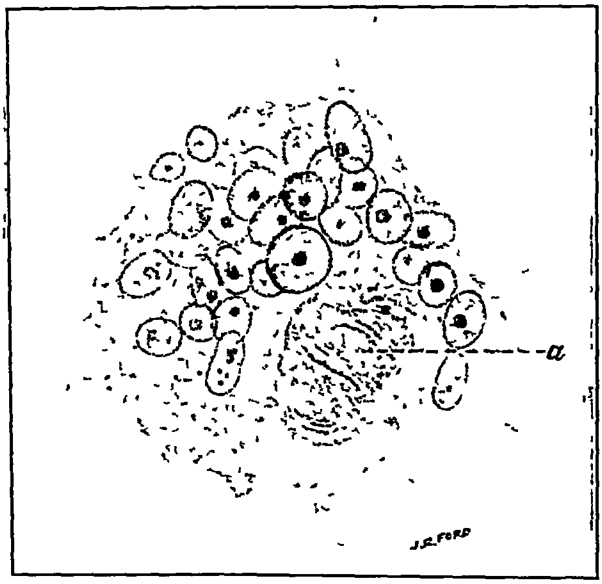


FIG 27 —*Cells digesting ox peritoneum ligature* (× 1100) (I think this is a fair statement, as the ligature is the only material nearby, with the exception, perhaps, of a stray leucocyte or red corpuscle, which the cells could attack and ingest)

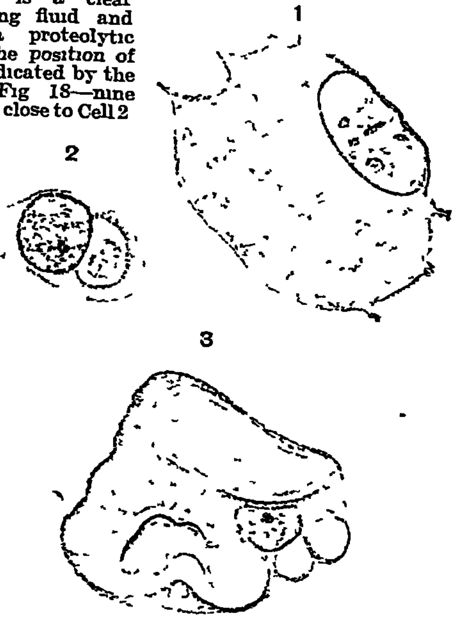
FIG 26



1 *A cell with many small fragments of partly dissolved ligature* in its protoplasm. There is no food vacuole visible, possibly it has completed its labours and shed the debris of the digestive process into the surrounding protoplasm. The position of this cell is indicated by the letter *D* in Fig 20—nine weeks

2 *A cell in the protoplasm of which can be seen a food vacuole containing the remains of a fragment of ligature* Around the fragment is a clear space containing fluid and presumably a proteolytic ferment The position of the cell is indicated by the letter *E* in Fig 18—nine weeks It lies close to Cell 2

FIG 27



3 *A cell in the protoplasm of which are two food vacuoles* In each vacuole is a fragment of ligature as yet not completely digested Around each fragment is a clear space containing fluid and presumably a proteolytic ferment The position of this cell is indicated by the letter *E* in Fig 18—nine weeks

FIG 19

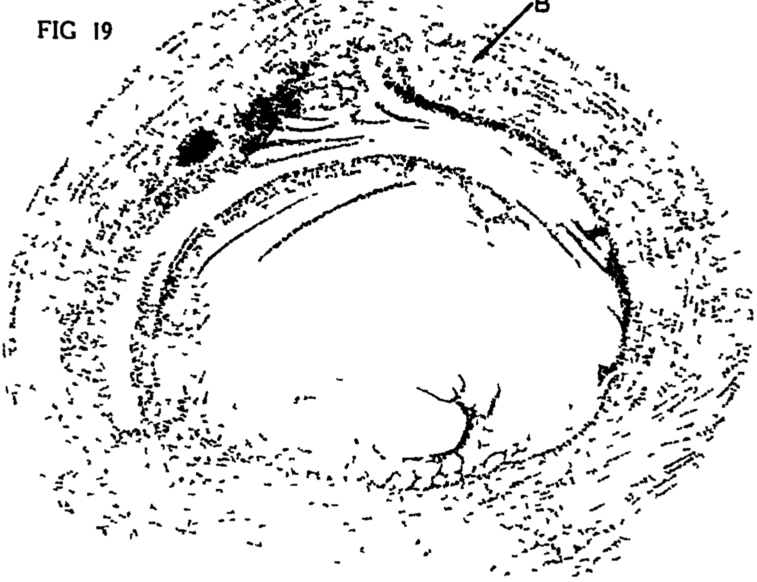


FIG 20

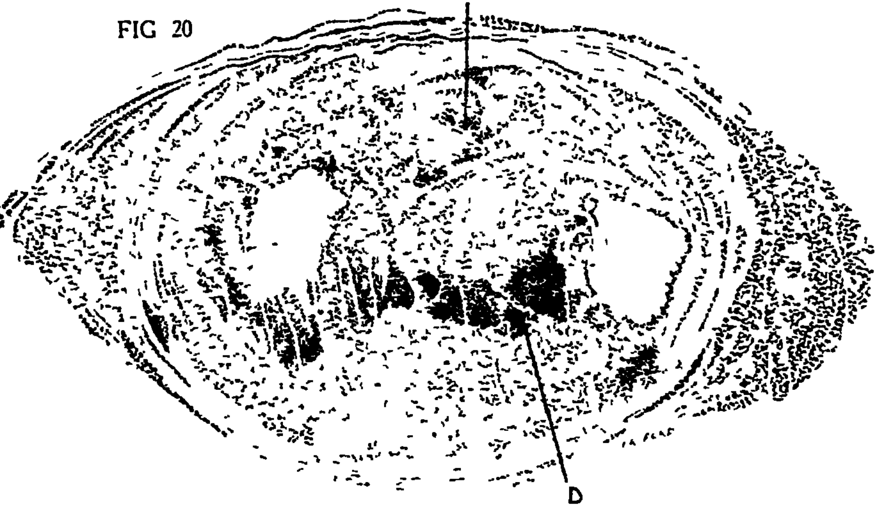


FIG 21

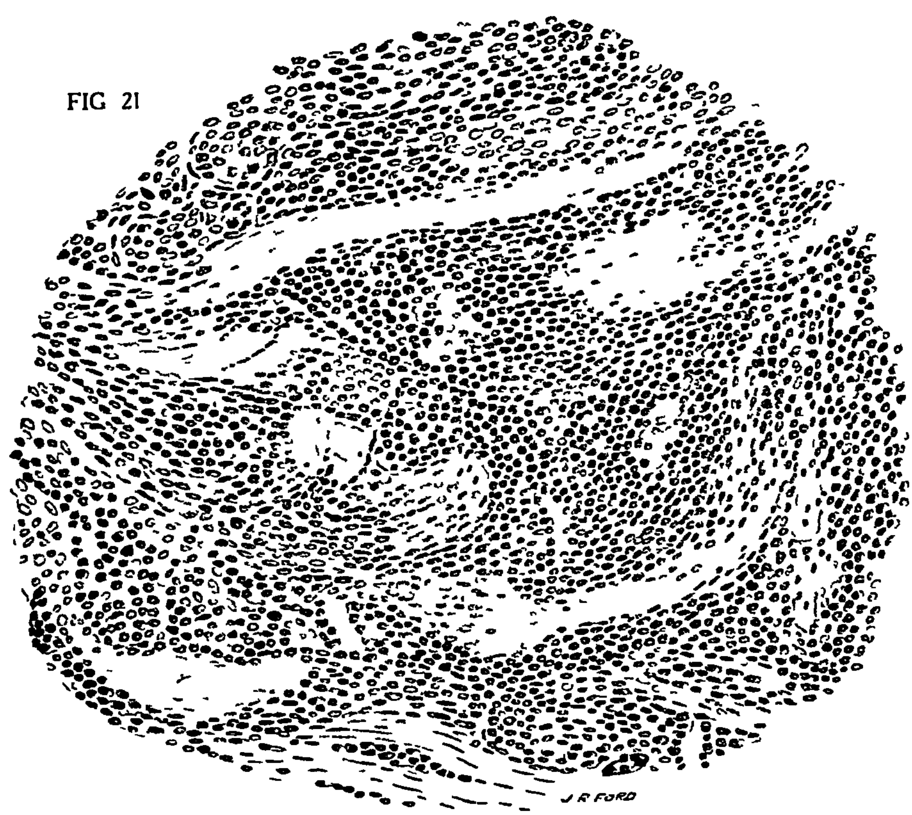


FIG 24

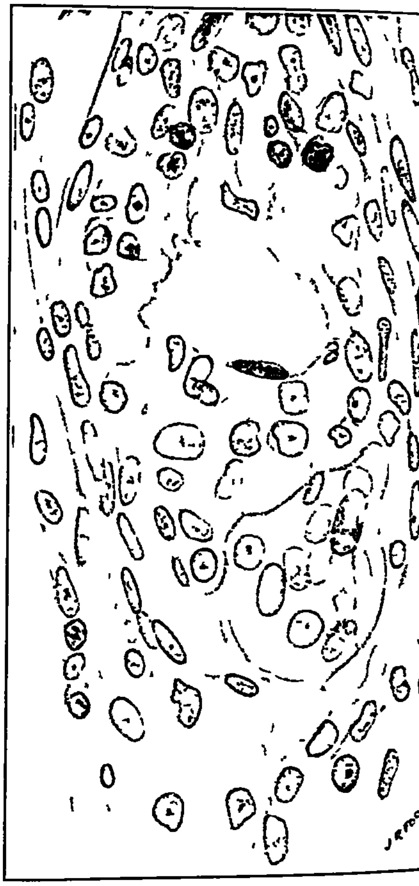
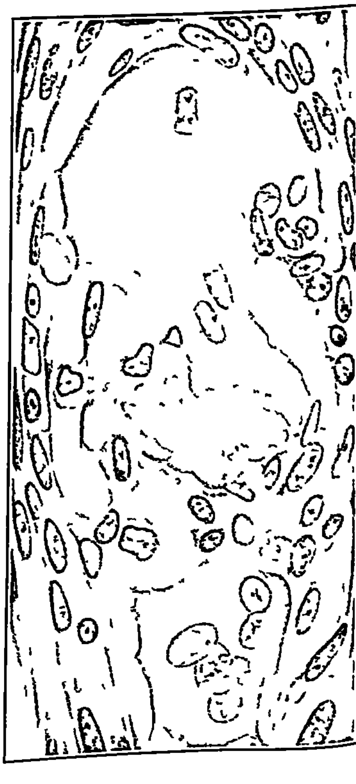


FIG 25



ability, but after exposures of the light-adapted eye to high intensities of white or coloured light, the excitability to that light is diminished and that to the complementary colour is enhanced by the process of induction. None of these effects can fairly be called pathological. Prolonged and intense exposures, however, produce changes which, if not definitely of this nature closely border upon it (Burch), and may be taken to indicate a "physiological fatigue," using the term without prejudice, while, by measuring the critical frequency for the elimination of flicker Grunbaum has brought forward evidence of a true "optical fatigue." These, however, are only extreme experimental cases, and for all practical purposes retinal fatigue does not exist, and the ordinarily visible spectrum may be taken as exerting no pathological effect upon the physiological mechanism of the retina although, as will be seen, these rays can produce definitely pathological effects in another way (by thermic action). Excessive light, especially if the peripheral retina is largely stimulated, may also produce the phenomenon of dazzle, by which the sensation is prolonged after the stimulus is withdrawn. The ease with which "fatigue" can be elicited varies with the colour of the light used (Wanach), being least for the more refrangible rays; similarly, the duration of the dazzle sensation varies with the colour, red passes off first, then green, blue, and lastly violet. Excessive contrasts also of light intensity exert a deleterious effect upon vision, a factor which is largely responsible for the unpleasant sensation of glare.

Those rays below 4000—that is, the longer ultra-violet—produce a most unpleasant visual effect, as is experienced on looking directly at a bare arc or at a mercury-vapour lamp. The former, with its large proportion of highly luminous waves, cannot easily be looked at for long. Fixation of the mercury-vapour lamp for two minutes produces at the time and for a considerable period afterwards an annoying and uncomfortable effect visually and psychically, and a curious general feeling of weirdness and uncanniness. It is difficult to appreciate details, and a central luminous fog floats before the eyes which may persist for some time, or an absolute or relative scotoma develops. This central fog diminishes the visual acuity considerably, it tends to float about, and, curiously, may sometimes be dodged when the visual acuity appears almost normal for a moment. The lack of fixation which it induces, with the consequent effort to maintain it, seems largely responsible for a feeling of fatigue which quickly develops. Erythropsia ("red vision") readily appears after removing the eyes and persists up to two minutes, and is usually followed by a distinct xanthopsia ("yellow vision"). For some considerable time afterwards there is a marked diminution in the power of adaptation, vision in the dark is lowered, night-blindness virtually coming on, and in the sunlight everything takes on a grey tint. *Erythropsia* is a condition wherein everything seems to be tinged with red. It occurs after exposure of the retina to intense light, particularly to light rich in the shorter spectral waves, as, for example, after looking at an arc or after exposure to a flash of lightning or to the light reflected from a snow-field. It occurs more readily when the pupils are dilated, and is especially common after cataract extraction, and sometimes occurs normally on waking first thing in the morning. It may last a very variable time, and the tint of redness varies.

To be distinguished from true "photo-erythropsia" is a similar condition which is said to occur as a neurosis (Wydler), as also is the red vision after a trauma when the eye is filled with blood, or the red tinge which sometimes comes over black print when reading with strong lateral illumination—a phenomenon which is caused by the light passing through the sclera and the blood-containing chorioid.

The nature of erythropsia has not definitely been cleared up, but it is more probably a subjective phenomenon rather than a pathological condition and depends upon induction. The earliest theories of its origin may be dismissed—the light passing through the lids and becoming coloured with blood (Snellen, Koster), and the entoptic vision of the visual purple (Fuchs). Since it is more readily produced by short-waved light and since it occurs especially after cataract extraction when that light has better access to the retina, Birch-Hirschfeld and Schanz advanced the theory that it was due to ultra-violet rays. Vogt has, however, shown that the phenomenon can be produced by light of any wave-length, that the most effective wave-lengths were 5000 to 5700 A U, that it occurred readily when the ultra-violet was filtered off, and that it could *in no circumstances* be produced in the normal eye with ultra-violet light alone. Brucke showed that the retina was normally adapted for red, and the findings of Burch have already been mentioned—that after "fatigue" of the retina, recovery comes in the order first red, then green, and lastly blue. Therefore, on stimulating with mixed (white) light, the red phase of the negative after-image will predominate (Wydler), and when the stimulating light predominates in the shorter blue and violet waves, owing to the unequal "fatigue" of the primary colour sensations, the red phase will be much more pronounced. Such an explanation will account for the partial erythropsia which occurs on unequal retinal stimulation (Purtscher) and paves the way for an explanation of the xanthopsia which so often follows it. In the cataractous eye it is the long red waves which get through the opaque lens in the highest proportion, the short blue and violet are largely dispersed, the retina in these cases is, therefore, more than usually red-adapted, and when the cataract is extracted and the retina flooded with short-waved light, an additional element—the "fatigue of disuse"—affecting the lower spectrum will further intensify the red after-image.

Apart from these physiological effects there is no evidence that incident light has any specific effect on the retina as on the other body tissues, beyond a thermic or abiotic action depending on length of wave.

Thermal Effects.—The greater part of all energy incident on the retina is absorbed by the pigment in its posterior layers and degraded into heat. Thermal lesions are, therefore, easily produced experimentally, and have been studied in animals by a large number of observers—Czerny (1867), Deutschmann (1882), Widmark (1892), Herrnheiser (1896), Aubaret (1907), Birch-Hirschfeld (1912), and Verhoeff and Bell (1916). When the lesion is on the disc there may be an intense hæmorrhagic retinitis, due to thrombosis of the central vessels. Elsewhere on the retina corresponding to the site of the image, the lesion appears as a small red spot due to chorioidal congestion, localised and sharply defined, demonstrating the necessity for the attainment of a critical temperature to effect tissue destruction. Microscopic examination shows that the greatest severity affects the pigment layer where the heat is absorbed, the cells of this layer show fragmentation and vacuolisation of the cytoplasm, and finally break up altogether and disappear leaving only the pigment. Thereafter follow in intensity the layers in order as they are affected by conduction from the pigment layer, the rods and cones, which become swollen and granular, and the chorio-capillaris where there is intense local hyperæmia, with extravasations of blood. The nuclear layers, the ganglion layer, and the nerve-fibre layer are only affected when the deeper layers are entirely disintegrated and are represented by pigment alone. Some days later the retina is seen to be entirely disorganised, or to be fixed by heat coagulation; while after some months the retina is represented locally by neuroglia containing pigment and the chorioid by a vascular fibrous tissue.

Abiotic Action.—Since only the longer ultra-violet rays can reach the retina, it would seem improbable that any marked abiotic effect could be produced; but although several observers have failed to obtain them (Czerny, Deutschmann, Ogneff, Bach, Verhoeff and Bell) definite abiotic lesions have been described by Strebel, Kiribuchi, de Ridder, and Birch-Hirschfeld. The lesion in contradistinction to that caused by heat attacks primarily the most anterior

THE PATHOLOGICAL ACTION OF LIGHT UPON THE EYE

BY W. STEWART DUKE-ELDER, B Sc,
M D St And, F R C S Eng,
PLIMMER RESEARCH FELLOW IN PATHOLOGY

(From the National Institute of Medical Research and the Ultra-Violet Clinic, Royal London Ophthalmic Hospital)

PART III *—ACTION UPON THE RETINA.

THE question of the pathological action of light upon the retina has given rise to much speculation and controversy, and even to-day our knowledge of many points can by no means be said to have passed beyond the stage of uncertainty and conjecture It is a subject which not only presents many interests in the fields of pure science and applied medicine, but is of importance industrially and from the point of view of general hygiene

1 *The Energy Incident on the Retina*

(a) *The Nature of the Light Incident on the Retina* —The nature of the light incident on the retina is determined by the transmission and absorption of all the ocular media In the upper part of the spectrum in the region of the infra-red the researches of Hartridge and Hill and Vogt have shown that above wave-lengths of 12,000 Angstrom units the energy which reaches the retina is practically negligible in quantity Thereafter the transparency increases rapidly, until at 7000, at the commencement of the visible red, 94 per cent of the incident energy is transmitted through the ocular media and falls upon the retina From this point the media may be considered transparent until the lower part of the visible spectrum is reached, here, in the ultra-violet, the commencement of absorption is determined largely by the lens the albumoid of which is the most powerful absorbent in the path of the light Spectrograms show that the dividing line here varies with that of the isolated lens, being some 200 A U above it (Brucke, Schulek, Hallauer, Shoji), absorption in quantity commences at about 4000 in the adult, and the more recent determinations indicate that light of wave-lengths as low as 3300 reaches the retina (Shoji) Apart from a considerable variation with the intensity of light used, this limit varies largely with the individual, it is raised in age and in the cataractous eye, and in the child the retina receives in appreciable quantity rays well within the limits of abiotic activity (Schanz, Graham) This considerable transparency persists for some time, thus Shoji found that in the infant the lens transmitted light of wave-lengths 3050, at 17 years 3038, and at 23 years of age 3125 The number of investigators who have examined human lenses is small, and the question cannot yet be considered as finally established, but from the information we have it would seem that the human eye is more transparent to the shorter spectrum than that of most laboratory animals It is of interest to note that in nocturnal animals, as the owl, the eye media transmit the ultra-violet down to 3000

The limits of transmission in this region of the spectrum may also be deduced from the observation of the lower limit of retinal visibility The upper end of the spectrum does not lend itself to investigation by this method, since, while the average person cannot appreciate (as red) waves longer than 7500, and the maximum limits recorded are 8350 (Helmholtz) and 8400 (Hertel), we have seen that waves of 12,000 reach the retina, 80 per cent of the infra-red energy falling upon it is in fact invisible (Vogt) There is good reason to believe, however, that all the shorter waves which can penetrate the media are appreciated visually The sensation produced has been variously described as indigo or silvery blue (Helmholtz) or silvery grey (Sekulic, Sauer), but the writer prefers to agree with Birch-Hirschfeld in describing it as a lavender grey It may be that the sensation is due to fluorescence in the retina, although the sharpness of the lines would seem to negative the suggestion; but whether it is or not, the nature of its production does not affect the point at issue Fluorescence in the lens must, however, be eliminated as thereby short waves are transformed in part into longer waves, which latter might readily reach the retina, while the former were absorbed Through neglect of thus taking the precaution of defining retina visibility as the perception of a real spectral line free from fluorescence many observers are in error (Helmholtz, Edridge-Green, &c), but the majority have put the limit with the usual intensities of illumination at about 3500 Glancy, however, who took minute precautions against fluorescence, using a very high-tension spark as source, states that although below 4000 the spectral lines appear much fainter than the spectrogram indicates, yet the 3170 line is plainly visible The limit varies with age, only 1 in 12 individuals above 50 years being able to see below 3950 (Widmark), while in those in whom the lens has been extracted the limit is lowered considerably, both in wave-length (de Chardonnet) and in visual threshold of intensity for the same wave-length (Birch-Hirschfeld).

We may take it, then, that the retina is reached by practically all the waves between 4000 and 7000 (the visibles), and by a part of those between 7000 and 12,000 (infra-red), and between 4000 and a limit varying about the region of 3200 (long ultra-violet)

(b) *Concentration of Energy at the Retina* —In its passage through the ocular media to the retina a portion of the energy incident on the eye is lost, partly by the specific absorption of the media themselves, and partly by dissipation due to their optical heterogeneity Calculating from the extensive data of Aschkinass the loss by absorption has been computed by Luckiesh to be 30 per cent of the total for sources of the nature of the usual artificial illuminants and the sun, which may be considered to be radiometrically equivalent to a black-hot body at 5000° C absolute The loss by dissipation, made up of reflected, dispersed, and aberrated rays, may be taken as 10 per cent Counteracting these two influences, the refraction of the optical system of the eye concentrates the energy to a point on the image on the retina of the emmetrope, a concentration which, when high intensities are involved, may readily produce pathological effects here while leaving the structures in the anterior eye unaffected. In contradistinction to what we have seen to obtain in the consideration of the energy distribution in the lens, since the retinal image of a large body is itself large and widely spread out, for the same total intensity of radiation, the greater the extensity of the source, the smaller the energy concentration at the retina, the main danger to the retina, therefore, lies in sources subtending a small solid angle and radiating with high intensity—e g, the sun

2 *Pathological Effects*

Pathological effects caused by light upon the retina may occur in one of three ways (1) by over-stimulation and consequent impairment of the physiological mechanism of vision, (2) by thermic action, and (3) by abiotic action

Since the infra-red rays do not excite the physiological mechanism of vision they cannot over-stimulate it Any pathological effects which the visible rays (those between 7000 and 4000 A U) may cause in the functioning of this mechanism are difficult to assess in the present state of our knowledge, and the old conception of retinal "fatigue" as used by Helmholtz and the earlier writers requires modification When the dark adapted eye is exposed to light, the light induces a new mechanism of functioning—photopic vision There is evidence that moderate exposure to bright light increases the retinal excitreadily develop, if, however, the lens remains transparent, the actinic rays pass through, and are thus able to exert a harmful effect on the retina Gjessing has recently confirmed van der Hoeve's statistics, but although it may be considered as probably established that the two diseases do not often occur together, statistical evidence of this kind is, when taken by itself, somewhat unconvincing, and very often lends itself to misinterpretation The most that can be said at the present time is that the matter is still open, and the theory certainly unproven

---

* Parts I and II appeared in THE LANCET of June 12th, 19th, and 26th respectively

Industrially, while all intense illuminants give rise to the subjective symptoms already mentioned, the cases of actual retinal injury are rare After exposure to arc lights and in electric welding diminution of vision, contraction of the visual field, and scotomata are relatively common, while erythropsia and xanthopsia occur more rarely, objectively there have been reported œdema of the retina (Little), pallor of the disc (Valois), and macular changes (Lubinski) These findings are, however, exceptional, and the naked arc can be fixed for several minutes without any damage being done to the retina beyond temporary impairment and derangement of vision The flash of the short-circuiting of a high-tension current almost always gives rise to the characteristic visual disturbances, which are usually temporary, but on occasion have remained over indefinitely long periods of time; haziness of the disc margins (Terrien) and macular (Haab) and chorio-retinal changes (Uhthoff, Kramer, Bettremieu Knapp) have been described These latter appear as small pigmented areas, and are without doubt the cicatrices of thermal lesions caused by the longer wave-lengths of the very wide range of radiations emitted by these sources Similar thermic retinal lesions after exposure to a lightning flash have been reported by Le Roux and Renaud and Oliver

Bibliography to Part III

Aschkinass, E Zeit f Psychol u Physiol d Sinnesorg, xi, 44, 1896, Wied Annal d Physik, lv, 401, 1895
Aubaret Arch d'Ophtal., xxvii, 76, 1907.
Bach Arch. f Ophthal, xli, 3 u 62, 1895
Batten Trans Ophthal Soc U K, xxi, 70, 1900
Best Klin Monat f Augen, xlvii., 520, 1909 xlviii, 342, 1910, Münch Med Woch., S 1710, 1909, Med Klin, No 7 u 29, 1910
Bettremieux Vide van Lint Accidents Oculaires Provoqués par l'Electricité, Bruxelles, 1909
Birch-Hirschfeld Arch f d g Physiol, cxxxvi, 595, 1910, Arch. f Ophthal lviii 469, 1904 lxxi, 573, 1919 Zeit. f Augen., xx. 1, 1908 xxi, 385 1909, xxviii, 324, 1912
Bokenham Ophthal Rev vix., 55, 1900
Brucke Arch f Anat u Physiol S 252, 1845
Burch Phil. Trans Roy Soc, cxci, 1, 1899, Proc Roy Soc, lxvi, 216, 1900
de Chardonnet Comp Rend de l'Acad de Sc, p 509 1883
Collins Roy Lond Ophthal. Hosp Rep, xiv, 374, 1897
Czerny K. Acad d Wissen vi, 2, abth lvi, 1867
Deutschmann Arch f Ophthal, xxviii, 241, 1882
Dufour Bull de la Soc Méd de la Suisse Rom., 321, 1879 378, 1882
Edridge Green The Physiology of Vision, p 136
Fuchs Arch f. Ophthal, xlii, H 2, 207, 1896
Gjessing Zeit f Augen lvi, 79, 1925
Glancy Amer Jour of Physiol Optics, iv, 125, 1923
Graham Amer Jour of Physiol Optics iv, 152, 1923
Grümbaum Arch f d. ges Physiol, clxvi, 473, 1917
Haab Klin Monat f Augen, xxxv 213, 1897
Hallauer Klin Monat f Augen., xlvii 721 1909
Helmholtz Pogg Annal, xciv, 205, 1855 Handb der Physiol Optik, ii 1896
Herrnheiser Arch f Augen, xxxiii, Ergänz, 1896
Hertel Zeit f Augen., xxvi, 5, 1911
van der Hoeve Arch. f Ophthal., xcviii, 1, 39, u. 49, 1918
Kinbuchi Arch. f Ophthal, l, 1, 1900
Knapp Zeit f Augen xxix, 440, 1913
Koster Nederl. Oogheelk., Bijdr, 1897
Kramer Med. Klin Nr xxi 803 1908
Lasarev Ophthal Rev, xxxii 27, 1913
Lawson Internat Congress Med., London, Sect ix, pt 2, p 65 1913
Leber Graefe Saemisch Handb d. g Ophth., Bd v, cap viii., 1877
Little Ophthal Rev ii 196, 1883
Lubinski Westnik. Ophth, vi, 203, 1889 Wiener Med Presse, 4 1889
Luckiesh Electric World lxii, 844, 1913, lxvi., 576, 1915, Amer Jour of Physiol Optics, ii, 3 1921
Menacho Zeit f Augen, iv, 248, 1900, Archiv de Oftal, 243, 1901, vi 253, 1906
Mettey Quelque Recherches sur l'Eblouisement Electrique, These, Paris, 1903
Ogneff Arch f Physiol, S 209 1896
Oliver Trans of Amer Ophthal. Soc, 613, 1896

(*Continued at foot of next column*)

OBSERVATIONS ON CHOLECYSTOGRAPHY.

BY T IZOD BENNETT, M D, M R C P LOND,
ASSISTANT PHYSICIAN, MIDDLESEX HOSPITAL, PHYSICIAN TO THE ROYAL NATIONAL ORTHOPÆDIC HOSPITAL,

ALAN MONCRIEFF, M D, M R C P LOND,
MEDICAL REGISTRAR, MIDDLESEX HOSPITAL,

AND

F. G NICHOLAS, M B, B S LOND,
D M R E CAMB,
ASSISTANT RADIOLOGIST, MIDDLESEX HOSPITAL.

(*From the Departments of Physiology and Radiology and the Bland-Sutton Institute of Pathology, Middlesex Hospital*)

THE introduction of tetra-halogen compounds of phenolphthalein has made it possible to obtain useful data concerning the functions of the liver and biliary tract, both in health and disease.

As is well known, these compounds have been used in two ways (1) Tetrachlorphenolphthalein has been administered intravenously and the rate of its elimination into the bile has been utilised as a measure of the functional capacity of the liver (2) The tetrabrom and tetraiodo compounds have been administered either intravenously or orally, and the subsequent opacity of the gall-bladder has been utilised for studying the size, appearance, and possible distortion of that organ

One of us (T I B) has made a series of experiments with a view to determining whether these two types of observation could not be made simultaneously. Samples of various compounds have been administered both orally and intravenously to guinea-pigs and to rabbits, but it has been found that, whereas the tetrachlor compound is a dye which colours the blood serum sufficiently to make estimations of its concentration easy, the tetraiodo and tetrabrom compounds produce no such marked effect

Conversely, the relatively low atomic weight of the tetrachlor compound makes it useless for radiographic purposes and even by radiograms of recently removed livers from animals to whom it has been administered in full doses no X ray shadows of the gall-bladder or bile-ducts were obtained In these circumstances, we decided to postpone attempts to study series of phenomena simultaneously and concentrated our attention on cholecystography.

The toxicity of these substances to the tissues is reported to have led to the production of sloughing, when even a few drops have escaped locally during intravenous injection The risks of such accidents are not great, but, as the test is a diagnostic one only, the possibility of such an occurrence makes the oral method of administration greatly preferable We have therefore confined our study to the oral

(*Continued from preceding column*)

Purtscher Zentralb f. Augen, 1883 Arch f Augen, iii., 1887
Reich Arch f Ophthal., xxvi, H 3 135, 1880
de Ridder La Clinique, June 24th, 1911
Le Roux et Renaud Arch. d'Ophtal., xxviii 377, 1908
Sauer Ann d. Physik. u Chem, clv, 602, 1875
Schanz Arch f Augen. lxxxvi, 549, 568 1913, Zeit f Augen, xxxvi, 22, 1916, Klin Woch, S 2568, 1922
Schulek Beitr z Augen., i, 101, 1895 ii 467, 1899
Sekulic Ann d Physik u Chemie, cxlvi, 157, 1872
Shoji Mitteil d Med Fakultät d. Univ Tokyo, xxix., 61, 1922 Ann d'Ocul clx., 356, 1923
Snellen Arch. f Ophthal, xliv, 1, 1897
Strebel 75 Vers deutsch. Naturforscher in Kassel, 1903
Terrien Arch d'Ophtal, xxviii, 679, 1902
Uhthoff Zentralb f Augen., ii, 341, 1899
Ulbrich Zentralb f. Augen. iii 264, 1900
Valois Clin. Ophtal, p 92, 1904
Verhoeff and Bell Proc Amer Acad of Arts and Sciences, li., No 13, 630, 1916
Vogt Arch f Augen, lx. 91 1908, lxiv 344 1909, Klin Monat f Augen, li., 129, 1913 Zeit f Augen, lxxviii, 93, 1914
Wanach Zeit f Sinnesphysiol, xliii 443 1908
Widmark Skand. Arch. f Physiol, i, 1889 iii, 1892 iv 1893
Wydler Zeit f Augen, xxvii, 299, 428, u 524, 1912

layers Chromatolysis and vacuole formation has been described in the ganglion cells, and loss of chromatin in both nuclear layers, while the deeper layers are unaffected ; Mettey has described atrophic changes in the optic nerve The changes observed by the writer have always been very slight, so slight as to seem within the physiological variation of the normal rabbit's retina after being subjected to cutting and staining The exposures given were, however, never more than 30 minutes duration, while Birch-Hirschfeld, who has described these lesions most confidently, subjected his animals to radiations lasting for periods up to six hours This difficulty in producing abiotic pathological changes here agrees with the negative findings of Verhoeff and Bell, who experimented on monkeys, and in one case on a woman the day before excision of the eye for carcinoma of the lid It seems reasonably certain, therefore, that the retina is adequately protected by the ocular media from abiotic rays under all ordinary circumstances; but it is probable that extreme exposures for long periods may injure it, and the possibility of ultimate damage from exposures of less extreme intensity but over periods lasting many years is not without the bounds of possibility The above pathological changes are obtained much more readily and to a much more marked degree in the lensless eye, experimentally they are produced in the aphakic rabbit after exposures which leave the retina of the normal animal unaffected (Birch-Hirschfeld, Schulek)

Clinical Occurrence of Retinal Lesions

Sun Blindness —Visual disturbances from looking at the sun have been known and recognised for a very long time Plato refers to them in his Phaedo ; Galileo, looking at the sun with his telescope, injured his eyes, and Galen describes the symptoms in De usu Partium Reid, in 1761, appears to have recorded the first clinical description, and Dufour, in 1882, was the first to describe accurately the ophthalmoscopic appearances of the lesions

The sun may be considered from the radiometric point of view as a black-hot body at 5000° C absolute, and the energy available in its radiations has been computed to be about 1,000,000 erg-secs per sq cm at the earth's surface (Verhoeff and Bell) If the pupil is strongly contracted to about 2 mm , as it would be on observing it directly, about 3 per cent of this energy will enter the eye, and since slightly over 30 per cent of that entering is lost in its passage through the eye, the energy available at the retina will be of the order of 20,000 erg-secs per sq cm , if the size of the image is 0 15 mm , this will entail a concentration of energy here of the order of 113,000,000 erg-secs per sq cm —quite enough to produce a severe lesion in a very short time Ordinarily, when we look at the sun directly we are only protected from injury by the fleeting duration of the glance, and by the great lack of fixation which distributes the energy accumulation at any one part of the retina ; only on unusually determined fixation is injury sustained Every eclipse has brought to light a number of such cases, and the name " eclipse blindness " usually applied to the condition is, therefore, appropriate

The greater part of the infra-red in the solar spectrum is absorbed by the moisture of the atmosphere, and the ultra-violet moiety of the total energy reaching the earth is comparatively small Experimentally, the typical lesions of eclipse blindness have been produced by filtering out the infra-red by a layer of water (Deutschmann) or of a solution of ferrous sulphate which is strongly adiathermic, and also by eliminating the ultra-violet below 4000 by the interposition of Schott's heavy flint glass ; while uviol glass, which obstructs the visibles but allows the passage of ultra-violet affords complete protection (Best) The lesion is therefore due mainly to the luminous waves It is to be remembered that the maximum of the solar energy intensity is near the shorter visibles in the blue-green (4700–5000 A U), and that therefore where the sun is the source, the greatest energy intensity, and therefore the greatest heat effect, is produced by these rays

The lesion is a purely thermal effect, corresponding to that already described as obtained experimentally The subjective symptoms are a diminution of visual acuity, sometimes to 6/60 or less, but usually to about the level 6/12 , the perception of a diffuse cloud before the eyes, which often shows rotatory movements and may be worse in bright light , a scotoma , and often metamorphopsia The scotoma is central, is usually absolute but often relative, or may be initially absolute and later become relative, or absolute centrally surrounded by a ring zone of a relative nature , it does not accurately correspond to the image of the sun owing to the lack of fixation spreading the affected area irregularly , in some weeks it tends to contract, but it often is persistent Erythropsia occurs rarely Ophthalmoscopically, there is originally a small red spot at the macula due to choroidal congestion, which may be accompanied by general hyperæmia, œdema, and hæmorrhages Small irregular pigment spots frequently remain at the macula, indicating definite and permanent destructive lesions, while macular holes have been observed (Lasarev) Rare complications are obstruction of the central vessels (Batten, Walker), hæmorrhagic retinitis (Leber, Bokenham), retrobulbar neuritis (Collins, Menacho), and optic atrophy (Ulbrich)

Similar symptoms with similar retinal changes have been described as occurring in a milder form in bright weather when the sun is not directly regarded, as the case reported by Lawson wherein they developed after a day's golf and were followed by permanent fine macular spots Dark people are more susceptible than fair, owing to the larger amount of absorbing pigment in the former, while hypermetropes show a much higher incidence in the literature than those of normal or myopic refraction The concentrating effect of strong convex spectacles in the hypermetrope may predispose to injury, and symptoms have been reported after the prolonged use of field glasses on a sunny day (Lawson)

Whether or not prolonged exposures to light lasting over years have an injurious effect on the retina by a cumulative action is an open question, and one which, by its nature, is very difficult to answer with any degree of certainty It is improbable that any such effect could be due to a thermal lesion, as is eclipse blindness, for at any one time a critical temperature must be attained to produce any destructive effect, and with intermittent exposures the temperature effect is nullified in the intervals of cooling, and a cumulative action, therefore, cannot be obtained Diffuse daylight and all ordinary illuminants, therefore, can have no ultimate thermal effect on the retina With the short rays, however, the case is different, since the latent period of abiotic action extends up to about 24 hours, and a cumulative action can therefore be produced by exposures on successive days even although separated by intervals of sleep We have seen that the experimental production of such lesions is very difficult, owing to the high degree to which these rays are absorbed in the media of the eye before they can reach the retina, but the factor of small amounts of damage accruing over many years is certainly one to be considered Thus, accompanying the photophthalmic symptoms met with in snow-fields, Widmark records the occurrence of amblyopia, and Birch-Hirschfeld a scotoma for red and green, and ophthalmoscopically a hyperæmia of the retina and disc may occur (Reich) Van der Hoeve has suggested that ordinary daylight, acting less intensively, and over indefinitely long periods of time, may be the cause of senile macular degeneration His thesis is based largely on the evidence that his statistical studies show that this retinal disease appears in its incidence to be antagonistic to cataract , the short waves of light (he argues) cause cataract by impairing the nutrition of the lens through an indirect effect on the ciliary body, and the lens having become less transparent, the retina is protected from the short wave-lengths, and macular degeneration does not there should, in the second film, be a distinct diminution in this size with an increase of density due to concentration of contents and contraction of the walls of the gall-bladder, which are the normal functions of the non-infected organ.

7. It is the custom of many American observers, in all cases of doubt, to follow the oral administration with an intravenous one. If a non-toxic compound can be introduced this will undoubtedly be an improvement. At present the oral method by itself is very satisfactory in the great majority of cases: it is easy and safe and we have experienced no difficulty in employing it both for out-patients and in-patients. Vomiting occurred in three cases only, slight regurgitation in two others, and trivial nausea in one or two. In no case were any toxic symptoms observed.

Our thanks are due to those physicians and surgeons who submitted cases for investigation: we have also had most useful help from Messrs. Allen and Hanburys in the preparation of the capsules. The expenses of one of us (T. I. B.) were partly defrayed by a Government grant made on the recommendation of the Royal Society.

This paper forms a part of a report to the Medical Research Council.

Clinical and Laboratory Notes.

A CASE OF
MEASLES SHOWING UNUSUAL NERVOUS SYMPTOMS.

BY J. TODESCO, M.D., M.R.C.S., L.R.C.P., D.P.H.,
RESIDENT MEDICAL SUPERINTENDENT, BOROUGH HOSPITAL, CROYDON.

THE following case of measles showing unusual nervous symptoms appears worthy of record.

J. W., a boy aged 6½ years, was admitted to the Borough Hospital on the morning of Jan. 18th, 1926, in a semi-conscious state. About a week previously he had developed signs of a cold in the head with fever and coughing, a typical measles rash appearing four days later. The night before admission he was noticed to be sleeping heavily, could be roused with difficulty, and appeared semi-conscious. He had been quite well prior to his present illness, was intelligent, and had never suffered from fits; there was no history of epilepsy in the family.

On admission he was very irritable, crying out from time to time, could not answer questions and resented examination, being roused with difficulty. The face was flushed, the mouth very sore, and tongue dry and coated. Respirations were increased, but no adventitious signs elicited in chest, the heart action being rapid and weak, temperature 101.6° F. General mottling of the skin was observed, due to a faded measles rash. The pupils were large, equal, and fixed, with slight conjunctivitis: no rigidity of neck or limbs was present: the knee-jerks were normal, but no plantar reflex was obtained, though a bilateral Kernig's sign was noted. He had marked difficulty in swallowing and obstinate constipation.

On the afternoon of admission the boy had five fits, lasting between 10 and 15 minutes. During these he became very cyanosed, ground his teeth and had twitchings of right side of face, right arm and leg, whilst the left side of the body was held rigid. He was incontinent both of urine and fæces; the pupils were dilated and fixed. After each fit there was general muscular relaxation, the patient lying curled up in bed crying out and becoming very restless from time to time. At 6 P.M. he vomited some brownish fluid. On lumbar puncture, performed on the morning of admission, the cerebro-spinal fluid was under slightly increased pressure and slightly turbid. On examination it did not reduce Fehling's solution; there was marked increase of polymorphonuclear cells; no bacteria seen; the fluid remained sterile on culture. The boy was very restless and moaning during the night of Jan. 18th, having two further similar seizures between 10 P.M. and 4 A.M., with incontinence both during and after them. On the morning of Jan. 19th he appeared more conscious, though unable to speak or answer questions and resenting examination. He was very restless and cried out from time to time. Temperature was 99.8°, his colour still poor. In the evening he became quieter, could swallow more easily, and answer questions: his pupils were equal, reacting to light and accommodation, and he appeared quite conscious.

From this time onwards the boy's condition steadily improved. He had no further seizures, but still resented examination, being disinclined to speak or take food and being incontinent at times. He was still restless at night. His temperature became normal on Jan. 21st, remaining down subsequently. By Jan. 24th he was convalescent, but appeared very emotional, mentally dull and dazed at times. He got up for the first time on Feb. 1st, being still dull, and hesitating when answering questions. He had no recollection of being brought to hospital or what had happened during his stay there. He was discharged on Feb. 9th.

The points of interest in this case are the nervous complications with marked meningeal symptoms, fits, and Kernig's signs, all very uncommon in measles. In meningism occurring in the course of acute specific fevers Kernig's sign is usually absent, and the cerebro-spinal fluid, though it may be under pressure, does not show an excess of cells as occurred in this case. The character of the cerebro-spinal fluid obtained was similar to that seen in acute meningitis, but unlike this disease, there was rapid improvement with loss of meningeal symptoms within 48 hours of their onset, the temperature never rising above 100° except on the day of admission, and coming down to normal after four days.

I wish to thank Dr. H. P. Newsholme, medical officer of health for Croydon, for permission to publish this case.

A CASE OF RENAL CALCULUS.

BY A. C. SEN GUPTA, M.B.,
CHIEF MEDICAL OFFICER, SARANGARH STATE, C.P., INDIA.

THIS case seems to be interesting in that so large a number of stones was removed so successfully, under most difficult circumstances, in a moffussil dispensary.

The patient was admitted in the branch dispensary of this State under a sub-assistant surgeon. There was an abscess in the right lumbar region. The doctor, thinking it to be a simple abscess, opened it and during the discharge of pus he detected to his astonishment two stones coming out. He dressed the case for about a fortnight, but finding no improvement sent the patient to me at the main hospital of this State. I diagnosed it to be a case of perinephric abscess secondary to renal calculus.

I tried to dissect out the kidney by the lumbar route. After the usual skin incision, I found the surrounding fascia and muscles so adherent that it was not possible to separate them from each other. I followed the sinuses formed by the passage of the stones and, working with my finger, I reached the stone cavity in the kidney, gradually removing all the sloughs and decomposed tissues on the way. I found there were two sinuses joining the kidney cavity, one reaching from the surface straight down to the kidney and the other taking a curve upwards and outwards and then a little forwards, thus reaching the kidney. There were two stones at the mouth of each sinus. In the first one there was a large branched calculus firmly held in the calyces of the pelvis. I loosened the stone in its bed by passing my index-finger all round it and delivered it with a stone forceps just as the head of a child is delivered by midwifery forceps, because there was very little space to work out the stone forceps. After its removal 14 more stones were delivered by the index-finger. The stone occupying the mouth of the other sinus was also fairly big and took about an hour to remove with the finger, as the curvature of the sinus was such that no forceps could work, neither could the wound be enlarged without unnecessarily cutting the muscles in several directions.

In all 18 stones were removed from this patient. For the last three months he has been in the hospital, the sinuses are almost filled up now, and the patient's health has much improved, though he still complains of a little pain over the upper pole of the right kidney.

method, and are able to confirm the favourable reports published by other observers

At the outset we tested a series of samples from various sources, both of tetrabromphenolphthalein and tetraiodophenolphthalein, but whether owing to their chemical composition or to the manner in which they were supplied for use (gelatin capsules, &c) our results were uniformly negative Finally, we secured a supply of the tetraiodo compound prepared in America by the Malinkrodt Chemical Works under the name of iodeikon With this we have had good results

Method

The patient is prepared as for an ordinary skiagram of the gall-bladder An ounce of castor oil is given on one night and ½ oz the next night On the following day a light breakfast and a very light lunch are permitted and an ordinary skiagram of the gall-bladder taken in the afternoon Tea and bread-and-butter are permitted on the same day, and at 12 midnight another small meal is taken, during which the capsules of iodeikon are swallowed On the following morning the patient has a cup of tea only for breakfast and is X rayed at 10 A M, 2 30 P M., and 4 30 P M This scheme has been gradually evolved to suit all parties concerned The dose of dye employed has usually been 5 g, although, if the patient weighs under 100 lb, this is reduced to 4 g It is given in capsules each containing ½ g

At the outset of our investigations difficulties were encountered owing to the methods in which the capsules were prepared If a readily digested covering, such as gelatin is used in a large proportion of cases the dye is liberated in the stomach, an insoluble hydrochloride is then formed and vomiting usually follows, practically the whole of the dye being thus rejected If, on the other hand salol is employed, the pills are often so resistant to digestion that they may pass through the cæcum, and in consequence, no absorption of dye occurs

Success depends upon the liberation of the dye in the upper part of the small intestine, but not in the stomach, and it appears clear that, as there is considerable variation in the strength of the gastric and pancreatic digestive juices in different individuals, it is almost impossible to devise a capsule which will not be too readily digested by some and too resistant to the digestive juices of others

With the assistance of Messrs Allen and Hanburys, we finally secured a formalised gelatin capsule which has given almost uniformly successful results, it must be freshly prepared, however, because, if kept more than 24 hours, it becomes too tough for proper digestion

Analysis of Fifty-eight Cases of Cholecystography

Cases 1–4 inclusive were given sodium tetrabromphenolphthalein in cachets No results were obtained The remaining 5–58 inclusive were given sodium tetraiodophenolphthalein, mostly in formalised gelatin capsules In a few cases salol-coated pills were used

Results

1 *Normal gall-bladder shadows obtained after giving dye* Twelve cases Of these, ten were not operated upon, and were either in the nature of control cases, or else the test was used to exclude disease of the gall-bladder, while, in the remaining two cases, operation or autopsy confirmed the normal state of the gall-bladder

2 *Faint shadows of gall-bladder obtained after giving dye* Ten cases Of these, in two cases a pathological gall-bladder was found at operation, a normal gall-bladder in one case, in one case vomiting had occurred soon after giving the dye, and in six cases no operation has been performed Many of these cases came early in the series, before the importance of having freshly prepared capsules was realised

3 *Mottled shadows of gall-bladder obtained after giving dye* Three cases In all three cases a pathological gall-bladder containing stones was found at operation

4 *No shadow of gall-bladder obtained and no evidence of unabsorbed dye* Twenty cases Of these cases, in four a stone was found at operation to be blocking the cystic duct, in another six the gall-bladder was pathological and contained stones, in three cases there was disease of the duodenum near the ampulla of Vater (ulcer and malignant disease), while in the remaining seven cases two vomited severely after receiving the dye and in five no operation has been performed

5 *No shadow of gall-bladder obtained, but unabsorbed dye seen in the alimentary canal* Five cases

The remaining four cases of the 54 in this series are accounted for as follows Two are awaiting operation One patient was very neurotic and unable to swallow the capsules One of the cases represents a repeat, and is included only once

Summary and Conclusions

From the results here analysed the following points emerge —

1 The importance of taking a skiagram before the administration of the dye has not hitherto been sufficiently emphasised In the first place it must be remembered that the gall-bladder may give a definite shadow in this preliminary plate If, after administration of the dye, there is no increase in the density of this shadow, it is evidence that no dye has entered the gall-bladder, a deduction which would not have been possible without the preliminary skiagram

2 If there is some pathological condition present, not, however, amounting to complete obstruction of the cystic duct, the opacity caused by a limited amount of dye entering the gall-bladder, plus the original density caused by the gall-bladder itself, if such has been found in the preliminary skiagram, may give the appearance of the opaque shadow of the normal cholecystogram

3 Certain other shadows, such as those of renal calculi, calcified glands, or areas of calcification in the costal cartilages, may also be present and are less likely to lead to erroneous deductions if seen clearly in the preliminary plate

4 When definite gall-stone shadows are seen before the administration of the dye there is no need to continue with cholecystography But if certain vague shadows in the preliminary plate are seen to coincide in position with a patchy gall-bladder shadow after administration of the dye, it is strong confirmatory evidence of their nature

5 It is most important to observe the alimentary canal, and especially the cæcum, for evidence of unabsorbed dye If this is not found and the gall-bladder does not fill up with dye, it is a fair assumption that there is some pathological condition of the gall-bladder or ducts present In one case of duodenal ulcer with pyloric stenosis, the capsules were all held up in the stomach where a dense shadow of conglomerated capsules could be seen The dye was obviously not absorbed, and hence absence of a gall-bladder shadow in this case was of no significance The importance of securing proper absorption of the dye cannot be over-estimated, because the first postulate of the method is that *a negative result implies gross disease of the gall-bladder*, and, if this negative result is due to failure of absorption following imperfect technique, most serious errors may result The only possible exception to this rule occurs when there is present advanced and widespread disease of the liver In one of our cases no gall-bladder shadow was obtained and no unabsorbed dye could be seen in any part of the alimentary canal At autopsy a few weeks later the gall-bladder and ducts were found to be normal, but there was very advanced cirrhosis of the liver

6 In examining the shadows of the gall-bladder, attention should be given to the variations in size and density on the series of films A healthy gall-bladder may cast a surprisingly large shadow, but

Reviews and Notices of Books.

A MANUAL OF THE PARASITIC PROTOZOA OF MAN

By CHARLES F. CRAIG, M.D , M.A. Hon Lieut - Colonel, Medical Corps U.S Army, D S M London: J. B. Lippincott Company. 1926 Pp 569 35s.

THE rapid advances which have been made during recent years in our knowledge of the protozoan parasites of man and the diseases they cause have led to a realisation of the fact that it is essential for every medical practitioner, no matter whether he is domiciled in the tropics in temperate or even in cold climates, to be able to diagnose with a fair degree of certainty each and every species inimical to human well-being In our medical schools greater stress is being laid on the teaching of this subject, but in this both teachers and students have been sadly handicapped by the lack of up-to-date and reliable text-books Since the war several excellent monographs have appeared, dealing, however, only with parts of the field, and also a few text-books; the former were more in the nature of zoological treatises, while the latter contained much that was irrelevant and did not emphasise the practical points so vital to the medical man

To produce a work for medical students and practitioners, laboratory and research students which would fill this want by adequately covering the salient features of the morphology, life-history, relation to disease, and prophylaxis of these parasites was the main object of the author in compiling his text-book. His manner of approach is an excellent one, and most methodical After a general consideration of each group the individuals of that group are dealt with in detail Thus a list of synonyms is given subsequent history and nomenclature are discussed, and this is followed by a clear and lucid description of the morphological characters both as found in fresh and also in stained preparations The life-cycle, method of reproduction, transmission, and mode of infection of the vertebrate host are all clearly set forth, while such points as the possibility of cultivating the organism in question or of producing infections experimentally in laboratory animals receive full mention. A section is devoted to the relationship which the parasite bears to the causation of symptoms of disease in man

In startling contradistinction to the lucidity of the text is the way in which the illustrations have been prepared. The pictorial reproduction of the parasites is surely as important, if not considerably more so than the written word That the student should be able at a glance to compare his microscopical findings with an accurate drawing is as must be obvious to all who have had either to learn or to teach the subject one of the first essentials, and from this aspect the book falls sadly short of the necessary standard of excellence A wide use has been made of photomicrographs the majority of which are splendid examples of the photographer's art as applied to the microscope, but it must be remembered that the possibilities are limited in this direction that only one focal plane containing perhaps a few of the main features can be registered and even then the reproduction cannot be so sharp as the visual image Thus for example in some of the photographs of the amœbæ the nuclei are moderately sharp and clear, while the cytoplasm or body substance after all as important as the nuclear structure is a meaningless shadow The interpretation of a photomicrograph and its appreciation are matters for those already expert and not for students With a few exceptions the illustrations, other than photomicrographs have been taken from the works of other observers Some of these reproductions do not appear to be as clear as the originals while the combining of drawings from two or more sources has resulted in fusion products which also do not appear to do justice to the original pictures. The value of a subsequent edition would be greatly enhanced by the inclusion of original drawings of microscopic appearances

Where it has been necessary in the text to indicate that a certain matter is still sub judice, or that disagreement exists in the interpretation of certain phenomena, the author has endeavoured to state both sides of the question fairly and without bias For example he quotes the classifications of the amœbæ in man according to Dobell and Stiles and Boeck, is in complete agreement with neither, and finally gives a classification according to his own views Indeed, it may be said that only in the case of *Craigia hominis* not yet accepted as a true parasite of man by the majority of European, and more particularly British workers, does any suggestion of partisanship become evident, and, as this was described in the first instance by Craig himself, has been accepted by such authorities as Kofoid and Swezy, but has been rejected by others on what Craig considers to be inadequate evidence his attitude on this question is only natural Generally speaking, the author's teaching is in accord with the bulk of modern scientific opinion, and there are no large departures from the orthodox We note however, that he separates the parasite of æstivo-autumnal or malignant tertian malaria into two subspecies, *Plasmodium falciparum* and *P. falciparum quotidianum* Again, in this section on malaria his use of certain expressions might conceivably give rise to confusion The term spore should not be applied to the products of asexual multiplication—the merozoites—nor should gamete and gametocyte be used interchangeably Sporulation, too, although used for many years now to indicate the final stages of the asexual cycle in man or schizogony, would be better applied to the formation of the sporozoites in the mosquito

At the end of each chapter the author has given a list of references of the more important papers dealing with the subjects covered in that section. This list is not intended to be a complete bibliography; it contains more especially the recent work, and should be regarded by the student as an introduction to the literature. Another most useful feature is the technical appendix, in which is included the more important laboratory methods of cultivating or preparing permanent stained preparations of the parasitic protozoa.

We have no hesitation in recommending this book to the medical practitioner or the medical scientist as one of the best accounts of this important branch of medicine in English. One or two important additions might be made with advantage. The absence in the present volume of coloured plates showing the malarial parasites at all stages of development, and of the trypanosomes and allied flagellates, is noticeable. The number of original diagrams illustrating life-cycles should be increased and those already included should be carefully revised. There would seem little doubt that a demand for a second edition will give the author early opportunity to make these improvements

---

NUTRITION.

Troubles des Échanges Nutritifs By C ACHARD, Professeur de Clinique Medicale à la Faculté de Médecine de Paris Membre de l'Académie de Medecine. Paris: Masson et Cie 1926 Two vols Pp. 1220. Fr.110.

IN these handsome volumes Prof. Achard has adopted a new classification for the discussion of dietetics and all those diseases which chiefly affect nutrition. Physiology is his basis and he considers in sequence all methods by which the body can ingest gases water, mineral matter carbohydrates fats and lipoids and lastly nitrogenous substances. "L'esprit gaulois' says one of Meredith's characters, "sparkles with the clear crystal of common sense," and in choosing this classification Prof. Achard has not only been able to display his facts in logical sequence, but has succeeded in approaching nearer

FRACTURE OF THE ANATOMICAL NECK OF HUMERUS WITHOUT APPARENT DIRECT VIOLENCE

By F Milnes Blumer, M B, C M Edin,
SENIOR HONORARY SURGEON, STAFFORDSHIRE GENERAL INFIRMARY

The patient, a farmer, aged 38, dislocated his right shoulder some six or seven years ago while in an epileptic fit I reduced it, and the normal function of the joint was regained On Jan 19th, 1921, I received a message to say he had again put his shoulder out On reaching the house I found him lying on his back on the floor His wife told me that, feeling a fit coming on, he promptly lay down As the fit developed he stretched his arms straight down by his side with his muscles in tense contraction The wife said she then heard a click, which told her he had again dislocated his shoulder The patient, she insisted, never fell but had lain down quickly, as was his custom, and received no blow of any kind As the joint appeared to be dislocated, I proceeded to reduce it under chloroform, and on manipulating it I felt crepitus, and could not completely correct the deformity Examination under X rays two days afterwards revealed fracture of the anatomical neck This was confirmed when I operated a week later and removed the fragments, which were loose within the capsule There was no injury to the glenoid The wife is an observant and intelligent woman, and her statement that there was no direct violence can be accepted How, then, was the fracture caused?

The patient has now a good range of movement at his shoulder, and is able to do all his work

Medical Societies.

RESEARCH DEFENCE SOCIETY

ADDRESS BY DR J A MURRAY

The annual meeting of this Society was held on June 25th at the rooms of the Medical Society of London, Lord Lamington, the President, occupying the chair

The President referred to the sense of loss and sorrow felt by those responsible for carrying on the Society's work at the death of Mr Stephen Paget The Society owed its inception entirely to Mr Paget, and it was he who had safeguarded its interests during difficult times

Lord Knutsford said that this was the first meeting the Society had ever held without the presence of Mr Paget Although sometimes misrepresented by those who opposed him, Paget's activities were due not to a love of controversy, but to his hatred of everything which savoured of untruth and misrepresentation The committee had decided to establish a Stephen Paget Lectureship at various universities and seats of learning, and it was hoped to send a good speaker, every year or every second year, to different centres in memory of his work

At the end of the business meeting Dr J A Murray gave an address on the

Experimental Attack on Cancer Problems

The experimental study of cancer, he said, was started 25 years ago, and its progress could be conveniently divided into three periods The first embraced the work of Jensen and Borrel on transplantation of animal tumours, the second was that in which Fibiger, Yamagiwa and others produced cancer de novo in normal animals, while the third period was that in which the possibility of a microbic origin was worked at by Peyton Rous, Blumenthal, Gye, and Barnard

Jensen and Borrel, he said, showed that cancerous growths in tame white mice could be propagated in series in normal animals of the same kind by introducing fragments of the original growth under the skin, and Bashford showed that cancer in mice presented all the features of the malignant new growth of man and the larger domestic animals, features also reproduced in the course of the propagated tumours obtained by transplantation It became evident that the cancer cell behaved as it did because of differences inherent in it or permanently imposed on it, not because of constitutional peculiarities of the individual in which the growth had arisen. Jensen found that animals in which a first transplantation had failed were resistant to a second grafting Lumsden had recently shown that a serum against rat sarcoma could be produced in the rabbit, and under certain conditions this serum was found to have a curative action

Dealing with the second of his periods, Dr Murray referred to the forms of cancer which followed long-continued irritation Prof Yamagiwa, of Tokyo, painted rabbits' ears with tar week after week for long periods, and in some instances growths resulted which continued to grow after the tarring had been discontinued, and in a few of these cases metastases were observed in lymph-nodes These growths produced by tarring in mice were true cancers, in every way similar to classical examples on the lip and tongue of man An inevitable conclusion from the research was that the irritant did not produce cancer directly It had been suggested that loss of nervous control predisposed to cancer, but Cramer showed that tarring took longer to produce cancer on a denervated skin area than on a normal area, and the time difference was practically that which the nerves required to grow again It was usually more difficult to produce a second tar cancer than a first one

In the observations falling into the third period the claim was made that the cancerous change was produced directly, without any intermediate preparatory phase This period of work commenced 15 years ago with Peyton Rous's discovery of a sarcoma of the domestic fowl which could be transplanted to normal fowls by grafting Extracts of this tumour when freed from cells by filtration through porcelain candles which retained visible microbes, gave rise to the identical tumour when injected into normal birds, and drying the material did not prevent the transference of the tumour The fact that this tumour bred true, even when produced without living cells, and its behaviour, led to the view that its transmissibility was associated with the entrance into the body of an ultra-microscopic microbe All attempts to cultivate the virus in artificial media failed, and the infective material soon lost its power to produce a tumour when incubated at the temperature of the body Gye claimed, last year, that the loss of infectivity of the cell and bacteria-free filtrate on incubation were not due to death of the ultra-microscopic microbe, but to the destruction of an accessory chemical factor The microbe was responsible for the proliferative characters, while the specificity depended on chemical changes in the cell which permitted infection This, Dr Murray said, was the first time a microbic hypothesis of cancer had been presented in a form which was compatible with the known facts of cancer structure and behaviour He did not believe there were any other means than the experimental of solving the cancer problem

---

Extension of St Mary's Hospital, Paddington A fund of £50,000 is being raised to provide two new operating theatres and 46 additional beds, of which 13 are to be reserved for cases of accident and sudden emergency This is one of the conditions upon which King Edward's Fund has made a grant of £4000 Last year more than 1000 cases which, in the opinion of the medical officers, required urgent in-patient treatment had to be refused admission The main operating theatre is described as "*quite out of date*" and lacking in essential equipment

Reviews and Notices of Books.

A MANUAL OF THE PARASITIC PROTOZOA OF MAN

By CHARLES F. CRAIG, M D, M.A. Hon, Lieut-Colonel, Medical Corps, U S Army, D S M
London: J B Lippincott Company 1926
Pp 569 35*s*

THE rapid advances which have been made during recent years in our knowledge of the protozoan parasites of man and the diseases they cause have led to a realisation of the fact that it is essential for every medical practitioner, no matter whether he is domiciled in the tropics in temperate or even in cold climates, to be able to diagnose with a fair degree of certainty each and every species inimical to human well-being In our medical schools greater stress is being laid on the teaching of this subject, but in this both teachers and students have been sadly handicapped by the lack of up-to-date and reliable text-books Since the war several excellent monographs have appeared, dealing, however, only with parts of the field, and also a few text-books; the former were more in the nature of zoological treatises, while the latter contained much that was irrelevant and did not emphasise the practical points so vital to the medical man

To produce a work for medical students and practitioners, laboratory and research students, which would fill this want by adequately covering the salient features of the morphology, life-history relation to disease, and prophylaxis of these parasites was the main object of the author in compiling his text-book His manner of approach is an excellent one, and most methodical After a general consideration of each group the individuals of that group are dealt with in detail Thus a list of synonyms is given, subsequent history and nomenclature are discussed, and this is followed by a clear and lucid description of the morphological characters both as found in fresh and also in stained preparations The life-cycle, method of reproduction, transmission, and mode of infection of the vertebrate host are all clearly set forth, while such points as the possibility of cultivating the organism in question or of producing infections experimentally in laboratory animals receive full mention A section is devoted to the relationship which the parasite bears to the causation of symptoms of disease in man

In startling contradistinction to the lucidity of the text is the way in which the illustrations have been prepared The pictorial reproduction of the parasites is surely as important, if not considerably more so, than the written word That the student should be able at a glance to compare his microscopical findings with an accurate drawing is, as must be obvious to all who have had either to learn or to teach the subject one of the first essentials, and from this aspect the book falls sadly short of the necessary standard of excellence A wide use has been made of photomicrographs the majority of which are splendid examples of the photographer's art as applied to the microscope, but it must be remembered that the possibilities are limited in this direction, that only one focal plane containing, perhaps, a few of the main features can be registered and even then the reproduction cannot be so sharp as the visual image Thus for example, in some of the photographs of the amœbæ the nuclei are moderately sharp and clear, while the cytoplasm or body substance after all as important as the nuclear structure, is a meaningless shadow The interpretation of a photomicrograph and its appreciation are matters for those already expert and not for students With a few exceptions the illustrations, other than photomicrographs have been taken from the works of other observers Some of these reproductions do not appear to be as clear as the originals while the combining of drawings from two or more sources has resulted in fusion products which also do not appear to do justice to the original pictures The value of a subsequent edition would be greatly enhanced by the inclusion of original drawings of microscopic appearances

Where it has been necessary in the text to indicate that a certain matter is still sub judice, or that disagreement exists in the interpretation of certain phenomena, the author has endeavoured to state both sides of the question fairly and without bias For example, he quotes the classifications of the amœbæ in man according to Dobell and Stiles and Boeck, is in complete agreement with neither, and finally gives a classification according to his own views. Indeed, it may be said that only in the case of *Craigia hominis*, not yet accepted as a true parasite of man by the majority of European, and more particularly British workers, does any suggestion of partisanship become evident, and, as this was described in the first instance by Craig himself, has been accepted by such authorities as Kofoid and Swezy, but has been rejected by others on what Craig considers to be inadequate evidence, his attitude on this question is only natural Generally speaking the author's teaching is in accord with the bulk of modern scientific opinion, and there are no large departures from the orthodox. We note, however, that he separates the parasite of æstivo-autumnal or malignant tertian malaria into two subspecies, *Plasmodium falciparum* and *P falciparum quotidianum* Again in this section on malaria his use of certain expressions might conceivably give rise to confusion The term spore should not be applied to the products of asexual multiplication—the merozoites—nor should gamete and gametocyte be used interchangeably. Sporulation, too, although used for many years now to indicate the final stages of the asexual cycle in man or schizogony, would be better applied to the formation of the sporozoites in the mosquito

At the end of each chapter the author has given a list of references of the more important papers dealing with the subjects covered in that section This list is not intended to be a complete bibliography; it contains more especially the recent work, and should be regarded by the student as an introduction to the literature Another most useful feature is the technical appendix, in which is included the more important laboratory methods of cultivating or preparing permanent stained preparations of the parasitic protozoa

We have no hesitation in recommending this book to the medical practitioner or the medical scientist as one of the best accounts of this important branch of medicine in English One or two important additions might be made with advantage The absence in the present volume of coloured plates showing the malarial parasites at all stages of development, and of the trypanosomes and allied flagellates, is noticeable. The number of original diagrams illustrating life-cycles should be increased and those already included should be carefully revised There would seem little doubt that a demand for a second edition will give the author early opportunity to make these improvements

---

NUTRITION.

Troubles des Échanges Nutritifs By C ACHARD, Professeur de Clinique Médicale à la Faculté de Médecine de Paris, Membre de l'Académie de Médecine. Paris: Masson et Cie 1926 Two vols Pp 1220 Fr 110.

IN these handsome volumes Prof. Achard has adopted a new classification for the discussion of dietetics and all those diseases which chiefly affect nutrition. Physiology is his basis and he considers in sequence all methods by which the body can ingest gases water mineral matter, carbohydrates, fats and lipoids, and lastly nitrogenous substances. "L'esprit gaulois," says one of Meredith's characters, "sparkles with the clear crystal of common sense," and in choosing this classification Prof. Achard has not only been able to display his facts in logical sequence, but has succeeded in approaching nearer

FRACTURE OF THE ANATOMICAL NECK OF HUMERUS WITHOUT APPARENT DIRECT VIOLENCE

By F Milnes Blumer, M B , C M Edin ,
SENIOR HONORARY SURGEON, STAFFORDSHIRE GENERAL INFIRMARY

The patient, a farmer, aged 38, dislocated his right shoulder some six or seven years ago while in an epileptic fit I reduced it, and the normal function of the joint was regained On Jan 19th, 1924, I received a message to say he had again put his shoulder out On reaching the house I found him lying on his back on the floor His wife told me that, feeling a fit coming on, he promptly lay down As the fit developed he stretched his arms straight down by his side with his muscles in tense contraction The wife said she then heard a click, which told her he had again dislocated his shoulder The patient, she insisted, never fell, but had lain down quickly, as was his custom, and received no blow of any kind As the joint appeared to be dislocated, I proceeded to reduce it under chloroform, and on manipulating it I felt crepitus, and could not completely correct the deformity Examination under X rays two days afterwards revealed fracture of the anatomical neck This was confirmed when I operated a week later and removed the fragments, which were loose within the capsule There was no injury to the glenoid The wife is an observant and intelligent woman, and her statement that there was no direct violence can be accepted How, then, was the fracture caused ?

The patient has now a good range of movement at his shoulder, and is able to do all his work

Medical Societies.

RESEARCH DEFENCE SOCIETY

ADDRESS BY DR J A MURRAY

The annual meeting of this Society was held on June 25th at the rooms of the Medical Society of London, Lord Lamington, the President, occupying the chair

The President referred to the sense of loss and sorrow felt by those responsible for carrying on the Society's work at the death of Mr Stephen Paget The Society owed its inception entirely to Mr Paget, and it was he who had safeguarded its interests during difficult times

Lord Knutsford said that this was the first meeting the Society had ever held without the presence of Mr Paget Although sometimes misrepresented by those who opposed him, Paget's activities were due not to a love of controversy, but to his hatred of everything which savoured of untruth and misrepresentation The committee had decided to establish a Stephen Paget Lectureship at various universities and seats of learning, and it was hoped to send a good speaker, every year or every second year, to different centres in memory of his work

At the end of the business meeting Dr J A Murray gave an address on the

Experimental Attack on Cancer Problems

The experimental study of cancer, he said, was started 25 years ago, and its progress could be conveniently divided into three periods The first embraced the work of Jensen and Borrel on transplantation of animal tumours, the second was that in which Fibiger, Yamagiwa and others produced cancer de novo in normal animals, while the third period was that in which the possibility of a microbic origin was worked at by Peyton Rous, Blumenthal, Gye, and Barnard

Jensen and Borrel, he said, showed that cancerous growths in tame white mice could be propagated in series in normal animals of the same kind by introducing fragments of the original growth under the skin, and Bashford showed that cancer in mice presented all the features of the malignant new growth of man and the larger domestic animals, features also reproduced in the course of the propagated tumours obtained by transplantation It became evident that the cancer cell behaved as it did because of differences inherent in it or permanently imposed on it, not because of constitutional peculiarities of the individual in which the growth had arisen. Jensen found that animals in which a first transplantation had failed were resistant to a second grafting Lumsden had recently shown that a serum against rat sarcoma could be produced in the rabbit, and under certain conditions this serum was found to have a curative action

Dealing with the second of his periods, Dr Murray referred to the forms of cancer which followed long-continued irritation Prof Yamagiwa, of Tokyo, painted rabbits' ears with tar week after week for long periods, and in some instances growths resulted which continued to grow after the tarring had been discontinued, and in a few of these cases metastases were observed in lymph-nodes These growths produced by tarring in mice were true cancers, in every way similar to classical examples on the lip and tongue of man An inevitable conclusion from the research was that the irritant did not produce cancer directly It had been suggested that loss of nervous control predisposed to cancer, but Cramer showed that tarring took longer to produce cancer on a denervated skin area than on a normal area, and the time difference was practically that which the nerves required to grow again It was usually more difficult to produce a second tar cancer than a first one

In the observations falling into the third period the claim was made that the cancerous change was produced directly, without any intermediate preparatory phase This period of work commenced 15 years ago with Peyton Rous's discovery of a sarcoma of the domestic fowl which could be transplanted to normal fowls by grafting Extracts of this tumour when freed from cells by filtration through porcelain candles which retained visible microbes, gave rise to the identical tumour when injected into normal birds, and drying the material did not prevent the transference of the tumour The fact that this tumour bred true, even when produced without living cells, and its behaviour, led to the view that its transmissibility was associated with the entrance into the body of an ultra-microscopic microbe All attempts to cultivate the virus in artificial media failed, and the infective material soon lost its power to produce a tumour when incubated at the temperature of the body Gye claimed, last year, that the loss of infectivity of the cell and bacteria-free filtrate on incubation were not due to death of the ultra-microscopic microbe, but to the destruction of an accessory chemical factor The microbe was responsible for the proliferative characters, while the specificity depended on chemical changes in the cell which permitted infection This, Dr Murray said, was the first time a microbic hypothesis of cancer had been presented in a form which was compatible with the known facts of cancer structure and behaviour He did not believe there were any other means than the experimental of solving the cancer problem

---

Extension of St Mary's Hospital, Paddington *A fund of £50,000 is being raised to provide two new operating theatres and 46 additional beds, of which 13 are to be reserved for cases of accident and sudden emergency* This is one of the conditions upon which King Edward's *Fund has made a grant of* £4000 Last year more than 1000 cases which, in the opinion of the medical officers, required urgent in-patient treatment had to be refused admission The main operating theatre is described as "*quite out of date*" and lacking in essential equipment

THE LANCET.

LONDON: SATURDAY, JULY 3, 1926

TUBERCULOSIS AND EMPLOYMENT.

Every chronic disease has its own social and economic problems, and the unsolved problem of tuberculosis is employment In the early stage of the disease rest for body and mind is the one great desideratum, but a time soon comes when employment is essential to preserve a healthy mind in an unsound body, and many years follow in which the sustenance for an unsound body can only be derived from remunerative employment. A Committee of the Joint Tuberculosis Council undertook some 18 months ago to make a survey of the whole question of the employment of the consumptive with special reference to schemes at present in existence. This Committee, which consisted of Dr. Jane Walker (London), Dr D. P. Sutherland (Manchester), Dr. H. Vallow (Bradford), and Dr J B McDougall (Hexham), has now circulated what is in the main an agreed report dealing with all aspects of the problem—medical, social, and economic

Except in the rarest instances the worker who has broken down from tuberculosis can never safely compete again in the industrial machine Even with quiescent disease his work is apt to remain 30 or even 50 per cent less efficient than that of a healthy workman similarly trained, and the Committee was unanimous in its belief that the total number of ex-sanatorium patients who may be ultimately employed on a remunerative financial basis can only form a small fraction of those who are fit for some employment. Finance hitherto has dominated the situation, and even the modest recommendations of the Barlow Committee to provide ten village settlements of 200 to 250 families each at a cost of a million pounds has not been realised In the Committee's opinion the best method of attacking the problem is to develop occupational therapy at existing sanatoria, to make so-called training an integral part of treatment until by coöperation and efficiency it becomes possible to pay maintenance and wages for one permanent settler, then for another, and so on until a nucleus of a settlement has been formed It is in this way that successful schemes have arisen, and the Committee is able to point to examples of institutions founded de novo as training colonies and settlements with ample capital outlay where the return has been disappointing It is a necessary preliminary to ascertain what is the economic unit for any sanatorium industry. The question of markets is a business affair, and investigation into the London leather-workers' scheme for ex-patients suggests that if it could be increased so as to employ 50 men the scheme would be self supporting and the present overhead charges fully met. At some stage capital expenditure becomes inevitable unless a scheme is to be crippled by inability to extend departments of work which have been set running on sound lines; and in order to provide capital for such development the Committee recommends that sums of money from £200 to £500 should be made available after a definite scheme submitted by the medical director has been approved by the lay management responsible. Whether this money should be subscribed by voluntary contribution to a central fund or by a levy on the local authority is open to discussion, but in either case it is clear that the local authority should take its share in housing employees when that need arises. The difficulty is that in any such scheme there is singularly little margin for mistakes. No fewer than 51 different occupations have been suggested as suitable for ex-patients, and the Committee recalls a remark made by the director of the New York Tuberculosis Association, already quoted in our columns that "teaching Chinese to a negro, infusing a Latin-American with a puritanical outlook on life, or inducing statesmanship in a politician are problems equal in toughness to finding a suitable job for a tuberculous person and keeping that person in that job"

Farm work is certainly too arduous for ex-sanatorium patients, although the raising of poultry, fruit-farming, and bee-keeping are all admissible as well as the supervision of the production of the laboratory animals. Any workshop occupation chosen should be one which does not require a long period of preliminary training and which is principally repetition work resulting in mass production of an article for which there is a current demand. It is better, the Committee thinks, to specialise in a few than to have mediocre results from many employments, and for the nucleus of any department there is always needed a specialist with previous training who becomes the key-man to its output. Nor is the supply of suitable directors for such schemes likely to be abundant, for the director has to combine medical oversight with a good general knowledge of industry; no matter what facilities there may be in the way of markets or workshops or even capital, any scheme is doomed to failure without good business organisation, capable direction, and proper coöperation. But when all the requisites are present there is no limit to the possible success of such a scheme, which may grow from a small beginning to a big social movement and the Committee no doubt is right in recommending that schemes which have been admittedly successful should be encouraged to develop further by being freed from the obligation to raise capital by their own efforts Such schemes should then be copied in principle in other places.

CHOLECYSTOGRAPHY.

One of the finest examples of fruitful results proceeding from academic medical research is the evolution of tests for the function of the kidneys and liver, which was led up to by the investigation of the pharmacology of phenolphthalein compounds. Phenolphthalein occupies a curious place in physiology, for one of its compounds, the sulphone derivative, is excreted almost solely by the kidneys, whilst the halogen compounds are excreted partly by the kidney, but to a greater extent by the liver. The phenolsulphonephthalein test for renal function has been established for a number of years. When it was discovered that the chlorphenolphthalein compound was excreted very largely by the liver, an analogous test measuring the amount of the substance in the blood stream and its rate of elimination was devised for estimating the functional power of the liver cells. It having been established that the drug was excreted mainly by the liver, and the work of Rous and McMaster having demonstrated that bile is concentrated in the gall-bladder, and it having been observed that the bromo- and iodo-compounds were opaque to X rays, it occurred to E A. Graham that it might be possible to obtain a shadow of the gall-to a scientific classification than have the vast majority of his predecessors In subsections, each in its appropriate place, he discusses the disturbances attendant on the faulty elimination of the metabolic end-products, and hence his work embraces nearly all the problems of disease amenable to dietetic treatment It is clear that to be perfect his system requires an exact knowledge of the chemistry of all substances physiologically absorbed by the body, and that knowledge is not yet wholly ours Thus the diseases known collectively as " deficiency diseases " are due to an absence of food constituents still largely mysterious, and in consequence the author has included very few words concerning scurvy or beri-beri and has not attempted any discussion of less tangible forms of avitaminosis Similarly, the disturbances of health, such as chronic constipation, which are often the result merely of an ill-balanced diet, find no place in these volumes, as no upset of " nutritional exchange " can be noted in their case

In a modest preface the author points out the impossibility of including the latest advances in a book of this size, but it is so fully documented with references to the work of foreign observers that we feel that such an apology was superfluous His book will be highly appreciated by physicians in every country, and is worthy of the high traditions of French medicine

---

THE DIABETIC LIFE ITS CONTROL BY DIET AND INSULIN

By R D LAWRENCE, M A, M D, Chemical Pathologist and Lecturer in Chemical Pathology, King's College Hospital London · J and A Churchill 1926 Pp 167 7s 6d

WITHIN a year of the publication of this useful manual a second edition has been called for Dr Lawrence points out that while no revolutionary discoveries have been made since the book was written, yet many new facts of practical importance have been established and have been incorporated in this edition The chief changes consist in a rearrangement and further simplification of the line-ration scheme, and in the addition of some detailed examples of diet and a table for emergency use in coma We have already expressed admiration of the way in which Dr Lawrence has reduced this most complex and difficult subject to a level where doctor and patient can meet There can be no better preparation for the tedious task of training a diabetic how to control his life than a study of this little book by his medical adviser, and no surer way of acquiring the patient's cooperation than the purchase by him of another copy for his own use

---

JOURNALS

INDIAN JOURNAL OF MEDICAL RESEARCH April, 1926 —This journal contains some interesting papers M B Soparkar, as the result of extensive experiments, concludes that Indian cattle as a whole are less susceptible to tuberculous infection than are European varieties —J W Cornwall and W A. Beer describe some peculiarities of *B typhosus* in broth cultures They also suggest a method of assessing the infectivity of rabies fixed virus, and, in a further paper, discuss the effect of injection of etherised normal brain substance in connexion with the treatment of this disease —R McCarrison gives an account of an eight months' investigation into the effect of excessive lime consumption upon the thyroid gland, and his conclusions on the connexion between lime and iodine ingestion have some bearing on the ætiology of " colloid goitre "—From the Haffkine Institute, B P B Naidu, R H Malone, and C R Avari write on the potency of Haffkine's plague prophylactic *A pattoni*, a new species of anopheles found in Shantung, is described —J A Sinton publishes some investigations on subtertian crescents, and finds that the number of crescent carriers after " quinine and alkali " treatment was less than after any other form of treatment tried —H E Shortt, P J Barraud, and A. C Craighead give methods for feeding and refeeding sandflies, and in another paper describe the life-history and morphology of *Herpetomonas donovani* in the sandfly, *P argentipes* —As the outcome of a commission appointed to investigate sandfly fever in the Peshawar District, T C McCombie Young, A E Richmond, and G R Brendish publish the account of an extensive survey and give important recommendations aimed at the reduction of the sandfly

BRITISH JOURNAL OF CHILDREN'S DISEASES Vol XXIII April-June —Dr. Bernard Myers furnishes statistics concerning the height, weight, and other measurements of 1400 London school-children derived from his observations at the Children's Clinic, Cosway-street, Marylebone-road Tables are given showing the measurements of the head, chest, abdomen, intercristal diameter, height and weight for both sexes , comparisons of the height, head and chest measurements for both sexes at various ages , and comparisons of these measurements with Greenwood's figures for other English children and Baldwin's statistics for American children Myers remarks that invaluable information would be obtained if similar measurements of males and females could be made in all parts of the British Empire —In a paper on varicella encephalitis and vaccinia encephalitis Dr D W Winnicott and Dr N Gibbs have collected 12 cases of varicella encephalitis including one under their own observation The patient was a girl aged 2 years, who nine days after the onset of varicella developed symptoms of encephalitis, such as difficulty in swallowing and articulation, squint, spasticity of the limbs, and mental dullness, which lasted for about a month, after which complete recovery took place The fact that the number of days between the onset of varicella and the onset of nervous symptoms has been fairly constant in all the cases, but one is a record suggesting that there is more than a mere coincidence at work Winnicott and Gibbs have also collected 44 cases of vaccinia encephalitis , 35 of these were reported by Bastiansee in Holland, and of the others one was a case of their own of a male child aged 5 months, who six days after vaccination developed right facial paralysis, left ptosis, left internal strabismus, and convulsions Complete recovery took place within six weeks —In a paper entitled Further Observations on Acrodynia, Dr A. E Vipond summarises the cardinal signs of the disease as follows the onset appears to be a nasal catarrh, followed by a rash, which is often erythematous but may be papular or pustular The hands and feet present a bluish-red appearance, as well as the tip of the nose, ears, and eyelids The locomotor system is affected, the child being unable to walk The sensory system is also involved, there being intense pain in the arms and legs All the superficial glands are enlarged, especially those in the axilla and inguinal region Rapid loss of weight occurs The duration of the disease is from four to six months Vipond has obtained good results from the use of a vaccine prepared from an enlarged gland —Dr C I Wright reports an unusual case of herpes recurrens The patient was a girl aged 12, suffering from a moderate attack of diphtheria with an abundant eruption of herpes facialis on both cheeks, remarkable for the presence of several rounded tense unilocular bullæ, the largest of which was half an inch in diameter For the last three years the child had had recurrent attacks of herpes on one or other cheek about three times a year, but in no previous attack had the lesions been bilateral The mother, who was subject to labial herpes, stated that at the age of 4 years the child had had an attack of eczema which may really have been herpes —The abstracts from current literature are devoted to acute infectious diseases

Health Service, by those of the School Medical Service, by those of the National Health Insurance system, and by the activities of the hospitals, and, taking the whole record as it at present stands, certain broad deductions can be drawn from the facts and figures in regard to the physical condition of the English people—we can learn what has been done and judge how much remains for accomplishment Thus a steadily falling birth-rate is accompanied by a steady decline in death-rate at all ages, but with an increased expectation of life from birth upwards The infant mortality rate, though it now stands at 75 per 1000 births (one of the lowest ever recorded) is still unnecessarily high, but the burden of epidemic and infectious disease is growing lighter and with certain exceptions the figures show steady decrease both in incidence and mortality The victory of preventive medicine over certain infectious diseases has been accompanied in recent years with general improvement in sanitary environment, but both these facts call for qualification Tuberculosis, cancer, measles, and influenza are still unduly prevalent, rheumatic conditions affect a large section of the population, venereal disease, though recent activities have certainly been satisfactory in promise and performance, accounts for much sickness and mortality; while it is an open shame that the supply of houses is insufficient and frequently of discreditable quality, a position which hampers preventive medicine to an untold extent There is also far too much minor invalidity and, though the general death-rate has fallen, an undue proportion of deaths still takes place under 50 years of age Preventable morbidity and invalidity of all kinds call for the wide but intensive application of the activities of preventive medicine That is in effect the message of the Memorandum

The document is written, as might be expected, with skill in marshalling facts and in drawing succinct conclusions from them, this being done with due regard for the risks of being over positive It is sure to be widely read, as it was in its original form, by the public as well as the medical profession, and knowledge of the facts contained would form a practical adjunct to medical education Medical students in the later phases of the curriculum should be urged to read it, for it lays before them clearly and simply the fundamental principles of their future work—namely, to prevent disease

Annotations.

"Ne quid nimis"

THE PATHOLOGICAL ACTION OF LIGHT

Finsen, in a small but classic work, describes in a delightful way the response of the living to light, how birds break into song, and children into laughter with the coming of the sun Beneficent in its action in the vast majority of cases when living things are exposed to light, some pathological conditions do supervene, and these may occur either in normal people if they are given too much light or in hypersensitive individuals if they are exposed to light of an intensity enjoyed by the majority Where cause and effect are related so obviously as exposure and physiological response to sunlight it is remarkable how little is known of the mechanism of this action Could the phrases of Finsen be written in stricter physiological terms, an understanding of the pathological states induced by light would perhaps be assured As it is, information gleaned from clinician, physiologist and pathologist is grist for the mill It is doubtful whether any organ of the body could illustrate so well as the eye the different varieties of disturbances in living structures caused by light, and the recent communications of Dr W S Duke-Elder in our columns will serve not only to bring within moderate scope a host of scattered facts but also to show the complexity of the processes in front of those who essay the rôle of phototherapist While in some cases the action of the rays is attributable to an exaggerated physiological response, capable of correction by the rebalancing forces of the body, in others the upset of equilibrium in carried beyond this stage and physicochemical changes of an irreversible character, such as coagulation or precipitation, occur There appear to be two main lines of defence, apart from clothing, by which the surface of the body is protected from excessive light One is pigmentation which absorbs ultra-violet and visible light to an extraordinary degree, converting this energy into heat; the other is fluorescence, which transforms rays of short wavelength into longer ones (never shorter), in many cases thus protecting the tissues from rays which have such powerful effects upon them. Except for these processes, the body has to deal as best it may with light beating upon it The discoveries on the action of light in countering certain diseases have opened enormous fields of research, and the fact that light can endow certain foods with new and valuable properties will not be lost upon those who are seeking to explain its biological actions, for it is possible that foodstuffs within the tissues are to some extent altered by exposing the body to light. Medicine now takes stock of radiation of widely differing wave-lengths for heat, light, ultra-violet, X rays, and the gamma rays serve its various needs The pathological conditions which they have initiated in man are incomparably fewer than those they have alleviated, but the need for more investigation of the processes set going in living things by these rays is a pressing one

THE ACTION OF HISTAMINE

THE vaso-dilator action of histamine and its physiological significance is discussed by J. H. Burn and H. H Dale in the April number of the *Journal of Physiology* (vol lxi, No 2) The observations recorded were undertaken to complete those of Dale and Richards made in 1918 What may be called the histamine paradox has been the subject of much discussion In the cat, which has been the usual subject for experiment on its action histamine regularly produces, under anæsthesia, a powerful depressor effect having all the characteristics of a general vaso-dilatation; in perfused organs from the same species histamine has been found habitually to produce not vaso-dilatation, but vaso-constriction in its place. Explanations of widely different kinds have been offered for this paradox. It was found that the vessels of a cat's limb artificially perfused with blood are relaxed by histamine The tone favouring this reaction is evanescent, but can regularly be restored by a trace of adrenalin, and occasionally by pituitary extract The vessels of the limb of a monkey or dog, artificially perfused, are relaxed by histamine, and the reaction can be obtained repeatedly. The perfused arterioles of the cat are constricted, those of the dog relaxed by histamine It is suggested that the predominant incidence of the histamine dilator action on the capillaries is peculiar to the cat There is evidence that a secondary pressor effect of histamine is due to accelerated output of adrenalin; and that the depressor effect of small doses of adrenalin seen in the anæsthetised cat or dog is also a secondary effect due to liberation of a histamine-like principle The bearing of these observations on the chemical control of capillary tone is discussed. To the same issue of the journal O Inchley contributes some observations on histamine shock It is generally accepted that histamine is a direct poison to capillaries, leading to their dilatation This dilatation is associated with a fall of blood pressure and a state of collapse Capillary dilatation is the characteristic phenomenon of histamine shock as well as of shock by other substances Dale's view which is generally accepted, is that histamine acts directly on the capillaries. The author suggests another and simpler explanation to account for the effect—*namely*, that the dilatation of capillaries is passive and due to a constriction of the veins.

bladder after preliminary administration of one of these drugs. This proved to be the case, and the procedure has been developed so that it can be applied in human pathology and has received the name of cholecystography. Considering the fact that Graham's preliminary report was only published in 1924, a very considerable amount of knowledge has been collected on the subject, and the method, although not yet standardised, has become definitely established in clinical medicine. Mr. **Stanford Cade** in his Arris and Gale lecture, appearing elsewhere in this issue, has reviewed the known facts, communicated some experiments bearing on the subject, and given his experience of the method used in 100 patients. Dr. **Izod Bennett**, Dr. A. **Moncrieff**, and Dr. F. G. **Nicholas** also record this week their clinical experience in 58 cases.

There are two methods of carrying out the test, one is to give the drug intravenously and the other by mouth. Mr. **Cade** is convinced that the intravenous method is the better and regards oral administration as unreliable, whilst the other investigators, agreeing with some reports that have come from America, consider mouth administration preferable. The objections to intravenous injection are two. One is the fact that if the slightest drop of the solution escapes outside the blood-vessel into the subcutaneous tissue, extensive sloughing and inflammation occur, the other is that intravenous injection is not always without an element of danger. Even Mr. **Cade** reports two serious cases of collapse in his series and the experience of other people agrees with this, whereas after oral administration the worst that happens is that the patient may suffer from vomiting and diarrhœa. One of the essentials for the general application of a diagnostic method is that it should be without danger. There is no doubt that the intravenous method gives better shadows and is on the whole more reliable than the oral administration, so there is every incentive to make the former method as safe as the latter. It is hoped that investigations will continue in this direction. The difficulties met with after giving the drug by mouth are due to the fact that it must be protected from contact with the hydrochloric acid in the stomach, for by the action of gastric juice the chlorphenolphthalein compound is produced, a substance which is not only insoluble, but does not give a shadow with X rays. It is not easy to make a capsule which will certainly escape gastric digestion and yet be disintegrated within the intestine. Whether such solution of the capsule has taken place, however, can be seen when the subsequent skiagrams are inspected. The dose which can be administered by mouth is no greater than that by the veins, for if it is increased, vomiting is produced and the test is spoilt. If after taking the drug by either route a good shadow of the gall-bladder is obtained, it may be confidently inferred that the gall-bladder is healthy. If no shadow is seen after intravenous injection, or after oral administration, provided there is reasonable certainty that the drug has been absorbed, then the conclusion must be drawn that the wall of the gall-bladder is diseased, that it has lost its powers of concentration, or that the cystic duct is blocked so that none of the drug arrived in this viscus. Not only does the clinician take note of the presence of a shadow, he also observes the rate of diminution in size of the opaque area, which is dependent upon gall-bladder contractions.

To test the contractile power of the gall-bladder L. R. **Whittaker**[1] advises that when a good shadow with X rays is observed, food rich in cream and butter should be given to the patient. The shadow should then disappear within 2–3 hours, instead of continuing for 24. Fats have been proved to be the most powerful stimulus to contraction of the gall-bladder. Magnesium sulphate introduced into the duodenum by an Einhorn tube will also cause the shadow to shrink, but not so quickly and not to so great a degree. Gall-stones are rendered evident after the test sometimes by giving a mottled appearance to the shadow (they are transparent to the X rays and each stone causes a hiatus in the opacity), sometimes by absorbing the dye in sufficient amount to become opaque themselves. The animal experiments reported by Mr. **Cade** support the investigations of other observers, showing that none of the dye reaches the gall-bladder by the blood stream, nor is it absorbed from the wall of the gall-bladder. That is, disappearance of the shadow is due to propulsion of the dye from the gall-bladder down the cystic duct. There appear to be but few fallacies when the test is properly carried out. Even allowing for enthusiasm for a new and ingenious procedure, the results of cholecystography reported from all quarters show such a degree of reliability that the method is certain to obtain a permanent place in diagnosis.

◆

THE PRACTICE OF PREVENTIVE MEDICINE[1]

About seven years ago when public affairs in every direction were attempting to shape themselves towards the many new conditions imposed upon all society by the war, a memorandum was addressed to the Minister of Health by Sir **George Newman** entitled "An Outline of the Practice of Preventive Medicine" which formed a valuable piece of topical history. The outline was large in scope and elaborate in detail despite its title, and as it was published at a very modest price there is no doubt that many of our readers read and digested its lessons. It is certain that the great public who take an administrative as well as a theoretical interest in the progress of national health did so, for this week a new edition of the memorandum appears in response to the fact that the first edition has been out of print for some time. The form of the document has remained unchanged but a considerable amount of new matter has been added to the text, while the whole of it has been revised.

Taking as a general thesis that the purpose of the science and art of preventive medicine is to apply human knowledge to the prevention of disease, the author, after a brief disquisition on the modern developments of medicine, especially in practical application, analyses the nature of disease, showing that the body must be judged by its heredity, nurture, potentialities for nutrition, and its habits when estimating its resistance to injury—or infection, resistance to infection introducing the principles of epidemiology. These are laid down in a few clear lines, in which the secular trend, the epidemic constitution cycle, the seasonal cycle, the climatic and immunisation factors, and the biological change of state of the virus are considered, indicating the all-round nature of the document and the determination of its author to explain what he intends to teach. In face of the actual problems we have indicated the various avenues of approach to their comprehension. The main directions in which the practice of preventive medicine has to be conducted for the public good are illustrated by the results generally of the Public way. Sulphosalicylic acid precipitates albumin In these ureas there are sulpho-acid groups which act on the albumins of the parasites (perhaps on the protamine) forming salts that are only slightly soluble Thus the chromatin from the milt of herrings is a neutral salt, clupein nucleinate. and the clupein base combines with acid dyes to form salts insoluble in water. In the same way. the bases in the cell contents of the parasites (trypanosomes and the like) combine with the sulpho-groups of Bayer ' 205 ' to form barely soluble salts, the parasitic chromatin being therewith hampered. as if filled up with bird-lime or with glue, made physiologically less active, and the cell is to some extent thus withdrawn from metabolism. Many substances have been examined, and those that gave the best antiparasitic results had only the sulpho-groups in common, so it was this group that was thought to be the effective part Ureas with either benzol or naphthalin groups may be effective. but they must have large molecules if their action is to be lasting and they must have a certain number of sulpho-groups able to combine with basic substances in the cells of the parasites to form salts only slightly soluble in water Little is known of the bases that exist in albumins. The chemist cannot say in advance whether the salts will be soluble or no only actual experiment can decide that. The acid part of the substituted urea combines with the basic part of the chromatin of the parasite. metabolism is slowed. cell division is hindered, and reproduction is delayed or ended for the time. In this series of antitrypanosome drugs although there is no toxophore group, like the poison on the arrow, kept applied by the haptophore barb yet the haptophore sulpho-group attaches itself to the chromatin, and so lowers the vitality of the parasite that it dies tired out, like a whale worn out in dragging the ship after him by the rope, though the harpoon was not poisoned The subsequent distribution of the drug in the host or patient is important. It may circulate in the serum and be thence taken up by the parasite at once, and at times this action takes place very quickly · in 15 or 30 minutes the parasites may be so much altered that though their number is unchanged. the blood is no longer infectious If the drug remains in the serum it is probably effective for a shorter time than if it is absorbed and stored by the cells of the body—on the analogy of Congo red which is at once taken up from the blood by waxy or amyloid substance, so that none remains in the serum after a very short time. Variation in storage explains why the effective dose against the same parasite differs in different animals. If the drug is stored, it is gradually released and eliminated whereby the parasite has a prolonged exposure to the drug, though at a lower concentration When the drug has been nearly eliminated its " pressure " falls too low. and the parasite, if not already destroyed, begins again to increase and the patient suffers a relapse, unless given a new dose. Hence the reason for a course of injections The weakened parasite may succumb to the protective chemistry of the host (i.e the antibodies formed), but if the host has no protective power and cannot form antibodies, antimony may be given. Races of parasites may be grown immune to particular ureas but still susceptible to others perhaps even to others closely allied The constitution of the parasite has been so changed that it has learned slightly to alter the bases in its albumins so they shall not form any but soluble salts with the acids in the drug Picric acid has a very similar action but nitrates are less useful than sulpho-salts for the molecule of soluble nitrates is too simple while the nitrates of sufficient molecular weight are too insoluble to be available for injection On the other hand the soda salts of the sulpho-acids are easy to work with Dr Roehl concluded his review of the action of " germanin with an expression of gratitude to the chemists who. led by Dr. Heymann had worked with him Only by effective combination of chemist and chemotherapeutist, he said, can results be won

---

[1] Jour. Amer. Med. Assoc., 1926, lxxxvi., 230.

[1] An Outline of the Practice of Preventive Medicine. A Memorandum by Sir George Newman, K.C.B., M.D., F.R.C.P., Chief Medical Officer of the Ministry of Health. London: His Majesty's Stationery Office. 1926. 1s.

SLEEPING SICKNESS IN TANGANYIKA TERRITORY.

An epidemiological survey of human trypanosomiasis is at present being undertaken by an international League of Nations Commission in Central Africa. Prof F K Kleine is engaged in Tanganyika Territory on this work The extreme variations in pathogenicity of the human trypanosomes, as well as the diversity in the clinical aspects of the disease in widely separated districts are among the complex problems being studied. The outbreak in Mwanza on the south-eastern shore of Lake Victoria in 1922 was originally investigated by H. L Duke [1] and C. F M. Swynnerton.[2] Several interesting and novel facts were elicited during the course of this epidemic which proved to be one of exceptional severity. It was found, contrary to expectations, that the trypanosome belonged to the *rhodesiense* type and was transmitted in a direct manner from one infected individual to another by a new species of tsetse-fly which became known as *Glossina swynnertoni*. It could not be definitely ascertained whether or not the particular outbreak was attributable to the fact that in the absence of big game, which had entirely deserted the district, the tsetse, deprived of this service of food-supply, had been entirely dependent on human blood The novel views of Duke and Swynnerton have been opposed by J. B. Davey [3] from his own personal experiences in this territory. A recent report to the Secretary of State for the Colonies concerning sleeping sickness in Tanganyika Territory would seem to indicate that the *rhodesiense* infection is more widely spread than had been supposed. Prior to 1914 this infection had not been recorded further north than the shores of Lake Nyasa Now we understand that Rhodesian sleeping sickness exists in (*a*) the Mwanza area, where the original outbreak was discovered in 1922; (*b*) near Ikoma, situated about 50 miles north-east of the area mentioned above (there is considerable inter-communication between the natives of these two areas and it is possible that at least some of the cases detected in the Ikoma district were infected in the Mwanza): (*c*) in the Liwale sub-district of Kilwa—this appears to be a localised outbreak of low virulence: (*d*) in the southern portion of the Tabora district and northern part of Ufipa. This is the most extensive area found to be infected, more than 10,000 square miles of country being involved Approximately 300 cases have been reported with 90 deaths The type of disease is similar to that described in Nyasaland and by Kinghorn in Northern Rhodesia cases being found in villages widely separated. and as a general rule only a very small portion of the inhabitants are infected. Rarely the disease becomes epidemic in a localised community, and when this is so it appears probable that some concomitant cause is present, such as marked shortage of food. This not only results in lowered vitality but also in increased contact with the fly due to more frequent visits to the forest for the purpose of hunting and in search of food The methods adopted to prevent the spread of the disease have in the main been confined to the treatment of infected cases and the concentration of the population in fly-free clearings. Treatment has been principally by ' Bayer 205 ' and by tryparsamide. The former has proved very effective in early cases when given in adequate dosage while tryparsamide gives better results in cases in which the nervous system is involved. Cases of sleeping sickness due to infection by *Glossina palpalis* continue to occur in the neighbourhood of Kigoma 14 cases being reported

---

[1] Duke H L. An Inquiry into an Outbreak of Human Trypanosomiasis in a *Glossina morsitans* Belt to the East of Mwanza, Tanganyika Territory Proc. Roy. Soc., Jan. 4th. 1923 Ser B xciv 250–265

[2] Swynnerton C F M · The Entomological Aspects of an Outbreak of Sleeping Sickness near Mwanza Tanganyika Territory Bull Ent Res January, 1923 xiii. Pt 3, 317–370.

[3] Davey J B Trans Roy Soc Trop Med and Hyg., Nov 19th and Dec. 17th 1925 xix., Nos 5 and 6, 336–338.

In a circulation through intact arteries, capillaries, and veins, where a variable resistance may be imposed in any one of the three, it is difficult to draw conclusions as to which is affected in altered circulatory conditions Experiments were devised to examine each of these factors separately On isolated organs of cats and rabbits—e g , intestine, liver, muscle of a limb—experiments were made with perfusion of arteries and capillaries without veins, and perfusion of veins and capillaries without arteries In an excised loop of small intestine of the cat perfusion with oxygenated Ringer with the addition of histamine phosphate was made through arteries or veins without capillaries Ring preparations of the mesenteric artery and vein of the pig were studied when immersed in Ringer's fluid, to which different concentrations of histamine were added and the effects recorded The results suggested that vascular constriction under histamine is mainly venous Experimental occlusion of veins—inferior vena cava above the entrance of the renal veins, and the portal vein—was made in anæsthetised animals Large veins were painted with a strong solution of histamine in an anæsthetised animal and the effects—local and general—studied , and lastly, the effects of intravenous injection of large doses of histamine were examined The author discusses his results, and concludes that histamine in low concentrations constricts the veins, leaving the arteries unaffected, such constriction leading to passive dilatation of capillaries Long-continued occlusion of great veins leads to permanent relaxation of capillaries The author concludes that histamine shock is best explained by venous constriction

THE ÆTIOLOGY OF ECZEMA

THE perplexing problem of the ætiology of eczema is discussed by Dr F F Coombes in an authoritative essay forming part of a symposium on dermatology recently published in America [1] He stresses the fact that during the last 50 years the frequency of this diagnosis has been reduced from about 60 to 20 per cent of all cases of skin disease, and explains the reduction as due to (1) the recognition, both microscopic and cultural, of a large class of bacterial and mycotic parasitic infections , and (2) the elimination from the scrap-heap of eczema of those cases of dermatitis which are dependent on an external cause of irritation and do not proceed to the formation of vesicles As examples of the first class are instanced seborrhoeic dermatitis, infectious eczematoid dermatitis, due to the *Staphylococcus aureus* and *albus*, and cured by the local application of mild antiseptic remedies, and a very large and increasing group in which a member of the ringworm family is the demonstrable cause In the second class are placed a heterogeneous variety of dermatoses which include neurodermatitis and the huge class of trade eczemas The effects of scabies, pediculosis, hair-dyes, and other external irritants are also in this category The author, in common with most members of the modern school, is driven to the conviction that external irritation alone is not a sufficient cause for eczema, for otherwise all persons working in a noxious atmosphere would be equally liable Some idiosyncrasy, with the subsequent development of local sensitivity, has to be assumed for all the cases of eczema which arise after any kind of external irritant has been applied, or without such an obvious and immediate cause—i e , de novo Dr Coombes quotes an interesting experiment by H Jaeger 140 patients with normal skins, and 77 with eczematous lesions of various types, were all submitted to the same routine tests with external irritants Only 4 per cent of the normal persons showed any reaction, while 55 per cent of the eczematous developed new lesions on the irritated area indistinguishable from acute vesicular eczema Jaeger concluded that this susceptibility was due to a tissue idiosyncrasy and not to a humoral defect or internal dysfunction The attractive though rather fanciful theory of Ehrman, that eczema can be caused through the invasion of the circulation by way of the gastro-intestinal tract of relatively large protein molecules, which irritate the skin papillæ and cause exudation, has a certain number of supporters Such a mechanism is more likely in urticaria Hypoacidity (Uhrbach) of the gastric secretion may be a factor in some cases, but there are many with which hyperacidity is associated The correction of the gastric disorder only rarely results in a cure of the eczema That eczema is due to some disturbance of the metabolic ratio—i e , an excessive intake of carbohydrates, fats, or protein—is a theory which is at present popular, particularly as regards the eczema of infants Against this it is observed that while skin affections of more than one kind may occur in diabetics, there are many patients with a high blood-sugar who have no cutaneous lesions The same can be said of those with excessive uric acid content of the blood This is just as likely to be a result as a cause of eczema It is possible, however, that variations in the chemistry of the blood may have a sensitising effect on the skin and so favour the development of the disease

The theory of food allergy appears to attract Dr Coombes more than any other He instances egg protein as a cause in infants particularly Wheat can act in the same way, and there may be a combination of two or more proteins noxious to one individual In the majority of food-allergy eczemas, asthma is associated or may alternate with the eruption Cutaneous tests are not always successful in determining the actual protein and the manner in which they act is undetermined One theory is that the vagotonic nerves are irritated, " producing areas of capillary dilatation with pruritus," which react to scratching by the production of vesicles (eczema) But most of such protein cases are dry and papular, and do not vesiculate , many of them are classed as neurodermatitis, and therefore do not really fall into the same category The part played by food protein in the causation of eczema has naturally led to the assumption that bacterial proteins may act in the same way The author states that he has never seen a positive reaction to a bacterial protein which, given later as a vaccine, brought about a cure of the eczema The influence of the endocrine glands is considered in a short paragraph, and dismissed with the observation that they constitute only one factor in maintaining a balance of nerve control (equilibrium of the vagotonic and sympatheticotonic nervous systems), and can therefore be regarded only as a contributory cause of the disease

THE MODERN GERMAN VIEW OF BAYER "205"

Dr W Roehl, one of Ehrlich's early co-workers in chemotherapy, recently reported[1] to the German Tropical Medical Fellowship at its Hamburg Congress, on the action of Bayer " 205," now known in Germany as " germanin " Dr Roehl's work has been done in the chemotherapeutical laboratory of the Elberfeld Dye Factory Bayer " 205 " belongs, he says, to the large group of complicated urea-substitution products of the aromatic group, having in its molecule no metals or metalloids exerting chemotherapeutic action, no mercury, bismuth, arsenic, nor antimony Its molecular constitution was published [2] in 1919 How, asks Dr Roehl, does such a substance act on blood parasites ? It has none of Ehrlich's toxophore groups, nor such haptophores like OH or NH_2, and yet everyone is in agreement that it does not act primarily on the patient, encouraging antibody formation, but directly on the parasites, for very slight changes made in the molecule at once varied the effects on the different individual parasites. Dr Roehl answers his own question in the following costly physically defective schools will be very greatly reduced. Among the schemes which are described in this report that dealing with Bath, Wilts and Somerset is noteworthy. To serve as the central hospital for this an entirely new hospital was built near Bath, remarkable for its low cost considering the durable nature of its construction, which is due largely to the simplicity of its design and materials. Excellent work has been done here and at the clinics in all kinds of orthopædic cases and especially in the treatment and correction of faulty posture. In Birmingham an amalgamation of the Royal Orthopædic and Spinal Hospital and the Birmingham Cripples' Union has made an efficient organisation of the care of cripples possible. The area for which it will take responsibility is a very populous one including besides the city the huge industrial area known as the Black Country. In this report due credit is given to the Invalid Children's Aid Association, which has done and is doing so much good work on the care of cripples after their discharge from hospital and while they are attending as out-patients. Similar good work is done by the Central Council for Infant and Child Welfare at other places and the relations between these societies and the Central Committee for the Care of Cripples are close and cordial and likely to become even closer, thus ensuring coördination and avoiding overlapping of activities.

---

[1] Medical Journal and Record of New York, March 17th, 1926.

[1] Arch für Schiffs- u Tropen Hygiene, 1926, xxx , Beiheft 1, p 103

[2] See Annual Report of the Medical Research Council for 1921

VENTILATION IN FACTORIES

VENTILATION up to recent years has been a Shibboleth rather than a science, a term which conveyed more comfort than meaning to those that used it. It was bound up with the replacement of vitiated air by fresh air, though what constituted vitiated air was not specified with any precision. Little wonder that engineers striving to meet indefinite requirements only succeeded at times by happy chance, and more often lamentably failed. New conceptions have now been introduced which, while not disregarding the chemical aspect of the subject, take into account also the cooling power which is largely a function of movement. It is indeed now accepted that neither the chemical purity of the air nor the temperature (whether dry or wet bulb) is an accurate index of the physiological effect of the environment, but that in addition to both of these the rate of movement of the air must also be estimated. The matter has been extensively explored in this country for the Medical Research Council by Dr. Leonard Hill and his colleagues, and in America by C. K. Drinker, C. P. Yaglou and others. The knowledge already acquired has been applied by the Industrial Fatigue Research Board with considerable success to factory premises, particularly where some abnormal condition of heat or humidity prevailed, as in steel smelting or humid weaving. The most recent report[1] on fan ventilation in a humid weaving shed describes an experiment made for the Departmental Committee on Humidity in Cotton Weaving which was appointed in November, 1924, by the Home Secretary.

The effect of suitably arranged electric fans on atmospheric conditions in the shed, on warps and on output, and the effect of humidity and temperature on warp breakages and on output were studied, and special efforts were made to ascertain the opinions of the weavers on the innovation. The general conclusions reached were as follows: (1) The cooling power of the air and bodily comfort of the operatives were considerably increased by the particular arrangement of fans adopted. (2) Without fans, the cooling power of the air never reached the minimum standard considered necessary for workers engaged in sedentary occupations. (3) By running the fans at different speeds according to the atmospheric conditions in the shed it was possible to maintain a fairly uniform rate of cooling until a temperature approaching 85° F. was reached. Above this temperature more powerful fans would be necessary to preserve the same effect. (4) Equally satisfactory results were obtained by the use of other smaller fans which were effective over the area covered by four looms under the control of one weaver. (5) The increased air movement produced by the fans had no significant effect upon the number of warp breakages on the looms in their immediate vicinity. (6) There were indications that the output on the looms affected by the fans was somewhat higher on the days when the fans were running. (7) The number of warp breakages decreased as the relative humidity increased. (8) The number of warp breakages decreased as the temperature increased. (9) The highest output was obtained when the temperature was from 72.5° to 75° F. and the relative humidity 75 to 80 per cent. With higher temperatures and humidities the output decreased.

Investigations have also been extended to the more normal conditions of ventilation and heating, such as prevail in shoe or engineering factories, or in schools. The results obtained by Dr. H. M. Vernon and Mr. T. Bedford have been embodied in another report.[2] Generally speaking, the authors have not found that expensive artificial ventilating systems installed even in new factories, produce the desired results, which may be summarised as keeping the air in such motion as to give a sensation of freshness and keeping the feet warm and the head cool. On the whole, natural systems of ventilation are regarded as preferable, being more pleasant and more healthy. The report contains a number of tables and diagrams embodying the details of a large body of observations carefully made. Natural ventilation by windows, particularly in summer, is pronounced to be good. Exhaust ventilation may be of some advantage, especially in winter, but it should not be at the floor level. The plenum system was found to compare disadvantageously with other systems. Heating is best effected through surfaces warmed to a fairly low temperature, and placed either in the floor or as near as possible to the floor. An ideal method would be to place hot-water pipes or radiators under the floor so as to heat the whole of the floor material, as in the old Roman hypocaust. Thus we find the researches of modern science justifying the old-time usage—the open window and the heated floor—in contrast to the more expensive, complicated, but misdirected efforts of recent days. Evidence is quoted confirming the fact that even moderate differences in atmospheric conditions exerting a definite influence on well-being as measured by lost time. The more does ventilation diverge from the optimum standards, whether on the side of excess or of deficiency, the more does lost time for sickness increase.

POLONIUM AND THE TREATMENT OF SYPHILIS

QUITE early in her classical investigations into the radio-active substances present in pitchblende Madame Curie isolated a very active element which was named polonium in honour of her native country. This substance is now also known as Radium F and is one of the final disintegration products in the uranium-radium series, closely resembling bismuth. It is this close resemblance to bismuth which has led C. Levaditi and others to experiment with polonium in the treatment of syphilis. They have recently reported[3] the effects of intravenous injections of polonium in the case of rabbits with chancres produced by inoculation with the syphilitic virus. Since polonium is intensely radio-active its presence and its concentration in any organ of the body can be determined by radiological methods; as a further experiment spirochætes were taken from the chancres after the injection of polonium and examined for motility. A solution containing during the year. A medical officer is now stationed at Kasanga at the southern end of the lake and it will be possible in the future to make a more detailed examination of the inhabitants of the lake shore. While there seems little danger of a widespread epidemic of sleeping sickness occurring in the territory, there is no doubt that the large areas infested with *G. morsitans* are a constant menace. The problem is a large one, and sanction has been obtained to create a distinct branch of the medical department to deal exclusively with trypanosomiasis. This will be under the control of a medical officer with considerable experience of sleeping sickness and will be staffed by officers who show special aptitude for this work.

---

[1] Fan Ventilation in a Humid Weaving Shed. By S. Wyatt, M.Sc., assisted by J. A. Frazer, M.A. Edin., and F. G. L. Stock. Medical Research Council: Industrial Fatigue Research Board Report No. 37. H.M. Stationery Office. 1s. 9d.

[2] A Physiological Study of the Ventilation and Heating in Certain Factories. By H. M. Vernon and T. Bedford. Medical Research Council: Industrial Fatigue Research Board Report No. 35. H.M. Stationery Office. 1926. 3s.

[3] Compt. Rend. du Soc. de Biol., May 8th, 1926, p. 1179.

THE DIRECTOR-GENERAL, A.M.S.

Major-General Sir Matthew H. G. Fell, K.C.B., C.M.G., has been appointed Director-General, Army Medical Services, in succession to Sir William Leishman. Major-General Fell served in France and Mesopotamia during the war with great distinction and success, and was eight times mentioned in despatches. In 1918 he was lent to the Air Ministry and acted as Director, Medical Services, R.A.F., till 1921. Subsequently he became Inspector, Medical Services of the Army (1921–22), and Deputy Director, Medical Services (1922–26), serving in Turkey, in the Northern Command, and in Egypt. He returned from Egypt to take up the appointment of Deputy Director-General, Army Medical Services, on June 1st, the day before Sir William Leishman died. He enters on his responsible duties at the moment of great reforms.

SPIRITUALISM.[1]

A CONSECUTIVE history of modern spiritualism on general lines was required, and Sir Arthur Conan Doyle tells the story "with such obvious sincerity," investing it "with such vibrant interest, that its appeal is by no means confined to professing spiritualists." The quotation is from the publishers' statement on the cover, and we are happy to take it over. The work has grown from small disconnected chapters into a narrative, we learn, and it appears to deal in a way with the whole spiritualist movement, its serious approach being accentuated by a statement in the preface that this movement "is regarded by many as the most important in the history of the world since the Christ episode." In the first volume we have the story of, among others, Swedenborg, Edward Irving and the Shakers, Andrew Jackson Davis, Home, the Davenport and Eddy brothers, while there is the fullest account of the association with the phenomena of spiritualism entered upon by Sir William Crookes. The well-known story of mysterious rappings at Hydesville is also told, and their inexplicable nature is dwelt upon in an appendix as a communication from Horace Greeley, the great publicist, who founded the *New York Times*. In the second volume we have the story of Eusapia Palladino, an illiterate Neapolitan, whose manifestations were decided by the Society for Psychical Research to be fraudulent, and it is certainly a proof of the perfect honesty with which Sir Arthur Conan Doyle deals with the subject that he should have told the record of this lady in such detail, her adventures in spiritualism are usually quoted as an argument for the credulity of spiritualists. A chapter concerned with the activities of the Society for Psychical Research is interesting, for it is known that the outcome of the work of the Society is confusing. Sir Arthur Conan Doyle finds the record of the Society to be a strongly blended one of usefulness and obstruction, furnishing us with reasons for the belief that its investigations have been conducted without bias. In other sections of this volume we come across the well-known Mrs. Piper, the material manifestations of "ectoplasm," the results of "spirit photography," and the poignant association of spiritualism with the war. The volume closes with sections upon the religious aspect of spiritualism and the after-life as seen by spiritualists. These and many other aspects of spiritualism do not enter into the province of medicine, and we must here regard the work as one written by a medical man and sent for review to a medical journal. Inside this reference it is right to recommend our readers to ascertain for themselves from Sir Arthur Conan Doyle's pages what a devoted worker along spiritualistic lines who has the advantages given by a scientific training, can say for a movement which, while it has none of the awful significance alluded to in the preface, is stirring deeply the imaginations and possibly influencing the lives of a large section of the public. The volume is well illustrated, largely with portraits of prominent supporters of spiritualistic theories and work.

THE CARE OF CRIPPLES.

THE Central Committee for the Care of Cripples seeks to fulfil very similar functions to those which the Charity Organisation Society exercises in a more general sphere. The investigation of the causes of crippling and their elimination, and the coordination of all the agencies which seek to provide treatment and training are among the objects which it pursues. The second biennial report for the years 1924 and 1925 is able to record very great progress since the publication of the first. Comprehensive schemes, generally on a county basis, have been adopted in many parts of the country and the blanks on the orthopædic map of England seem in a fair way to be filled up, but a great deal of constructive work is still to be done. The foreword of the report concludes by pointing out that the test of a successful scheme will be when those who work it see that they can get help in their task from all sources. Besides the treatment of physical disability, the training and employment of the cured cripple offers a problem for solution. In London such education is more or less provided for, but elsewhere it is extremely difficult to find means of technical training for a cripple over school age. Even after the cripple has received his training he may be handicapped by some residual disability and be unable to compete on an equality with his normal work-mates. A scheme intended to deal with this problem was started in Oxfordshire, and as a result the Ministry of Labour has approved the establishment of a special committee in each area, on which juvenile employment exchanges, employers, and trade-unions should be represented, as well as members of the staffs of hospitals and clinics who know the capacity and limitations of the cripple. Such committees are already at work in the Oxfordshire area and in Hertfordshire. In the April number of the *Cripples' Journal* will be found the concluding portion of a brief autobiography of a cripple, a moving but true story which shows the terrible trials which some cripples have to undergo. The particular case was no doubt an exceptionally severe one and not typical of the great majority of cured cripples but it nevertheless brings home to the reader a sense of the difficulties inherent in the search for remunerative employment for cripples. This number of the journal contains much that is interesting concerning surgical tuberculosis, occupational therapy, and other subjects. It has for the last two years been published quarterly at Oswestry, but henceforth its office will be in London, and with the July number it becomes the property of the Central Committee for the Care of Cripples. We wish it success in its new circumstances. A systematic and widespread organisation for the care of cripples needs money, and this is a peculiarly bad time to get it from an impoverished country and an overburdened Treasury, but it has been shown that the crippled child, if properly treated and looked after, is in most cases fit to attend an ordinary school, and thus the expenditure upon the with half a grain of tartarated antimony, or 4 to 6 drachms of the vinum ipecacuanhæ may be given. In the persistent cases, also, a dose of chloral (15 to 20 gr) may give relief For the preventive treatment between the attacks, any exciting cause should be discovered and treated, particularly pharyngitis, chronic laryngitis. over-indulgence in tobacco or alcohol and indigestion · in some patients a spasm is readily induced by drinking cold fluids. which must then, of course, be forbidden. A general tonic and hygienic régime is indicated and a change of air and scene is often of value. Little can be expected from drugs but a course of a mixture containing sodium bromide gr x.. with tincture of nux vomica ♏vi , three times a day may be useful Hysterical cases usually show an obstinate tendency to recurrence; and in those due to aortic aneurysm or mediastinal tumours, the treatment is of course. purely symptomatic. The laryngeal crises of tabes are usually quickly relieved by inhalation of amyl nitrite

---

[1] The History of Spiritualism. By Arthur Conan Doyle, M.D., LL.D. In two volumes. London, Toronto, and New York: Cassell and Co. 1926. Vol. I., pp. 342; Vol. II., pp. 342. 42s.

Glottic Spasm in Children

Because of their high reflex excitability. children are much more liable than adults to spasm of the glottis as a result of local or reflex irritation and by reason of the relatively small size of the laryngeal lumen, a degree of narrowing which in the adult would cause little trouble produces in a child severe and urgent dyspnœa. Spasm plays an important part in most forms of laryngeal disease in children, and therefore their dyspnœa is characterised by exacerbations, which usually occur at night, and by intermissions. either complete or partial according as the spasm is the sole or the partial cause.

Laryngitis Stridula —In some children spasm readily occurs in the course of a catarrhal laryngitis and produces the condition called *laryngitis stridula* or "false croup." The child has a cold, with slight pyrexia and hoarseness. but during the evening or night respiration becomes embarrassed and inspiratory stridor ensues with recession of the ribs and epigastrium and. in some cases, an alarming degree of asphyxia. The symptoms tend to subside towards morning, but may be repeated during the next few nights though nearly always with diminishing severity. The child must be put to bed in a warm but well-ventilated room At the onset one or two grains of calomel should be given, and repeated in three hours until the bowels have acted freely. and the drug may usefully be continued in half-grain doses three times a day; one minim each of tincture of aconite and vinum antimoniale may be given every two or three hours If any dyspnœa appears, an emetic is the best means of allaying the spasm and of clearing the bronchial tubes of secretion; ipecacuanha is by far the best drug for this purpose and may be given to a child of 2 years of age in doses of 1 drachm of the wine, or 5 gr of the powdered root, every half hour until vomiting occurs Whitla recommends 10 minims each of vinum antimoniale, vinum ipecacuanhæ, and syrupus scillæ in a teaspoonful of water every 15 minutes until vomiting is produced When the child has recovered any predisposing source of irritation must be sought out and treated. In a large number of cases this is in the pharynx; in fact. children subject to laryngeal spasm nearly always have adenoids and enlarged tonsils, which must be removed; gastro-intestinal disturbances should receive treatment and cod-liver oil malt and preparations of iron are helpful during convalescence

Laryngismus Stridulus.—There is another form of "false croup" in which there is no inflammation or other disease of the larynx, this is called *laryngismus stridulus*, and occurs in feeble, unhealthy children, usually between the ages of 6 months and 2 years, often in association with rickets, and nearly always with adenoids or enlarged tonsils. The attack is shorter and sharper than that of laryngitis stridula and like it often occurs at night In a typical severe attack the child awakes suddenly struggling for breath with inspiratory stridor, retraction of the lower ribs, and cyanosis; at the height of the attack air may completely fail to enter, and there may be convulsions carpo-pedal contractions. and evacuation of urine: the end comes with a long crowing inspiration, and the child then generally goes to sleep. Death during an attack is very rare. but a feeble child may become worn out and die from pulmonary collapse. Shorter and milder forms are more common and are called by nurses "passion-fits" Laryngismus has usually been ascribed to spasm of the glottis but a simpler explanation may hold good for some cases. a child with nasal obstruction from adenoids becomes partially asphyxiated while asleep and. under the deep gasping inspiration which follows, the soft flaccid laryngeal walls are sucked in and close the lumen In the treatment of the attack it must be remembered that it lasts but a few minutes, and that there is only time for rapidly acting measures The quickest and most effective method is to pull the epiglottis forward with the forefinger passed to the base of the tongue. a manœuvre which can easily be taught to mother or nurse; other measures are to stimulate the conjunctiva by touching it with the finger. the lips by brisk rubbing with a towel. the face by cold sponging, or the nasal mucosa by tickling with a feather, or by smelling salts or inhalation of nitrite of amyl. There is no time for the hot bath sometimes recommended, nor for tracheotomy or intubation, which would in any case hardly ever be necessary. Of preventive treatment, the most important is the removal of adenoids and enlarged tonsils; overloading the stomach must be carefully avoided. and the bowels should be regulated. Most of these children being "delicate" are clothed too heavily and kept in overheated rooms As much time as possible should be spent in the open air, and a reasonable amount of exercise should be taken. A change of air, especially to a high, dry locality, is of value; Moritz Schmidt found benefit in moving a child to the top floor of the house. Of drugs cod-liver oil and iron tonics are the most helpful: sedatives such as bromides and chloral. are depressing and should be avoided; Eustace Smith recommended liquid extract of grindelia, which may be given in milk or sweetened water in doses of 10 to 30 minims four times a day. The affection. in short is most successfully treated if regarded as the result of debility rather than of excessive nervous excitability.

HAROLD BARWELL, M.B Lond.. F.R.C S. Eng ,
Surgeon for Diseases of the Throat and Ear,
St George's Hospital.

TUNBRIDGE WELLS GENERAL HOSPITAL.—In 1928 the hospital will celebrate its centenary, but it is unlikely that the existing building in Grosvenor-road will still be in use at that time. The building has outgrown its requirements and rather than face an expenditure of £30,000 on alterations the governors on June 21st unanimously decided to erect a new hospital on an eight-acre site at Great Culverden, Mount Ephraim. The total cost has been put at £80,000 but it is proposed to sell the freehold of the Grosvenor-road site, and certain other funds are available. Probably about £35,000 will have to be raised by public appeal. The new scheme includes provision for 150 beds a nurses' home, and an administrative block, and also for the carrying on in the same building the work of the Eye and Ear Hospital. It is likely to receive hearty support.

NEW TORBAY HOSPITAL.—A year ago Mrs Ella M. Rowcroft, of Pilmuir, Torquay. gave a sum of £100 000 to purchase a site for the new Torbay Hospital , this brought her gifts to the Torquay Hospital Committee to a total of £123 000 On June 26th in the presence of about 3000 people, Mrs Rowcroft laid the foundation-stone of the new building at Hengrave, Torquay. The site chosen is about a mile from the present hospital in rural surroundings and particular attention is to be paid to the provision of good accommodation for the medical and nursing staff The present hospital has long been entirely unsuitable, both from the point of view of the needs of Torquay and the comfort of the staff It is expected that the new hospital will be completed in about 18 months, and the committee in charge is now engaged in raising an endowment fund of £40,000

200 electrostatic units of polonium was injected intravenously into three rabbits, all with chancres on the scrotum, and they were killed on the third, fifth, and tenth days respectively after injection. The various organs of the body were then examined The shadows cast by each organ on photographic plates was noted as a sign of the amount of polonium it contained, histological investigations were also made. The results showed that polonium injected intravenously could be found in a relatively important proportion at the site of a primary syphilitic lesion By comparing the radiographic and histological findings it was ascertained that the necrosed central portion of the chancre contained no polonium, which accumulated particularly in the zone of reaction around the necrotic area In each case polonium was found in greater concentration in the principal organs of elimination, such as the kidneys, liver, and lungs On the other hand, the amount of polonium at the site of the chancre became progressively greater in the days following its injection while the amount in the liver and lungs rapidly diminished Despite this apparent concentration at the site of the primary syphilitic lesion, however, there appeared to be no appreciable action on the spirochætes removed for examination The dose of polonium employed was very small on account of its extreme "physical" toxicity, and despite the negative results obtained with regard to the destruction of spirochætes the experiments here described do appear to indicate that there is probably a definite concentration of heavy metals at the site of a syphilitic lesion Such an indication is important in view of the resemblance between polonium and bismuth, for bismuth has now become an important addition to the list of drugs used in the treatment of syphilis

BRITISH HOSPITALS ASSOCIATION

SEVERAL important subjects came up for discussion at the Sixteenth Annual Meeting and Conference of the British Hospitals Association held at Portsmouth on June 24th and 25th, under the presidency of Sir Harold Pink, chairman of council The proceedings opened with a paper by Mr Herbert L Eason (superintendent of Guy's Hospital, London) describing the movement to provide pensions for hospital servants and giving a critical summary of the scheme approved by the King Edward's Hospital Fund for London, which has now been laid before the hospitals by the Fund, and may well be adopted widely. Mr Eason's explanation of the scheme elicited warm approval Great interest was also felt in Sir John Paget's plea for an amendment of the law to allow hospitals to recover the costs of treating accident cases for which compensation is paid It is obvious that the present situation is anomalous If a person is injured owing to the negligence of a motor driver and is taken home to be treated, he can recover damages covering the expenses of private nursing and private medical attendance; but if he is admitted to a public hospital he cannot afterwards recover a penny to meet the cost of maintenance there, because the hospital is a charitable institution and could not sue him if he did not pay Sir John Paget considers it wrong that the hospitals, which cannot refuse to admit a serious accident case, should be expected to give prolonged treatment of this kind without having their expenses covered It may be argued, he said, that it is the business of a charitable institution to be charitable, and this he admits in so far as it applies to the actual victim of the accident. The present state of things, however, violates the old maxim of Roman law that he who gains the benefit should bear the burden; for it is the negligent motorist who gains by the efficiency of the hospital's service, because the compensation he will have to pay varies as the amount of permanent injury On the second day of the Conference Dr S C Dyke read an interesting paper on the Pathological Service of the General Hospital, in which he laid stress on the fact that "pathology is not ancillary to medicine, it *is* medicine, and a hospital without a pathological service is incapable of proper function" He discussed the place of the hospital laboratory in the scheme of panel practice and laid down some important principles of administration We hope to give the subject fuller consideration shortly

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CLXXIX —SPASM OF THE GLOTTIS IN ADULTS AND CHILDREN

THE effect of spasm of the laryngeal muscles is to produce closure of the glottis, for, though the abductor muscles probably participate in the contraction, they are overcome by the more powerful adductors In addition to the adduction of the vocal cords, there is closure of the ventricular bands and, in any strong spasm, contraction of the sphincter of the upper aperture of the larynx The spasm is most frequently the reflex result of irritation in or near the larynx It will, of course, occur in anyone who inhales a foreign body or an irritating vapour, but it also occurs occasionally with less powerful stimuli, as in a simple laryngitis or pharyngitis, and here we must invoke an excessive reflex excitability as a further ætiological factor Secondly, any lesion which causes irritation of the recurrent laryngeal nerve in the neck or in the mediastinum may produce spasm, among these are aneurysm, neoplasms, and diseased glands in the neck or thorax Thirdly, the cause may be a central nerve lesion, the laryngeal crises of tabes dorsalis, these resemble any other attack of laryngeal spasm, and may appear very early in the disease, before other symptoms have occurred to suggest the diagnosis Fourthly, spasm may be of purely functional or hysterical origin, and may or may not be associated with globus hystericus, anæsthesia of the fauces, or other paræsthesiæ

A typical attack of glottic spasm begins with a tickling sensation in the throat, followed by a fit of coughing, the glottis then closes, inspirations are taken with difficulty and accompanied by loud stridor, but expiration is unimpeded In the severest cases the glottis is completely closed at the height of the attack, the signs of asphyxia are present, and there may be, though this is rare, complete loss of consciousness The spasm in this severe form lasts but a few minutes, in many cases it is less complete, but persists for several hours

Though very alarming to the patient, glottic spasm is not dangerous, except when due to serious disease, such as locomotor ataxy or thoracic aneurysm, it is only in such cases that tracheotomy is ever required The attack is generally too short and sharp to leave much time for direct treatment The fears of the patient must be allayed as far as possible, and he should be told to try to take quiet, shallow respirations through the nose The inhalation of nitrite of amyl frequently gives relief, and the patient subject to these attacks should be advised to carry a 5-minim glass capsule of this drug for immediate use when required The spasm always disappears under chloroform, which may be administered, when time permits, by the medical attendant; it need not be given to the extent of inducing anæsthesia. StClair Thomson recommends, for inhalation, a breakable glass capsule containing chloroform ♏x, menthol gr ⅓, and ethyl iodide ♏v A hot sponge applied over the larynx is a useful minor measure In the more persistent form, especially if associated with laryngitis, an emetic dose of ipecacuanha is a most valuable method of allaying the spasm, 30 gr. of the powdered root, or 20 gr of the root combined permanent paralysis of two limbs by disease; £500 on loss of one limb and one eye following accident, £250 on loss of one limb or one eye by accident, £3 a week on temporary total disablement, and £1 a week on temporary partial disablement, caused by accident, in each case up to 52 weeks in respect of any one accident, £3 a week on temporary total disablement, caused by sickness, without confinement to house (up to four weeks), £3 a week on temporary total disablement caused by sickness with confinement to house (up to 26 weeks for any one sickness), £3 a week during convalescence from sickness (up to four weeks). For these benefits women in Class I (engaged in professional, educational, and clerical duties, and non-hazardous shop risks) pay an annual premium of £6 10s. Death, loss, or disablement through accident or sickness associated with or incidental to child-bearing is not covered. Policies are renewable from year to year by the joint consent of the policyholder and the company, but insurance ceases when the policyholder reaches 55. The age-limit for entrants is 20 to 45. The personal accident and sickness insurance offered to male proposers (Table 4 "Standard") differs so greatly in the details of benefits offered that it is not easily comparable.

Law Accident Insurance Society

This company offers to women, for selected lives only, policy W 3, covering accidents and all sickness. The benefits obtainable for women entering between the ages of 18 and 50, and ceasing when the assured reaches 60, are as follows. Death by accident, £500; loss of two limbs or two eyes, or one limb and one eye £500; loss of one limb or one eye, £250. Temporary total disablement by accident or sickness (*a*) involving confinement to house, weekly £2, (*b*) without confinement to house, weekly £1. Temporary partial disablement by accident, weekly 10s. The weekly compensation is payable up to 52 weeks for accidents and up to 13 weeks for sickness. For these benefits women engaged in non-hazardous business or professional duties pay a premium of £4 10s per annum, and women not engaged in any business or profession pay £6 per annum. Policies are annual contracts. Accidents or illnesses associated with or incidental to child-bearing are not covered.

Medical Sickness Annuity and Life Insurance

Permanent sickness and accident policies are issued to women medical and dental practitioners, subject to the following special conditions. (1) the age at entry must not exceed 35 next birthday; (2) those holding whole-time salaried appointments may only take policies under Table A3 (Women), excluding first three months illness or A3/6 (Women) excluding first six months illness. Under Table A (Women) a doctor or a dentist not excluded by this condition may, for example, insure £6 6s a week for the first 26 weeks of total incapacity and £3 3s a week thereafter up to the age of 65 for an annual premium of £15 8s if her age next birthday is 30. Sickness benefit is payable from the first day of incapacity. Confinement to bed, bedroom, or house is not exacted. The benefits granted include the risk of marriage, but exclude all sickness benefit from the time of pregnancy to three months after the termination of pregnancy and no premium is payable for such period of exclusion. In the event of the assured discontinuing practice for any reason other than incapacity all liability of the company under the policy ceases.

The sickness and accident benefit policy (Table A) offered to male doctors and dentists is comparable as regards benefits received. A man whose age is 30 next birthday would however obtain these benefits for an annual premium of £10 18s 6*d* and the holding of a full-time appointment does not disqualify him for this policy. Moreover the age of entry for male proposers may be as late as 55 next birthday and there is no clause providing for the cessation of liability under the policy if the proposer ceases practice for any reason. Male proposers may also insure under Table A2, receiving the same benefit as under Table A, with quinquennial rebate of 5 per cent of all premiums paid during such period if no claim has been made under the policy during the said quinquennium. This alternative is not offered to female proposers. The special feature of this society's all-sickness and accident contracts for both sexes is that once a policy has been granted it cannot be discontinued by the society except on account of fraud, non-payment of the premium, or permanent residence abroad.

Conclusion

It seems quite possible that the caution exercised by those companies who refuse to entertain proposals from women, even at high rates, is excessive. There can be but few figures available on which the sickness rate has been worked out, and it is probable that the actuarial calculation of the risk from published statistics is not based on figures which give a true picture of the health of the modern working woman. It should be easy to collect information as to the morbidity-rate in nurses at general hospitals. This is a most strenuous occupation, but we believe that sick leave is relatively rare not only during the four years' training, but also among staff nurses and sisters in the permanent service of the hospitals. It is even possible that were women encouraged to insure against sickness the morbidity-rate might improve, since the dread of falling ill is often at least a contributory cause of bad health. We have set out in some detail the facilities which are open to women in the hope that they may be useful to practitioners who wish to provide against this source of anxiety among their patients. It seems likely that if a large number of policies were taken out it might be found possible to drop the rates, for at the moment they must be largely speculative. Further investigations, similar to that carried out by Dr. Fairfield, may yield valuable results.

SOME RECENT STUDIES OF DYSENTERY.

Cultivation of the Amœba.

MANY problems, bacteriological, clinical, and therapeutical, still remain to be solved in dealing with the various forms of dysentery. Recent work, particularly on the bacteriological aspect of the problem, has brought to light some interesting facts. Drs. W. C. Boeck and J. Drbohlav[1] have described the cultivation of the *Entamœba histolytica*. The cultivation of this organism has only once before been carried out successfully by Culter in 1918, and his work has been severely criticised and not hitherto confirmed. The initial cultivation of the *E. histolytica* by Boeck and Drbohlav was achieved by accident. A small amount of fæces was inoculated into two tubes of Locke egg-serum medium as a routine procedure in a study of intestinal flagellates, and on examination of the cultures a few days later many amœbæ were found. These were identified as *E. histolytica* and further culture experiments showed that the best media for the purpose were Locke egg-serum and Locke egg-albumin. An initial alkaline reaction of pH 7·2 to 7·8 is necessary and the optimum temperature is 37° C. The fact that non-parasitic saprophytic amœbæ occasionally occurring in the fæces can readily be grown in artificial media made it very necessary to test the pathogenicity of the organisms cultivated by Boeck and Drbohlav, and these authors therefore carried out a series of animal inoculation experiments with kittens. Rectal inoculations of amœbæ direct from an infected patient and also from cultures produced typical dysentery, ulcerative colitis and hepatic abscess in these animals. The virulence of the organisms was not affected by prolonged cultivation.

---

[1] Amer. Jour. of Hyg., 1925, v., 371.

Special Articles.

ALL-SICKNESS INSURANCE RATES FOR WOMEN PROPOSERS.

THE excess of sickness among working women over corresponding groups of men in analogous occupations has long puzzled those who would fain believe that it is a myth invented by anti-feminists to keep women out of the labour market As far as the class of teachers goes, Dr Letitia Fairfield, in an address to the London Association of the Medical Women's Federation, which is published on p 5 of our present issue, confirms the fact that the morbidity-rate is much higher among women than among men teachers If confirmation were wanted of the circumstance it could be sought in the very limited facilities offered by insurance companies to women to take out sickness policies The following companies do not entertain proposals from women for policies which include the risk of all sickness Royal Insurance Company, Scottish Union and National Insurance Company, Yorkshire Insurance Company, Employers' Liability Assurance Corporation, Cornhill Insurance Company, Excess Insurance Company, London and Liverpool and Globe Insurance Company, Ltd Certain companies offer accident and sickness insurance to women, but only to those engaged in a profession or occupation Others limit policies still further, accepting only unmarried professional women An analysis of some of the policies open to women, which does not pretend to be either exhaustive or complete, is set out below Only policies which include all sickness are dealt with and only the more important details are included

Eagle, Star, and British Dominions Insurance Co

Since 1919 policies have been issued to women Women between 16 and 60 actively engaged in a business or profession can insure against all accidents and all illnesses under Table 3 at an annual premium of £2, £4, or £8 For the last-named sum the following benefits may be obtained In the event of accident causing (*a*) death, £500, (*b*) loss of one hand, foot, or eye, £250; (*c*) permanent total disablement (other than loss of limb or limbs), £3 a week for 52 weeks, afterwards £50 a year, (*d*) loss of both hands, feet, or eyes, or one hand and one foot, or one hand or one foot or one eye, an annuity for life of £50, (*e*) temporary total disablement, per week up to 52 weeks, £3, (*f*) in the event of illness or disease causing total and irremediable blindness, or permanent general paralysis, £3 a week for the first 26 weeks of disablement, followed by an annuity of £50, (*g*) in the event of illness or disease causing temporary total disablement (with or without confinement to the house), £3 a week, payable for 26 weeks To obtain the same benefits and certain additional ones, of which perhaps the most appreciated must be the benefit named under (*g*) for 52 weeks as against 26, a male proposer in Class I would pay an annual premium of only £6—that is, three-quarters of that paid by a woman engaged in clerical, educational, domestic, and superintending duties, or by shop assistants not using machinery Dancing mistresses, dressmakers (working), gardeners, health visitors, and shop assistants using hand machinery pay 10 per cent extra for this policy, and car-drivers, farm hands, masseuses, nurses, and policewomen 20 per cent extra Marriage on the part of a working woman does not affect her policy, but death, loss, or disablement resulting from child-bearing or from venereal disease are excluded Women not actively engaged in a business or profession can be insured under Table 3A, paying the same annual premium, £8 The risks of accident are evidently considered less great, for example, the death benefit is £600 instead of £500, and for temporary total disablement following accident £4 instead of £3 is payable for 52 weeks Under Table 3A for temporary total disablement due to disease, with confinement to the house, £4 a week is paid up to 26 weeks, without confinement to house, £2 a week up to four weeks

Friends' Provident and Century Life Office

Insurance under Table 2 is offered against accidents and all illnesses to women engaged in a business or profession Policies are issued only to single women and cease upon the marriage of the insured. The benefits obtainable for an annual premium of £6 are (*a*) death by accident, £500, (*b*) loss of two limbs, or of both eyes, or of one limb and one eye, by accident, £500, (*c*) loss of one limb or one eye by accident, £250, (*d*) temporary total disablement by accident, £3 a week for 52 weeks, (*e*) temporary partial disablement by accident, up to 52 weeks, £1 a week, (*f*) temporary total disablement by illness of any kind involving at least one week's disablement, £3 a week up to 26 weeks (*g*) convalescence, £1 10*s* a week up to four weeks The premiums quoted apply to proposers between the ages of 18 and 40 engaged in clerical, educational, commercial, and the like occupations The company issue a "minimum cost" policy to male proposers for an annual premium of £4 10*s* a year—again three-quarters of the premium payable by women For this (*a*) the sum to be received in the event of death resulting from an accident is £500 (*b*) for total disablement due to accident or sickness of any kind a sum of £4 a week is paid, up to a cumulative period of 26 weeks in respect of each accident, or in case of sickness to a cumulative period of 26 weeks in respect of all illness occurring in any one year of insurance: (*c*) medical and surgical fees are paid up to a sum equivalent to one-sixth of the benefit payable in respect of temporary total disablement

Ocean Accident and Guarantee Corporation

Women between 18 and 50, married or unmarried, who are engaged in a profession or business and incurring average risk can for a premium of £9 9*s* a year obtain the following benefits In case of accident causing death, or loss of hands or feet or eyes, or of one hand or foot and one eye, or of one hand and one foot, £600. loss of one hand or foot or eye, £300, total disablement per week, £3, partial disablement, per week, 15*s* Permanent total disablement not otherwise compensated For the first 52 weeks of disablement, per week, £3, for the following ten years an annuity of £50, which annuity is also payable in the case of total and irremediable blindness, or permanent paralysis of two limbs, not caused by accident Total disablement caused by certain specified illnesses, per week, £3, total disablement for not less than seven days caused by any other sickness, per week, £3 Death or disablement consequent upon pregnancy and childbirth is excluded The weekly compensations are payable up to 52 weeks and confinement to the house is not exacted

The all-sickness and accident policy offered to male proposers by this company gives exactly parallel benefits for an annual premium of £6 6*s* to those in Class I occupations (including medical practitioners) The sole difference in the prospectus appears to be that the limit of age for male entrants is 55 (against 50) The difference of premium is as two to three between males and females in this company —that is slightly less favourable to the females than in some of the others, but, on the other hand, no extra benefits are offered to the males

London Guarantee and Accident Company

This company offers all-sickness and accident insurance to women engaged in professional, commercial, and industrial life The benefits include the following £25 on death from accident or sickness; an annuity of £50 on permanent disablement through loss of two limbs or two eyes, or on permanent loss of sight of two eyes by disease, or on finger-prints coincided in 32 ridges with prints found on a broken window-pane at the theatre The accused man's finger-prints were taken (with his consent) in court, and, though he denied his guilt, the jury found the evidence of identification adequate and convicted him Possibly more use of the system would be made in criminal trials if it were not regarded as unfair to ask the accused to allow his finger-prints to be taken It is, of course, objectionable to prove a man's finger-prints from records in the possession of Scotland Yard while his innocence or guilt is being determined, because such an action gives the jury a hint that he is a man of bad character who has already been convicted before The law does not allow such hints to be given Not many months ago goods were stolen from a warehouse, a woman standing opposite the premises had noticed a man with a hand-cart whom the police supposed to have been the culprit She was shown by a detective several photographs of convicted thieves and she picked out one of the portraits as that of the man she had seen At the trial, during her examination-in-chief, the prosecution most improperly asked questions which elicited the fact of her having identified the accused man from police photographs The man was convicted, but the Court of Criminal Appeal quashed the conviction, the Lord Chief Justice severely criticising the irregularity which had prevented the accused from having a fair trial Similarly, no doubt, evidence identifying a man by finger-prints purporting to come from the archives of Scotland Yard (and therefore indirectly establishing the fact that he was a man of bad character) would prima facie be inadmissible

The main value of the finger-print system in criminal cases lies in the preliminary stages of investigation, or in proving the career of a prisoner after he has been convicted and before he is sentenced Another use of the system was disclosed lately at an inquest in Poplar A woman's body was taken from the Thames on June 7th She was unidentified until the police took her finger-prints post mortem and thereby traced her, her previous career having been known to Scotland Yard The coroner, Dr R L Guthrie, asked if the taking of finger-prints in the case of unknown persons was not a new practice The detective-inspector replied that it had been done for five or six years, but that this was the first case recorded in which a person had thus been identified after death A few days later Dr Harvey Littlejohn, professor of forensic medicine in Edinburgh, corrected the statement In April, 1913, it appears, a man was found dead in a quarry near Edinburgh The body being unidentified, the professor suggested the taking of finger-prints on the chance of the deceased having been known to the police Scotland Yard was consulted, and by return of post replied giving the man's name, alias place of birth, age, height and complexion and the colour of his hair and eyes The reply was accompanied by a photograph which left no doubt of the identity of the deceased As Prof Littlejohn observes, the incident was a tribute alike to the efficiency of the finger-print department of Scotland Yard and to the value of the method in the identification of the dead A later letter to the *Times* from the Chief Constable of Oxford mentions a case where a man apparently concerned in certain frauds in that city died suddenly and was identified with the aid of the finger-print records of Scotland Yard The practice of taking the finger prints of unidentified bodies is stated to be common in India

Charge under the Venereal Disease Act

The Venereal Disease Act forbids, as is well known, the advertisement of remedies and the offer of treatment by persons who are not qualified medical practitioners Prosecutions under the Act have been remarkably rare Mr H G Muskett appearing for the police in a recent case in the Clerkenwell police-court, stated that it was the first of such prosecutions which he had had to undertake since the Act began to operate in May, 1917. The summons was against Percy John Murrell, trading as the Orion Chemical Manufacturing Company Mr. R E Dummett, the stipendiary magistrate, imposed a fine of £20 and ordered the payment of £5 5*s* costs, with the alternative of two months' imprisonment It will be recalled that Lord Trevethin's Committee in 1923 recommended that the law be altered to allow properly qualified chemists to sell approved disinfectants as a protection against venereal disease, the sale being accompanied by approved instructions A Bill to effect this amendment of the 1917 Act is now before Parliament

Partnership Disputes

During a recent partnership dispute between doctors Mr Justice Horridge, trying the case with a special jury, asked if some arrangement could not be reached before the case proceeded further, as both parties were on the high road to ruining themselves They might be rich men, but he should have thought it was ruin for two doctors to go on fighting a case and be away from their patients for days Whatever the result might be, it must be bad for their practice In deference to the judge s suggestion counsel conferred, but the case proceeded Next morning, however, a settlement was announced As both plaintiff and defendant withdrew the charges which they had placed upon the pleadings, there is no occasion to deal with the evidence It is sufficient to explain that the pleadings indicated that two medical men had entered into partnership in London, one having agreed to pay £2500 for a half share in the practice of the other The purchase price was duly paid, except for the final £500, for which sum judgment had been signed The purchaser counter-claimed for damages on the ground of fraud and misrepresentation (mainly as to the value of the practice), he also claimed the return of his £2000 and the rescission of the partnership agreement Thereupon the other party pleaded that the purchaser suffered from chronic recurrent alcoholism, and was on that account incapable of constantly and regularly performing his part of the partnership agreement, and that, therefore, the court should dissolve the partnership When the case was settled, each side withdrew its charges and stated handsomely enough that it was satisfied that they were without foundation. There is, therefore, no more to be said than the somewhat platitudinous reflection that it is a pity that such charges should be solemnly made before judge and jury if they can be whole-heartedly withdrawn within 24 hours, and that the publication of disputes of this kind does good neither to the practitioner nor to the profession.

How are incidents of this kind to be avoided? If the court is likely to intervene to press a settlement upon the parties—a contingency by no means unlikely in cases of this nature—what is the good of running up lawyers' bills? Here were two partners each asking for dissolution of a partnership relation which at the moment was evidently intolerable to both Why could they not save themselves friction, costs, and publicity by a simple mutual agreement to dissolve? The purchase money was, no doubt, a stumbling-block · but, if the parties could have referred this point to some umpire in whom both had confidence, a reasonable award by him as to the proportion of the purchase money to be retained or returned would have settled the dispute and left the parties vastly better off than after the briefing of fashionable counsel Once personal charges of fraud or drunkenness are launched, a professional man must fight them with his last penny But cannot disputes of this kind be submitted to some professional tribunal? Is there no means by which doctors entering into partnership can bind themselves to accept such arbitration? The presidents of the professional bodies of engineers and of architects are frequently called upon to appoint arbitrators (though not perhaps particularly in relation to

Immunisation against Bacillary Dysentery.

The production of immunity against dysentery, upon lines which proved so successful in the case of typhoid in the late war, has long engaged the attention of bacteriologists. It is, perhaps, not a clamant necessity in ordinary conditions of life, but becomes one the moment any great upheaval, such as wars, famines, and earthquakes, causes a violent disorganisation of normal social conditions. A successful method of bringing about active immunity to this disease would be one to be held in reserve against emergency, or only applied under present conditions in this country in asylums or institutions in which epidemics of bacillary dysentery might occur. None the less, the problem is an important one, and in countries less happily situated hygienically a pressing one. The difficulty in the way of applying the method used for typhoid, without modification, is the extreme severity of the reactions set up by the injected organisms; these are exceedingly unpleasant and unlikely to be tolerated by the average population. From time to time various attempts have been made to modify the toxic properties of the organisms without interfering with their antigenic value, but none of these has as yet gained general recognition. In the current number of the annals of the Pasteur Institute[2] J. Dumas, Ramon, and S. Bilal put forward a further method, which has been suggested by studies upon diphtheria anatoxin. It has been found by Ramon that diphtheria toxin treated with formol becomes modified, so that its toxic properties are destroyed, but its capacity to provoke antitoxin production when injected into the animal body, and to combine with antitoxin is retained. In working with dysentery the anatoxin is prepared by treating a toxic filtrate of a 15 days old broth culture of *B. dysenteriæ* Shiga with formalin at incubator temperature, under which circumstances the toxin is found to become less potent and finally, at the end of about one month, to be practically non-toxic. With regard to the antigenic properties of this substance its injection into animals appears to result in both an antitoxic and antibacterial immunity, whilst in its use in immunising horses, for the production of antidysenteric serum, it has not been found to produce the severe reaction occasioned by the unaltered toxin although giving rise to an efficient therapeutic serum. In the human subject the method has only been tried on a small scale, and whilst it is certain that some reaction results from its use, this is stated to be less than that observed after antityphoid inoculation. The authors show praiseworthy caution in stating that the success of their procedure cannot be assumed until it has been extensively put into practice under epidemic conditions.

Castor Oil versus Saline Aperient.

Dr. A. J. Boase[3] has described the use of castor oil as opposed to saline aperients in the treatment of bacillary dysentery in Kenya. This treatment was introduced in that country in 1924, and Boase has investigated 117 consecutive cases of bacillary dysentery occurring among convicts with regard to these two main methods of treatment. Of these 45 were treated with saline aperients in the routine fashion with a death-rate of 8.8 per cent. and a relapse-rate of 29 per cent. The remaining 72 cases received two ounces of castor oil on admission and on subsequent days 1 drachm hourly for eight doses until the day when the stools ceased to show blood and mucus. This usually occurred about the third day and a saline purge was then given to relieve any constipating effect of the castor oil. Among these cases the death-rate was 2.8 per cent. and the relapse-rate 11 per cent. These figures certainly seem to indicate the value of castor oil at any rate in this particular epidemic. There appears to be some scientific basis for this form of treatment, since absorption of toxins from the small intestine is undoubtedly an important factor in the intoxication produced in dysentery, and a drug which will hurry on the intestinal contents rather than lead to even the slightest delay is bound to be beneficial. An important point with regard to the castor oil treatment lies in the diet which is not restricted, as occurs when the saline aperients are used, but allowed to be almost full. The number of patients treated is certainly small, but the results point to an important innovation in the treatment of bacillary dysentery.

Serum Treatment of Bacillary Dysentery in Children.

In Australia Dr. R. Webster and F. E. Williams have been examining the dysentery bacillus in its relation to the so-called "summer diarrhœa" of infants and young children.[4] Although the dysentery bacillus as a cause of infantile diarrhœa does not appear to be nearly as common in the Commonwealth as, for example, in America, yet Australian work indicates that other parts of the world beside America find this type of the disease of some importance. The dysentery bacilli isolated from the stools of infants and young children over a period of nearly three years were mostly mannite fermenters, the Shiga group being a negligible factor. Of the Flexner group the "W" strain appeared most commonly, while the Sonne bacillus also assumed importance, especially at certain portions of the period under review. The mortality-rate for the various members of the Flexner group did not appear to vary with the strain, being in the neighbourhood of 50 per cent., for example, in the season 1923–24. Such a high mortality-rate makes the question of specific serum treatment of great importance, and Dr. Webster deals with this in the second part of his paper. Serum injected after a lapse of four to five days of illness appeared to be quite ineffective in reducing the mortality or modifying the course of the disease, while in six cases in which serum therapy was instituted within 48 hours of the onset of the disease recovery took place in five cases. Such results illustrate the need for early diagnosis, and Dr. Webster emphasises the appearance of blood and mucus in the stools of such cases as being strong presumptive evidence that the dysentery bacillus is the cause. A prompt bacteriological report is also necessary, and Dr. Webster has elaborated a technique which enables him to identify the dysentery bacillus in the same time as a throat swab can be reported on for the diphtheria bacillus. Polyvalent serum has been used up to the present, but the suggestion is put forward that monovalent serum for the "W" and "V" strains of the Flexner group should be prepared and used since these appear to predominate, and a method for the rapid identification of the serological race of an organism is now under consideration.

MEDICINE AND THE LAW.

Identification by Finger-prints.

THE law courts, at any rate for the purposes of criminal trials, often show a reluctance to accept results which science has established. The system of identification by finger-prints has provided an example of this hesitation. In Rex *v.* Chadwick, a case tried at Birmingham in 1908, the accused was charged with burglary. The burglar had left finger-prints upon a champagne bottle and it was proved in evidence that they coincided in no less than 12 of the ridges with the finger-prints of the accused. The judge advised the jury not to accept this evidence; the jury, however, found the accused man guilty nevertheless. A clearer example of the value of the system occurred in 1916 at the Old Bailey when a man was charged with breaking into Sadler's Wells Theatre and stealing Treasury notes. It was proved that his

---

[2] Anatoxine dysenterique. Annales de l'Institut Pasteur, 1926, xl, No. 2.

[3] Kenya Med. Jour., December, 1925, ii, No. 9, 245.

[4] Med. Jour. of Australia, Dec. 5th, 1925, p. 648.

UNITED STATES OF AMERICA.

(FROM AN OCCASIONAL CORRESPONDENT.)

Pan-American Red Cross Conference

THE second pan-American conference of the Red Cross opened at Washington in the last week of May. Organised by the League of Red Cross Societies: it was attended not only by representatives of the Red Cross Societies of North and South America but also by many allied organisations on these continents and by sister organisations from across the seas. It was pleasing, for instance to hear a report from Mr Hirosi Saito, a delegate of the two and a half million members of the Red Cross Society of Japan. The League of Red Cross Societies has been skilful in building an efficient organisation with a minimum of rigid regulation and red tape. As a result the representatives at the conference demonstrated a variety of interests as well as of nationality. At the same time the discussions all centred upon some phase of the established peace time programme of the Red Cross: struggle against disease rescue in disaster. or education for health and goodwill

The Department of Hygiene in the Republic of Paraguay has lately concentrated its efforts on the problem of leishmaniasis americana a disease which ranks in importance there with tuberculosis malaria, and syphilis While appealing to research workers to help them solve the problems of its ætiology they have not awaited a response before establishing preventive and curative stations The Paraguayans are at present advised to bathe the body at the end of each day's work to treat all bites of insects with antiseptics and to take early medical advice on pustules which may be leishmaniasis in an early stage The present treatment consists in cauterisation with silver nitrate followed by injections of tartar emetic.

Under the ægis of a national nursing association special tuberculosis nurses have been trained in Cuba. and are doing efficient work in the hospital the dispensary and the home As a result of their educational campaign there has been a marked improvement in the standards of hygiene throughout the country. The Red Cross Society of Colombia has established among other things, a health centre where maternity care is successfully given The great event at this centre takes place on Tuesdays and Fridays of each week when 'a select group of ladies . and some others who come with less regularity receive the dirty and malodorous children which the mothers bring there for that purpose, bathe them rinse them. dress them with new clothing and give them to their mothers completely transformed'

The Mexican Blue Cross

An unusually interesting institution is the Mexican Blue Cross founded in San Antonio Texas U.S.A. on Oct 12th, 1919 Its object is to bring succour to the Mexicans—over a million of them—who live in the southern parts of the United States, and it has at the present time 269 outposts established in six southern and western States Its work, as picturesquely described by its secretary and founder, Senor Jesus Franco includes —

'Distribution of food and clothes: providing doctors and medicines to the sick: visits paid to the hospitals and jails in which compatriots or persons of Spanish speech, are recluded providing them with comforts and sending them fruits, candies &c. Those who die without the attention of their relatives, leaving no resources are piously buried by Sisters of the Mexican Blue Cross the expenses being covered by the institution. Those that on account of sickness or disgrace are unable to work, and for their lack of means are obliged to go back to their families in Mexico are sent by the Mexican Blue Cross. . . The Mexican Blue Cross also labors in a moral way, inculcating a high spirit of sentiment of fraternity and of love toward men without any di while at the same time we commend to our men a high and eternal gratitude toward th pitable country (the United States). and the obse of a blameless behavior. based in the respect o law and righteousness"

The work of such an organisation must sur promote understanding and cement friendship betwe Mexico and the United States

---

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

Paying Wards in Hospitals.

THE question of community hospitals or in plainer English the establishment of paying wards in public hospitals, is much under discussion, and here as elsewhere it presents great practical difficulties. These are partly due to the methods of hospital administration in vogue, which differ materially from those in England From 1853 to 1876 when the country was divided into provinces, hospitals were administered locally. From 1876 to 1886, after the abolition of provinces. there was great lack of uniformity in the hospital management. the amount of voluntary contribution varying in different districts: in some it was quite considerable In 1885 and subsequently Acts were passed establishing the present system which is briefly as follows: The country is divided into some 40 districts, each under its own hospital board popularly elected. Each board imposes a rate according to the estimated cost for the year, on which it receives a pound-for-pound subsidy from the Government This method may have equitably distributed the cost of hospitals over the community, but it has had the effect of abolishing voluntary subscriptions. though handsome donations have been made for specific purposes The hospitals were originally established for the indigent (of whom there are now very few) and for those who can pay a maintenance fee of 9*s* a day In most of them the medical staff is honorary, although in some districts small stipends are offered.

This restriction of the hospitals to the poorer section of the public is not likely to remain for in 1924 the Government, following the decision of a Hospital Commission definitely declared that the public wards of the hospitals were available for rich and poor alike which has raised a very live issue for their honorary staffs Abuse of hospitals is not unknown here, and in view of the growing need for hospital accessories—such as X rays and bacteriological investigation—in private practice. and the great convenience of public hospitals as affording them, a movement is on foot to establish paying wards This movement started long ago but has been considerably stimulated by the Government pronouncement In 1920, at the first congress after the war, the New Zealand branch of the British Medical Association passed a resolution in favour of paying wards, and in spite of some notable dissentient divisions it has held to this policy. Since the visit of Dr William Mayo and other distinguished Americans to New Zealand and the visit of New Zealand doctors to the American College of Surgeons in 1924. the American conception of the community hospital has been extensively advocated and Dr McEachern of the American College has toured the Dominion on behalf of the scheme as applicable to this country. He finally addressed a joint meeting of members of the Government Health Department the hospital boards and the B.M.A. and advised a reduction in the number of the hospital boards the establishment of a non-political Board of Control of hospitals the encouragement of voluntary subscribers with representation on the management and the construction of hospital accommodation for all classes of patients, according to their ability to pay.

professional partnerships), the legal profession has machinery by which disputes between the two branches can be referred to the Bar Council for final decision Has the medical profession sufficiently considered the provision of like facilities? It is lamentable enough when in the divorce court husband and wife launch charges in the endeavour (often frustrated) to dissolve a union which is irksome to both It is ludicrous that the parties to a medical partnership, a form of union neither so personal nor so permanent, should follow suit

Many partnership disputes could be avoided at the outset If books are properly kept, and if intelligent inspection of them is obtained, it should rarely be possible in an honourable profession to plead fraud or misrepresentation as to the value of a practice Lawyers and accountants can be of use here in advising upon figures or the absence of figures But they can give no advice upon incompatibility of temperament, nor does the law provide any elastic method of dissolving partnerships which fail for purely personal reasons The Partnership Act terminates partnerships automatically in certain cases —death, bankruptcy, illegality, expiration of agreed term, &c —and allows the court a discretion to dissolve partnerships in certain other cases The court may decree a dissolution if a partner—

(*a*) is a lunatic, or

(*b*) becomes in any other way permanently incapable of performing his part, or

(*c*) has been guilty of such conduct as in the opinion of the court (regard being had to the nature of the business) is calculated to affect prejudicially the carrying on of the business, or

(*d*) wilfully and persistently commits a breach of the partnership agreement or otherwise so conducts himself in matters relating to the partnership business that it is not reasonable for the other partner or partners to carry on the business in partnership with him, or again

(*e*) when the business can only be carried on at a loss, or

(*f*) whenever circumstances have arisen which, in the opinion of the court, render it just and equitable that the partnership be dissolved

In cases (*b*), (*c*) or (*d*) the court will not act at the instance of the partner who is to blame There has not been much decision as to the circumstances which would make dissolution "just and equitable" under (*f*) Prejudicial conduct under (*c*) depends upon the nature of the business, adultery by a partner would not justify the dissolution of a partnership of merchants, but immorality by a member of a medical partnership has been held to suffice Wilful persistent breach of contract under (*d*) has been explained to mean "studied, prolonged, and continued inattention to the application of one party calling upon the other to observe the contract" Unreasonable conduct does not mean mere squabbling and ill-temper, but a state of complete and permanent animosity making an impassable breach between the parties and destroying mutual confidence

Thus Parliament and the judges have laid down the lines along which partnership disputes will be decided in actions at law Is the procedure elastic enough? If not, what better machinery can be devised within the profession? Arbitration, as contrasted with legal proceedings in the law courts, has two drawbacks First, it tends to be unexpectedly expensive, especially when it involves audience by legal representatives, secondly, the law courts are jealously inclined to seek occasions to intervene unless the parties can eliminate this intervention by some specially wide and binding undertaking to accept the arbitrator's award on all points as final But arbitration possesses the great merits in matters like medical partnership disputes that it avoids the washing of dirty linen in public

EPSOM COLLEGE THE ANNUAL MEETING

THE annual general meeting of subscribers to the Foundation was held at the London Offices, 49, Bedford-square, W C, on June 25th, Dr Raymond Crawfurd presiding The principal business before the meeting was the announcement of the result of the elections to the pensionerships, annuitants, and foundation scholarships Dr Crawfurd said that the number of votes gained by certain of the successful candidates implied the accession of new subscribers to the Foundation In congratulating those who had been successful he asked the meeting to sympathise with those who had not and pointed out that the ideal before the Foundation was to provide these benefits for all who stood in need of them The secretary read the names of the successful candidates as follows —

"Highett" "Pugh" and Ordinary Pensionerships

	Votes		Votes
*Thomson Malcolm E	6636	‡Maitland, Clara B	2176
*Staniforth, John W	2365	†Alexander, John	154

* Ordinary Pensioners ‡ "Pugh" Pensioner
† "Highett" Pensioner

The "R R Cheyne" Annuity

	Votes
Hope, Miss Frances S J	1931

Foundation Scholarships

	Votes		Votes
Johnson Everard S R	12 490	Matthews, Guy A	6562
McDonald Charles F	12 083	Adams, John E	6072
Galpin Richard J L	11 066	Hudson, Eric J	5159
Blakeway Michael G	8692	Cook, Robert S	4315
Williams, Paul G	6671	Rew, Kenneth G R	3800

A meeting of the Council followed upon the annual general meeting, when Dr Crawfurd resumed briefly the activities of the past year The school, he said, had now 345 boys, and the raising of the salaries of the teaching staff was reflected in the scholarship successes. He was glad to say that in the near future the British Medical Association and the Medical Insurance Agency would be represented on the Council He alluded to notable acts of benevolence by which they had benefited mentioning the gift of £1000 from Mr William Tinker and the institution of a new exhibition arising out of a gift from Dr H R Mosse The Council, he said, had spent largely during the year but had not been forced into debt by doing so A chemical block had been erected which would be opened by Lord Grey on next Founder's Day, July 24th, the library had been completely transformed to serve also the purpose of a reading room, and large and necessary structural changes had been made in the lower school buildings The Works Committee had undertaken the centralisation of the heating of the building, and there had been a complete conversion of the lighting scheme which now depended upon electricity alone These things in the main accounted for recent expenditure, and he went on to outline as the structural scheme of the future the building of a new infirmary, pointing out that the existing building, though unfitted for a modern infirmary, could be transformed into a boarding-house offering accommodation for some 40 more pupils He mentioned that among the boys themselves there had arisen a movement for the erection of a new games' pavilion, and large as the sum required was he had reasonable hope that it would be forthcoming

A vote of condolence was passed with the relatives of Sir Henry Morris, for many years the zealous treasurer of the College

There followed the re-election of certain members of the Council retiring under time-limit and of the auditors, the election of Mrs H G Tetley and Dr E Climson Greenwood as vice-presidents, and the election of Sir William Hale-White as treasurer of the College in succession to Mr H S Pendlebury, for whose services a hearty vote of thanks was recorded

Given the money, a voluntary hospital could establish such a scheme to-morrow, if it chose; but the difficulties in adopting the policy in municipal hospitals are evident when details are discussed The ratepayers, not the doctors, contend that any ratepayer has a right to enter his own hospital, and that all must enter on equal terms, the hospital boards decline to incur expense in building wards for the convenience of doctors in their private practice, and the cry is raised of " class distinction " (which applies equally to the provision of first- and second-class carriages on the Government railways) The Minister of Health has spoken unfavourably of the scheme on at least two public occasions, on the ground that it would lead to undue control of the hospitals by the medical profession, and perhaps he voices the public opinion The doctor, on the other hand, appears to have determined that he will not act for the existing hospital patients except in an honorary capacity—that is, he will not become a paid servant of a hospital board He declines to treat persons in an honorary capacity who can pay his fees, and he finds and fears an increasing tendency for such persons to enter public hospitals on account of their accessory advantages He sees a solution for all these difficulties in wards for paying patients, but he is not at present very clear as to how they are to be provided

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH

The following table gives some of the health statistics for 1925 of a group of districts We comment below on the reports recently issued from the medical officers of health

Name of district	Estimated mid year population (R G)	Birth rate	Death rates per 1000 of the population					Death rates per 1000 births	
			All causes	Tuberculosis	Cancer	Resp diseases with influenza	Heart disease	Infant mortality	Maternal mort from childbirth
Southport C B	74,260	13 1	12 6	0 73	1 46	2 3	1 5	61	2 0
Watford B	48,990	17 2	9 8	1 10	1 42	1 7	1 1	47	3 5
Woking U D	26,410	15 5	8 8	0 98	1 55	0 9	1 7	21	2 4
Guildford B	26,070	17 4	11 0	0 69	1 46	1 8	1 7	45	9 0
Guildford R D	20,330	11 0	9 3	0 54	1 58	1 4	1 2	61	0 0
Thrapston R D	11,336	16 9	13 4	0 88	1 84	2 4	1 3	57	5 2

C B. = County borough B = Borough U D = Urban district R D = Rural district

Southport

Dr G C Barnes describes his area as a bed of blown sand resting on peat, which, in its turn, rests on laminated blue clay Although the lower strata are subsiding, the loss is more than made good by the sand derived from the Mersey, and land is rapidly being reclaimed on the foreshore Thus, since 1921, 30 acres have been reclaimed and form an extension to the municipal golf links High banks of house refuse are constructed to exclude the sea and are covered with soil and sown with grass seeds When the banks have been formed, the area reclaimed is filled in with refuse covered with sand and sown During 1925 630 new houses were erected Generally speaking, the housing conditions are good, but there is still a lack of houses for manual workers and other persons with small means The cost of labour and materials also interferes with the repairing work. The birth-rate has declined considerably during the last quinquennium In 1921 there were 1106 births and in 1925 only 973 The percentage of deaths at various age-periods has altered Thus the percentage of deaths under 1 year was 8 1 in 1921 and is now 6 3, while *the percentage of deaths* over the age of 65 has gone up from 48 8 in 1921 to 52 3 in 1925 The isolation hospital is reported to be " both obsolete and tumble-down," but nevertheless Dr Barnes is able to give credit to the nursing staff for obtaining excellent results A peculiar feature of the scarlet fever recently dealt with has been the number of relapses or second attacks " The cases referred to are those in which the patient has had an unquestionable and characteristic attack of scarlet fever, often of decided severity, and in which the second attack of undoubted scarlet fever occurs during the treatment " The second attack was, as a rule, of moderate or slight severity At the tuberculosis sanatorium trial has been made of Dr Samuel H Stewart's lung splint with encouraging results, and it is suggested *that this method has advantages over treatment by* artificial pneumothorax Dr Barnes again comments on the difficulty in getting in touch with cases of pulmonary tuberculosis at an early stage of the disease and supports his comments with the history of some typical cases He concludes with a list of the early signs, which should have a good effect in bringing available resource for diagnosis into action without delay *Antenatal work makes considerable progress* Thus the births numbered 973, and 177 expectant mothers visited the antenatal clinic at the municipal maternity hospital Dr A S Garden, the obstetrician-in-charge, says the attendances at the clinic are most satisfactory

An unusual feature of the sanitary work of Southport is the flushing of private drains at the public cost. *This apparently originated* in the large number of objectionable waste water-closets which needed special attention to keep them clean The practice was discontinued in the early years of the war, but was resumed in October, 1923, and cost the local authority £1761 in 1925 Dr Barnes thinks this public flushing of private drains may have an educative effect upon the householder The water-supply is derived from wells over 200 feet deep, maintained by a water board which supplies Southport, Formby U D, and West Lancashire R D The temporary hardness is 23 7 and the permanent hardness 11 6 Dr Barnes describes the water as exceptionally pure An atmospheric pollution table shows that Southport comes out well in comparison with London and industrial districts

Watford

Since the new Milk Act came into force the council have decided to take samples at least twice a year from every milk-supply coming into the town, and they have also appointed a veterinary inspector to examine the herds in the two cowsheds situated in the borough The demand for designated milk is increasing Dr W J Cox reviews the housing position in Watford *In 1923 a municipal scheme for the* erection of 953 houses was completed At the beginning of 1921 the medical officer of health estimated the need for houses at 1000 At the end of 1923 there was still a waiting-list of 1000 families Since the completion of the municipal scheme this waiting-list has gradually increased to 1650 in March, 1926 Private enterprise does not cope with the demand for working-class houses Two municipal schemes are therefore on foot—namely, to provide 124 houses on the Harebreaks estate and 48 on the Wiggenhall estate In addition to this 74 houses are being built on the latter estate for rehousing slum-dwellers Progress has been made in the demolition of condemned houses, the worst slum having now been entirely demolished, 30 years after its condemnation by the medical officer of health of that time Dr Cox states that during the *last five years* the maternity and child welfare work has been developed by the addition of a dental clinic and the assistance of the orthopædic centre of the Red Cross Association has proved very useful an increasing number of infant cases being referred to it every year. The mothers attending the antenatal clinic have increased from 175 in 1921 to 321 in 1925, the total births in the borough being 847 in the latter year The infants' home at Little Nascot was originally opened as a crèche during the war. At first it was used for both ailing and normal infants. It has been found, however, that certain parents make a convenience of the home for getting rid of their children. In future, therefore children will be returned home when their health is established and the home will be made available for ailing children in districts outside Watford The school report shows that as a rule parents in Watford respond promptly by obtaining treatment for their children when defects are pointed out The dental scheme in the schools has made steady and satisfactory progress during the past five years

Woking Urban District Guildford Borough, and Guildford Rural District

Dr. R. W. C Pierce reports that the fever hospital at Woodbridge, Guildford which serves his three districts and also the borough of Godalming and the rural district of Hambledon is inadequate. There are no small wards for complicated cases or cases requiring isolation Before the war plans had been prepared for a new ward for diphtheria and four single-bedded wards but the scheme was abandoned both then and after the war for reasons of economy. Dr. Pierce is convinced of the utility of an isolation hospital for diphtheria but is impressed with the objections to so-called hospital isolation for scarlet fever He is of opinion that cases indistinguishable from scarlet fever, but which are not true scarlet fever, are frequently admitted to hospital and there develop true scarlet fever. He thinks, also, that mild cases of true scarlet fever are apt to become more severe as the result of admission to a general fever ward. He concludes, therefore, that the only really satisfactory hospital method of treating scarlet fever would be to isolate each case in a separate cubicle During 1925 the average detention of diphtheria patients in Woodbridge hospital was 49 days and of scarlet fever patients 60 days In each case the stay might be shortened if unhealthy tonsils were removed, but in diphtheria convalescence the anæsthetic has its dangers and in scarlet fever operation could not safely be undertaken until all inflammation of the throat as resulting from the fever had subsided. There is still a great scarcity of cottages in the Woking district, and Dr. Pierce favours the erection of steel cottages of the Weir or Atholl type. In the Woking district many of the houses have large back additions which interfere with the lighting of the living-room, and a by-law is needed limiting the extent of this back addition In Guildford borough 406 municipal cottages have been built since the war, and the arrears of rent are strikingly small. Dr. Pierce has reason to believe, however, that the tenants are only able to pay the high rents by stinting themselves of food and necessaries The need for cheaper dwellings is imperative and the 22 cottage flats erected last year were enormously appreciated. Dr Pierce also thinks that the small percentage of rents in arrears indicates that ability to pay the rent is the chief qualification considered in the selection of tenants rather than need of accommodation. In Guildford rural district the council formulated a scheme in 1919 for the erection of 256 cottages: 195 of these have been erected but there is still a scarcity, made worse by the acquisition of existing cottages by week-end visitors In one parish the number of cottages built in recent years is actually less than the number converted into "week-end cottages" In all these districts considerable attention is being given to the improvement of the milk-supply.

Thrapston Rural District.

A quarter of Dr. A. McInnes's district population 82[illegible], is in Huntingdonshire, the rest in Northamptonshire Two cases of encephalitis lethargica were notified The one, a man of 29, died from septic trouble and the diagnosis was doubtful The other, a boy of 12, recovered, and it is stated by his schoolmaster that since restarting school this boy, previously rather dull mentally, has developed quite a capable mathematical brain

The one case of puerperal fever notified ended fatally, the patient was confined in a low-lying damp house with a cattle-yard behind it During the last nine or ten years impetigo contagiosa has been common among the children living in the immediate neighbourhood The public water-supply at Woodford was found to be polluted with *B coli* Investigations showed that the well was faultily constructed, permitting easy contamination by surface water. The mouth of the well was raised and the well was given an impervious surround down to the clay. Dr McInnes mentions that there is much room for improvement in the district as regards cleanliness in milk production.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED JUNE 19TH, 1926.

Notifications—The following cases of infectious disease were notified during the week:—Small-pox 1[illegible] (last week 201) scarlet fever 1412; diphtheria, 808, enteric fever, 53 pneumonia 572; puerperal fever, 50; cerebro-spinal fever 5 acute poliomyelitis 9 encephalitis lethargica 42 continued fever 1, dysentery 12, ophthalmia neonatorum 107 There were no cases of cholera, plague or typhus fever notified during the week.

Deaths—In the aggregate of great towns including London there were 2 (0) deaths from enteric fever 37 (5) from measles, 4 (4) from scarlet fever 21 (1) from whooping-cough 24 (6) from diphtheria 41 (11) from diarrhœa and enteritis under two years of age and 38 (4) from influenza. The figures in parentheses are those for London itself.

THE DREADNOUGHT HOSPITAL FOR SEAMEN.—On June 23rd, at Greenwich Lord Devonport laid the foundation-stone of a new building to be a nurses' home for the hospital with accommodation also for massage, X ray, and ultra-violet light treatment This, Captain Sir Arthur Clarke chairman of the board explained had only become possible since Lord Devonport when Food Controller, had determined to start a fund to commemorate the work done by seamen for the country in the war and had raised £250,000, one-third for endowment while the Admiralty had let the hospital have the ground on the Greenwich Hospital School side of the road on very favourable terms.

INTERNATIONAL EXHIBITION IN BUDAPEST—An exhibition was opened in Budapest early in June which will continue until the end of August. Its promoters have tried to cover the whole realm of hygiene and public health and there are sections dealing with every branch of domestic and sanitary science. In addition the exhibition contains many diversions and the visitor may enjoy the amenities of one of the most beautiful cities in Europe. A booklet has been issued entitled "Three Days in Budapest" which can be purchased from all travel bureaus for 1 million Hungarian crowns (about £3 sterling) and which contains coupons entitling the holder to a Hungarian visa at half price to reduced fares on the Hungarian railways, to hotel accommodation in Budapest for three days, and to many other facilities.

DONATIONS AND BEQUESTS.—Mr. Isidore Silverberg, of Sefton Park, Liverpool, besides bequests to Jewish and other institutions, left £1200 to the Hospital for Consumption and Diseases of the Chest as to £1000 to endow two Silverberg beds either at Mount Pleasant or at Delamere, and the income from £200 to provide the usual Christmas tree; £1000 to the Liverpool University as an Isidore Memorial Fund: £300 to the Norwood Jews' Hospital and Orphan Asylum; £500 to the National Council for Combating Venereal Diseases: and £250 to the Queen Victoria District Nursing Association.—Mr. Henry Johnson Mason of Halesworth Suffolk, formerly of Bingley, Yorks, left £1000 to Dr Maurice Alan Cassidy, of Montagu-square, W., "in recognition of his kindly and unremitting attention."—The late Mr. John Stuart, C.B.E., of North-side Clapham Common, S.W., and of Stonehurst, Ardingly, Sussex, left by will £1000 each to the Royal Infirmary, Edinburgh, and the King Edward's Hospital Fund.

Correspondence.

"Audi alteram partem"

NON-SPECIFIC PROTEIN INJECTIONS IN CHRONIC ARTHRITIS

To the Editor of THE LANCET

SIR,—Dr Yeoman's article in your issue of June 26th is worthy of most careful study and he is to be congratulated upon the success which has attended his use of injections of foreign proteins

Two sentences in his communication call for comment "Antibodies which have disappeared after an infection return to the serum after any procedure that increased the body temperature' 'Perspiration is an important factor, for the patients who derive the greatest benefit have the most profuse perspiration" From these two observations it would appear possible that the good results which this mode of treatment can produce are dependent mainly, if not entirely, upon the two factors of fever and sweating

For many years Wilde has claimed that rheumatic affections can be cured by the simultaneous production of artificial fever and sweating Those who have studied his work and treated patients in accordance with this view can claim startlingly good results For the production of fever and sweating there is no need to subject a patient to the pain and general disturbance that follow intravenous injections of vaccines Equally good results follow the enclosure of a patient in a warm moist atmosphere for half an hour once or twice a day, or the use of hot packs Such measures produce a rise of temperature of 3° to 4°, profuse acid sweating, and a speedy relief of pain and disabilities such as Dr Yeoman describes They entail neither admission to hospital nor confinement to bed and can be carried out at home without undue disturbance of daily routine They may be slower in their action than intravenous injections of foreign matter but are none the less certain of success if properly carried out Such treatment is not a cure-all, mechanical disabilities of joints may necessitate local mechanical measures in addition, septic foci must be dealt with if they are delaying cure and perpetuating disease and in some cases specific vaccines may be indicated—e g, in gonorrhœal rheumatism—but the main elements of treatment are to make the patient feverish and to make him sweat

I am, Sir, yours faithfully,

C E SUNDELL

June 28th, 1926

TUBERCLE BACILLI IN TUBERCULOUS PUS

To the Editor of THE LANCET

SIR,—I should like to record a few critical remarks on a paper with the above title by Dr A D Gardner, which appeared in THE LANCET of June 5th I do so chiefly to draw attention to the grave errors into which a laboratory worker may be led by a lack of appreciation of important clinical details

Dr Gardner compares his finding of 90 per cent positive results obtained by the microscopical examination of pus from lesions of bones and joints with the 50 per cent as reported by Dr Guest and myself in a recent paper (*Journal of Hygiene*, xxv, 109) Dr Gardner will notice that Dr Guest and myself were very careful not to compare our results with those of any other observer, as such a comparison, without carefully taking into account the clinical condition of the patient and the treatment adopted, would be inaccurate

He, however, contents himself with a rough division of his cases into those with, and those without, secondary acute inflammation The finding of tubercle bacilli in pus from such morbid lesions and their number depends on various factors, and I trust I shall be pardoned if I mention a few

(*a*) Condition of patient—whether improving or getting worse

(*b*) Type of lesion —

(1) If there is acute abscess formation or an acute exacerbation of a chronic condition, tubercle bacilli can be demonstrated in 100 per cent of cases

(2) On the contrary, in a chronic case, especially if it has been frequently aspirated and is advancing towards cure the specimen is usually serous in character, and tubercle bacilli are difficult to find

(3) Again, in cases of secondary infection, especially if the discharge is profuse, tubercle bacilli are difficult to demonstrate by microscopical examination

(*c*) Method of treatment —

(1) How frequently aspiration has been performed, and at what intervals

(2) Whether any chemical—e g, magnesium sulphate solution, iodoform emulsion, &c —has been introduced into the abscess cavity on a previous occasion

(3) Heliotherapy has also been mentioned as a possible factor, but of this I have no personal experience

From the above it will be obvious that the comparison of laboratory findings, without taking into account the other important clinical factors, is bound to be unreliable

I shall now turn to another source of error Dr Gardner has evidently worked with either caseous or fluid pus If he reads the paper by Dr Guest and myself more carefully, he will note that the material examined was not classed as pus, but as "pathological material" For example one specimen was from a case of tuberculous dactylitis without abscess formation, and some of the others consisted of only granulation tissue In such conditions it is well known that the finding of tubercle bacilli in direct film preparations is much more difficult than in pus, and here again the comparison goes astray Regarding Prof Dreyer's method of counter-staining, I have compared this method with others, and in my hands, though quite useful, it showed no superiority over other reliable methods if the latter were properly applied The method of test was to make an even film on a microscope slide, and after staining with carbol fuchsin and decolorising with acid and alcohol, the slide was cut with a diamond One half was stained by one and the remaining half by the other of the two counter-stains to be tested In this way a true comparison could be made

To conclude in a less critical tone, I am glad to note that Dr Gardner has remarked on the importance of the presence of various granules in tuberculous pus He says "Tuberculous pus often, perhaps always, contains in addition to tubercle bacilli, granules of various size " With this statement I heartily concur, and would even go further and leave out "in addition to tubercle bacilli" as not being entirely essential —I am, Sir, yours faithfully,

J W EDINGTON

Sheffield University June 22nd, 1926

SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS

To the Editor of THE LANCET

SIR,—Recent correspondence in your journal with reference to the surgical treatment of gastric and duodenal ulcers is both timely and important I note that Mr Seton Pringle, in his able article on hour-glass stomach, has come to the conclusion that partial gastrectomy is the treatment of choice With him I am in accord entirely, and my experience goes to prove that the most satisfactory procedure is a two-stage operation Most of these patients are emaciated and for this reason I perform a posterior gastro-enterostomy first of all, anastomosing the jejunum to the proximal sac of the hour-glass The immediate effect is improvement and a gain in weight I then perform the second stage of the operation, which consists in excision of the ulcer and distal sac of the hour-glass At the second operation a most striking finding has been a diminution in size and a cessation of activity in the ulcer, both points of importance in that they render the second operation an easier and safer enterprise. I have performed this operation now on several patients and have not had a moment's anxiety in the immediate post-operative events or a single subsequent regret. Dr. Arthur F. Hurst speaks of successes over years from the operation of gastro-gastrostomy. I have performed this operation but my results have not been comparable to those obtained by a two-stage gastrectomy. I feel sure that the surgical principle underlying such treatment should be 'operate upon a quiescent ulcer rather than upon an active one,' and such a principle is achieved by a preliminary gastro-enterostomy.

We owe a debt of gratitude to Mr. R. Leonard Ley, of Great Yarmouth, for his very true remarks upon perforating gastric ulcers, and I presume he includes perforating duodenal ulcers. In an industrial city like Bradford we get a very great number to deal with in the course of a year. Out of 150 cases operated upon my mortality amounts to 8 per cent. I confine myself to closing and inverting the perforation, inserting a drain for 18 hours to the bottom of the right kidney pouch and nothing further, the operation itself taking round about 12 to 15 minutes. In only nine cases have I had to perform a subsequent gastro-enterostomy. I have been kept informed about the majority of these cases and the ultimate result has been a cure, both clinically and by X ray examination. I quite agree with Mr. Ley that gastro-enterostomy at the time of closing the perforation is both unnecessary and unjustifiable. I only wish we could hear more from general practitioners like Mr. Ley, who are doing this work and who "have to live with their patients afterwards." I for one should like to congratulate him upon a very valuable contribution to gastric surgery.—I am, Sir, yours faithfully,

BASIL HUGHES, D.S.O., F.R.C.S., &c.

Surgeon, Bradford Municipal General Hospital; Hon. Surgeon, Bradford Children's Hospital; Hon. Assist. Surgeon, Bradford Royal Infirmary.

Bradford Moor, Bradford, June 21st, 1926.

ALTERATION OF VISION DUE TO BASAL FRACTURE OF SKULL

To the Editor of THE LANCET

SIR,—A quarryman aged 24, fell, two years ago, a distance of 50 feet down a shaft coming down on his buttocks. There were signs of basal fracture, slight hæmorrhages over the mastoid processes, slight unconsciousness, some hæmorrhage from the ears. He speedily recovered. His vision had been normal before the accident. It has become slightly myopic and indistinct. I find he can read 6/6 with a minus lens 0.5, cyl. with the axes vertical both eyes. Is there any reference in literature to alterations of vision due to basal skull injury?

I am, Sir, yours faithfully,

Corris, Merioneth, June 22nd. E. C. B. IBOTSON.

THE DANGER OF AN EXTERNAL DRUG COMBINING WITH AN INTERNAL DRUG

To the Editor of THE LANCET

SIR,—On reading Dr. T. M. Allison's letter in THE LANCET of June 26th I was reminded of a very disturbing case I had several years ago. A patient came to consult me for a phlyctenular ulcer of the eye as his own medical adviser was out of town. Not knowing he was taking pot. iodide internally, I dusted the eye with calomel, and the result was a very acute inflammation due, no doubt, to the formation of iodide of mercury. I may add that though the inflammation was very severe for a few days it cleared up completely and left no permanent ill-results; in fact, recollection suggests that the phlyctenular ulcer healed up very rapidly.

I am, Sir, yours faithfully,

J. JOHNSTONE REDMOND.

Chelsea, S.W., June 28th, 1926.

YAWS AND SYPHILIS IN TROPICAL AFRICA.

MASS TREATMENT WITH BISMUTH-ARSENIC COMPOUNDS

To the Editor of THE LANCET

SIR,—In THE LANCET of Jan. 30th, 1926, Levaditi reported favourably on a new compound—namely, basic acetyloxyamino-phenylarsenate of bismuth, produced by the reaction between a soluble salt of bismuth and stovarsol. About 18 months ago it occurred to me that a mixture of bismuth sodium tartrate and soamin, para-aminophenylarsenate of sodium, might produce a better therapeutic effect than bismuth sodium tartrate by itself, the latter now placed on the market by Howard and Sons as "Sobita" which we have been using for large numbers of yaws and syphilis with good results. Over 113 000 cases of yaws and approximately 22 000 of syphilis have now been treated, and somewhat larger numbers of yaws have also been treated, with a similar preparation, in a neighbouring colony—and I estimate that there are at least nine times the total shown for yaws still to be dealt with.

I did not, at the time mentioned, realise that in mixing "soamin" and bismuth sodium tartrate a reaction might result, but since reading Levaditi's article and attempting in a crude way to produce a reaction between bismuth sodium tartrate and stovarsol, I find that on boiling together not too dilute solutions of soamin and bismuth sodium tartrate prepared separately and then brought together, a reaction resulting in a similar fine suspension takes place on heating, which suspension deposits slowly leaving a clear supernatant fluid. An hypodermic injection administered to myself of the whole preparation produced by 3 gr. each of bismuth and soamin in 2 c.cm. of water resulted in tenderness, but less swelling and discomfort than is incident upon the introduction into the tissues of the soluble bismuth salt alone. Sequent on this a case of yaws treated by me with this preparation, by intramuscular injection responded rapidly. I thereupon instructed Dr. J. G. McNaughton, our venereal diseases officer and Dr. Armstrong, attached to the Native Hospital, Dar es Salaam, to give this preparation a trial, and an extract from Dr. McNaughton's report is given below. Dr. McNaughton's clinic is a travelling clinic, and the extract is from his report for April, 1926:—

> You will observe that I have treated patients with:—yaws 1158, syphilis 538, and other diseases 625. *Yaws.*—There were about an equal number of children and adults. Several showed an almost rupial crust over the yaws, and many had tertiary manifestations in the soles of the feet and palms of the hands. The injection given was a combination of bismuth sodium tartrate (gr. 3) and soamin (gr. 2), as you recommended, in 1 c.cm. of water, administered every second day. Cases of yaws almost invariably cleared up in six days, and were so nearly healed on the fifth day (even the most severe cases) that the third injection was not given. *Syphilis.*—No primary or secondary case was seen. All were either tertiary or congenital, about 50 per cent. of each. About 10 per cent. of the tertiary cases were unable to move one or more of the limbs, on account of ankylosed joints, and I have seldom seen, even in this country, so severely ulcerated cases. These patients all received the combination of the two drugs by injection, and within 12 days—i.e., after six injections—quite 75 per cent. were completely healed. I have never seen such rapid improvement, even after bismuth injections, so that I am inclined to conclude that the addition of the soamin has accelerated the healing. In the 1696 patients who received two or more injections I saw only 10 cases of mild stomatitis. It may not be a case of post hoc propter hoc, but, in my previous experience of treatment by the bismuth salt the cases of stomatitis have been greater in number and more severe.
>
> I have seen here five *female* patients who were treated at the Sewa Hadji Hospital 18 or 24 months ago. All received injections 6, 8, or 10 in number. All these people had had extensive ulceration of the limbs. To-day they appear in perfect health. There is no sign of ulcer or sore and their general condition appears to be much better than that of their neighbours. In this connexion I noticed that after 1 or 2 injections the very severe cases of syphilis had a different look. They were brighter,

their skin and eyes seemed healthier, and I was struck by their apparently altered outlook on life

Dr Armstrong treated 15 cases and reported similar results but emphasised the fact that he did not see any stomatitis in his patients—they were, however, too few The question of treatment to us in a territory of 365,000 square miles and a scattered population of approximately ,6,000,000, a large percentage of which is afflicted with yaws, and to a lesser extent syphilis is of vital importance We cannot afford expensive drugs, nor do we think that for mass treatment with the object of reducing as rapidly as possible the enormous degree of infectivity, the immediate amelioration of the physical condition of the sufferers, and the safeguarding of the coming generation, it is necessary, or yet feasible to employ them To attempt permanent cure with the exhibition of the salvarsan group is absolutely out of the question, and, apart from expense it would be impossible to secure anything approaching regular attendance amongst an African population

In the Dutch West Indies, Dr Winckel reports the use of 400 kg of neosalvarsan, costing some £250,000, for the treatment of yaws, and his opinion is that an average of four injections were essential I have stressed these points to show that a few injections of neosalvarsan are no more valuable and do not attain any better clinical results than the use of bismuth, and that if one or other is to be used for yaws or syphilis, to achieve our local purposes relating to mass treatment, then neosalvarsan should not be used except in special cases Regarding more particularly the treatment of syphilis with bismuth sodium tartrate the reports as a whole are satisfactory but are not uniform Its resistance as compared with yaws is greater in ratio of about 4 1—namely, it requires about three to four times the quantity of bismuth for a so-called cure—that is, the entire absence of active signs and the general recovery in health of the patient Dr L W Harrison admits the great difficulty of converting a positive into a negative serum reaction One of the types of cases referred to, early secondary, requires treatment under close supervision for some three years, during which time 16 g of neosalvarsan is used costing about £8 per head, and, be it noted, with no claim to negative reaction We, on the other hand can treat approximately 500 cases of yaws or 125 of syphilis for 16*s* —the cost of staff, organisation, &c , is, of course, equal in either case

We have been using the soluble salts of bismuth in this Territory since early in 1922, shortly after Roux had stated that bismuth was of value in syphilis, before it was generally adopted by anybody, and the methods we employed at that time have resulted in about 300,000 cases of yaws being treated in Kenya, the Sudan, Zanzibar, Fiji, and this Territory I wish therefore to indicate to those interested, in view of our four years' experience and the mass of disease still remaining to be dealt with, that the quickest, and therefore the least expensive, effective measure should be taken, so far as the indigenous population of tropical Africa is concerned , otherwise we are wasting time in handling a few thousands in a futile attempt at permanent cure whilst hundreds of thousands requiring immediate relief are left untouched I hope that some of your readers, who have the welfare of the native at heart, and are in a position to test the compound produced by the interaction of bismuth sodium tartrate and soamin may give it a trial in syphilis and report as to its relative efficacy as compared with Levaditi's preparation "bistovol" The former can be prepared very simply at a cost of less than a penny a dose, whereas bistovol will probably be at a price which for us will be prohibitive Bismuth by itself is good enough for yaws, but it would appear that the compound of bismuth and soamin is much the better for syphilis—the low percentage and mild degree of stomatitis is also a decided advantage in its favour

I am, Sir, yours faithfully,
J O. SHIRCORE, M B , M R C P Edin ,
Director of Medical and Sanitary Services,
Tanganyika Territory

May 12th, 1926

Parliamentary Intelligence.

HOUSE OF LORDS

TUESDAY, JUNE 29TH

University of London Bill

THE University of London Bill was read a second time

HOUSE OF COMMONS

THURSDAY, JUNE 24TH

Milk for Mothers in Mining Areas

Dr SALTER asked the Minister of Health what additional provision was being made, as a consequence of the miners' dispute, for the supply of milk to nursing and expectant mothers and to young children through the county councils or local authorities —Mr NEVILLE CHAMBERLAIN replied I have no information as to any special action taken in this matter by local authorities On the question of policy, I may refer the hon Member to the reply which I gave on this subject on the 10th instant

Neurasthenic Patient's Pension

Dr SALTER asked the Minister of Pensions if he was aware that ex-stoker William Ewart Gladstone Day, No K 21,477, late Royal Navy, was granted a final award of only 15 per cent for 35 weeks in April, 1922, while still suffering from neurasthenia and deafness due to an explosion on H M S *Bulwark* in November, 1914, when he was one of only 16 survivors , and that this pension was increased to 20*s* 7*d* per week on Dec 31st, 1925, after prolonged correspondence with his department when this man's neurasthenia was assessed at 20 per cent , why the pension was reduced to 16*s* on March 2nd, 1926, when his neurasthenia was still assessed at 20 per cent and his ear condition remained unchanged , and why this pension has not been made retrospective to June 2nd, 1923, more than a year after his final award of 1 5 per cent , when he was admitted to hospital and operated on for acute mastoid disease —Major G C TRYON replied The hon Member has been misinformed The award made in 1922 to which he refers was in respect of deafness only As regards the award for neurasthenia this was originally at the rate of 30 per cent and was reduced to 20 per cent by the medical board of Jan 22nd, 1926 Mr Day did not make a claim on the Ministry in proper form in respect of neurasthenia until February, 1925, but the award in respect of that disability was made from the date of a letter on his behalf which has been accepted as constituting an earlier claim The award in respect of deafness in replacement of the award made in 1922 runs from the date of the medical examination by a Ministry doctor which definitely proved the need for the amendment of the 1922 award I can find no ground for making either award from an earlier date

Death in Bedford Prison

Mr PETHICK-LAWRENCE asked the Secretary of State for the Home Department (1) whether he was now in a position to make a statement with regard to the circumstances attending the death of Mr Reginald Russell in Bedford prison on May 23rd, and (2) what arrangements were made for removal to hospital of unconvicted prisoners who were seriously ill , what regulations existed for securing that the relatives were informed of serious illness and whether they were complied with in the present instance —Sir W JOYNSON-HICKS replied I regret to say that the report discloses errors of judgment and failure to comply with the regulations on the part of certain officials of the prison The prisoner complained of illness on April 27th and May 10th, and on May 11th took to his bed until his death on May 23rd His disease was wrongly diagnosed and he did not receive either the medical or nursing treatment which, in my opinion he should have had , nor was he removed to hospital The prisoner was suffering from kidney disease, and it may be that his condition was such that his life could not in any event have been saved, but that would not, of course, excuse in any way the mistakes and irregularities that were committed The facts of this case, deplorable as they are, do not suggest that the regulations with regard to the treatment of illness in prison are defective, but, as in all human institutions, mistakes cannot always be avoided The Secretary of State is ultimately responsible for the conduct of prison officials, and I have decided to take disciplinary measures in regard to the officers concerned I am not in a position to give my final decision in regard to these to-day, but if the hon gentleman will put down a question for to-day week, I hope to have completed my decisions

Septicœmia following Childbirth

Colonel DAY asked the Minister of Health if his attention had been drawn to the number of deaths due to puerperal septicaemia following childbirth in the Kingston area and in view of the fact that many of these cases had been connected with one nursing home in particular would he cause a full inquiry to be made as to the effectiveness of the existing county council regulations —Mr NEVILLE CHAMBERLAIN replied The answer to the first part of the question is in the affirmative As regards the second part an inquiry has already been made into these cases by one of the medical officers of my department, and her report is now under consideration

National Insurance Statistics

Sir NICHOLAS GRATTAN DOYLE asked the Minister of Health, with reference to National Health Insurance the total of the accumulated funds at Dec 31st 1925 the total payments made during the year ended Dec 31st 1925 by insured persons, employers and the State respectively , the number of insured persons male and female separately the total benefits paid during the year ended Dec 31st 1925 for sickness benefit, disablement benefit maternity benefit, medical benefit and additional benefits respectively the total amount allocated to approved societies for additional benefits the total amount retained by the State, which is regarded by the Act as surplus the number of societies which have disposable surplus for additional benefits and the number of societies in deficiency —Mr NEVILLE CHAMBERLAIN replied The particulars asked for with reference to National Health Insurance so far as available are given for England and Wales in the following statement —

		£
Total of the accumulated funds at Dec 31st 1925		113 000,000
Total payments made during the year ended Dec 31st, 1925—		
by insured persons		11 970 000
employers		12 800,000
the State		7,220,000
Number of insured persons—		
Male	9 393 000	
Female	4,350 000	
Total benefits paid during the year ended Dec 31st, 1925—		
for sickness benefit		9,335,000
disablement benefit		4,514 000
maternity benefit		1 489 000
medical benefit		8,449,000
additional benefits not included above*		761 000

*Additional benefits which take the form of increases of ordinary cash benefits (sickness, disablement, and maternity) are included in the figures for those benefits and cannot be separately stated. Payments in respect of additional benefits which do not take that form are separately shown

The total amount allocated for distribution by approved societies by way of additional benefits of every description in the year 1925 may be estimated approximately at	2 500,000
The inquiry as to the total amount retained by the State which is regarded by the Act as surplus is not understood The whole of the assets of a society consisting of— (1) Reserve values credited under Sections 66 and 69 of the Act (2) Sums standing in the investment account ' under Section 70 (3) Sums standing to the credit of the society in the National Health Insurance Fund other than in investment account ', (4) Sums invested by the society under Section 71 and (5) Cash in the hands of the society are brought into its valuation balance sheet for the purpose of the periodical valuation under Section 74 by which alone the existence of, or the amount of a surplus can be ascertained	
The number of units (i e centralised approved societies and branches of approved societies with branches) operating in England and Wales at the first valuation which had disposable surplus for additional benefits was	7,775
The number of societies and branches in deficiency was	377

The Government Actuary is preparing a report on the second valuation of the assets and liabilities of approved societies, and hopes to issue it in the autumn.

Diabetes Patient's Treatment in Prison

Mr PURCELL asked the Secretary of State for the Home Department whether his attention had been drawn to the case of Mr John Forshaw, 4, Peacock-street Salford, who after his house was raided by the police on May 14th, was taken to the Salford Town Hall police-station whether he was aware that he informed the officers that he was suffering from diabetes and asked to see a doctor; *that this request* was refused, as was also a request for the supply of blankets and that the windows might be closed, the only protection he had during the night being the coat of a man in the same cell who put his coat over Mr Forshaw who was obviously ill and whether, seeing that after conviction the next day Mr Forshaw was removed to Strangeways Hospital and died on June 9th as the result of bronchitis and pneumonia contracted in the police cell he would have a public inquiry made into this treatment given to a man prior to trial —Sir W JOYNSON-HICKS replied Forshaw was in police custody from May 14th to 17th and was not treated as an invalid and made no application to be treated as such on reception into prison on the 17th he was admitted into the prison hospital until the 20th when he was released on bail in view of his appeal to Quarter Sessions At that time there were no signs of illness other than diabetes from which he had been suffering for four years On May 21st he called on the police and expressed satisfaction with his treatment during detention both in police custody and in prison I understand that he fell ill on June 5th 16 days after his release from prison and on the facts before me no connexion is shown between his treatment while in custody and his death from bronchitis and pneumonia on June 9th

Problems of Tropical Diseases

Mr HERBERT WILLIAMS asked the Secretary of State for the Colonies whether any system existed for the exchange of knowledge on the problems of tropical diseases of man animal, and plant between his department and the corresponding departments of other countries with tropical possessions —Mr AMERY replied The Imperial Bureau of Entomology, the Imperial Bureau of Mycology and the Bureau of Hygiene and Tropical Diseases constantly receive information of the nature indicated in my hon friend's question from all parts of the Empire and foreign territories This information is summarised in the periodical monthly and quarterly reviews which are published by these bureaus and distributed to subscribers, including the Governments of the oversea dependencies I should also refer in connexion with human tropical disease to the valuable work of the health organisation of the League of Nations through which knowledge of the progress made in that direction is widely distributed between the different Governments represented in the organisation

Mr WILLIAMS Is there any link with the Dutch Government in this matter ?

Mr AMERY I think so both through the League of Nations and the use made of the excellent publication issued by their department in Java

Protection of Children in India

Mr JOHNSTON asked the Under Secretary of State for India whether any legislation had been introduced by the Government of India to protect children from maltreatment and exploitation by professional beggars agents of brothels, and if so when —Earl WINTERTON replied This matter is now in the main one for the provincial governments and legislatures to deal with Acts for the protection of children and young persons and for the trial and punishment of youthful offenders were passed in Madras Bengal and Bombay in 1920 1922, and 1924 respectively Children are protected from the agents of brothels by the Indian Penal Code which applies throughout India and the provisions of which in this respect, have recently been made more stringent

Artificial Sunlight Treatment

Captain FRASER asked the Minister of Health if he would give the names of any metropolitan boroughs in which artificial sunlight treatment had been introduced in a maternity and child welfare centre or centres and what contribution if any his department had made towards the cost of artificial sunlight equipment and or of the first year's running expenses in connexion with this treatment —Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) replied According to the information in the possession of my right hon friend's department, provision has been made for artificial light treatment at or in connexion with maternity and child welfare centres in the following metropolitan boroughs Bethnal Green Deptford Greenwich Hackney, Islington Kensington Poplar, St Marylebone St Pancras, Shoreditch Southwark Stepney, and Westminster In those cases in which the prior approval of my right hon friend's department was obtained to the arrangements and a contribution is desired towards the cost, the usual grant of 50 *per cent* is being paid towards the net cost of the installation and the first year's running expenses

MONDAY, JUNE 28TH.

Pit-head Baths

Mr WILFRID PALING asked the Secretary for Mines how many coal-mines in Great Britain had established pit-head baths, and how many persons such baths provided for —Colonel LANE-FOX replied At Dec 31st 1925 pit-head baths on the shower bath principle had been installed for general use at 23 coal-mines in Great Britain and were in course of installation at nine others The total number of shower bath cubicles comprised in these installations was 1729 which it may be assumed would provide accommodation for about 17,000 to 20,000 men per day These figures do not include slipper baths, plunge baths, swimming baths, or any bathing accommodation reserved for the use of officials only

Factory Legislation and Health

Sir **WILFRED SUGDEN** asked the Prime Minister if he could yet give a date when legislation upon the factory conditions of employment would be introduced , and if he would give opportunities for tested and considered practical suggestions prepared by the various industrial research associations to be included in such legislation if it be found neither to handicap nor increase cost of production, but to give healthier conditions of labour for employees —Captain **HACKING** (Under Secretary for Home Affairs) replied My right hon friend the Home Secretary has already promised to introduce the Factory Bill this session for purposes of information and consultation, and he hopes to introduce the Bill next month He will certainly give careful and sympathetic consideration to any such suggestions as are referred to in the question

Female Nurses and Insane Male Patients

Mr **CHARLES EDWARDS** asked the Minister of Health whether he was aware that at the Hellingly Asylum the East Sussex County Council employed female nurses in attendance on insane male patients , and whether, in view of the moral and physical dangers thus involved, he would take steps to prevent this practice —Mr **NEVILLE CHAMBERLAIN** replied The answer to the first part of the question is in the affirmative I am unable to accept the assumption upon which the second part of the question is based Medical superintendents who have had experience of the practice of nursing male patients by women nurses are practically unanimous in thinking that it is desirable in certain types of cases I am advised that there are certain classes of patients who can be nursed by women nurses with great advantage to the patients and without risk to the nurses I do not, therefore, propose to take action in the direction suggested by the hon Member

New Dentists Bill

Mr A **ALEXANDER** presented a Bill to amend the Dentists Act, 1921, which was read a first time

TUESDAY, JUNE 29TH

Disinfectants on Merchant Vessels

Mr **CLUSE** asked the President of the Board of Trade if he was aware that his department still approved for use on board ship chemical disinfectants which had been disapproved of for use on His Majesty's naval ships and shore establishments, and if, in view of the necessity for the prevention of the spread of infection on passenger and emigrant ships, he would consider revising the lists in consultation with the Admiralty and the Ministry of Health — Sir P **CUNLIFFE-LISTER** replied I am not aware that any of the disinfectants approved for use on board merchant vessels are unsuitable for the purpose Such disinfectants are submitted for approval and are tested chemically by the Government laboratory and bacteriologically by the Lister Institute, and if they do not come up to the required standards they are not approved The list of disinfectants so approved is continually under revision, the officers concerned having been instructed to take samples from time to time in order that a check test may be made Where such a sample is found not to conform to the required standard the name of the disinfectant in question is removed from the approved list I will, however, have the list examined as suggested by the hon Member

Venereal Disease in the Army

Mr **BASIL PETO** asked the Secretary of State for War whether the incidence of venereal disease in the Army had increased or diminished in the last three years , and what was the general view of the Army medical service as to the value of the preventive measures that had been employed—Sir L **WORTHINGTON-EVANS** replied During the last three years for which complete statistics are available, the incidence of venereal disease in the Army has decreased from 74 0 per 1000 of the strength in 1921 to 47 8 per 1000 in 1924 My medical advisers consider that this reduction is mainly due to the very effective preventive measures that have been and are still being employed I will also refer my hon friend to the information contained on pages 15–18 of the report on the health of the Army for 1924

Medical Reports and Army Pensions

Mr **HORE-BELISHA** asked the Secretary of State for War what procedure was followed in the case of men invalided from His Majesty's Army who desired to question the decision of the medical officer which deprived them of pension rights , and whether the medical officer's report, which was the basis of the complaint, was referred to and taken as evidence of the correctness of that report —Sir L **WORTHINGTON-EVANS** replied A man whose claim to disablement pension has been rejected by the Commissioners of the Royal Hospital, Chelsea, on the strength of the report of a medical board, may appeal to the Commissioners for reconsideration of his case on medical grounds and may state the grounds of his appeal The report of the medical board is considered in conjunction with the whole of the man's medical history during his Army service Any evidence which the man may adduce in his own interest is also considered and investigated by reference to his late commanding officer or other persons likely to be able to confirm his statement The opinions of the consulting physician and surgeon to the Army are obtained when necessary before a decision is given.

Puerperal Septicæmia following Childbirth

Colonel **DAY** asked the Minister of Health if, in view of the fact that further deaths had occurred from puerperal septicæmia following childbirth in the Kingston Nursing Association's home, which made a total of eight deaths from this cause during the last six months, and the criticisms made by the Kingston coroner on the conditions existing at this home, he was in a position to give further information to the House on the report that had been made on this home by one of his medical officers —Sir **KINGSLEY WOOD** replied My right hon friend has now considered this report, and regrets to say that it indicates that there has been grave laxity in the administration of this home and of the district midwifery practice associated with it He is about to address a communication to the Nursing Association dealing fully with the facts elicited by the inquiry, and he proposes to send a copy of the communication to the County Council and the Kingston Town Council My right hon. friend will be happy also to send a copy to the hon Member and to any other hon Member who desires it

The Services.

THE Orders following upon the Recommendations of the Inter-departmental Committee upon medical reform in the fighting Services were published at the end of the week They were foreshadowed in THE LANCET last week and will give the greatest satisfaction

In any case in which transfer from the old rates may involve loss the old rates will be maintained

The revised rates of pay and additional pay (but not charge pay) sanctioned by the Warrant for each corps will be subject, as from July 1st, to the deduction of 5½ per cent which was made to the old rates as from July 1st, 1924, and will further be subject to revision in respect of subsequent variation in the cost of living in the same manner and to the same extent as the rates introduced from July 1st, 1919

The amendments take effect as from July 1st, 1926

ROYAL NAVAL MEDICAL SERVICE

The exact Recommendations of the Inter-departmental Committee will be available to the public next week, including new Orders in respect of the Dental and Nursing Services

The main reforms in the Medical Service may be indicated as a result of the Recommendations The following changes in the conditions of service of medical officers, R N , will take effect from July 1st, 1926, or as soon afterwards as the necessary arrangements can be made

Surgeon Captains

The maximum number of surgeon captains will be increased from 16 to 20, two of whom will be appointed to the R N Hospital, Haslar, as professors of medicine and surgery respectively, on instructional duties connected with the general courses described below The appointment of Director of Medical Studies, Naval Medical School, R N College, Greenwich, will in future be held by a surgeon captain, and a surgeon captain will be appointed to the R N. Hospital, Malta, as second in charge

Specialists' Appointments and Allowances

Charge Pay

The number of specialist appointments will be increased from 46 to 60, and the new appointments will include specialist posts in medicine, surgery, radiology and hygiene The allowance payable to holders of specialist appointments will be increased from 2s 6d to 5s per day, as from July 1st, 1926

The grant of charge pay will be made as from July 1st 1926, on the following scale for medical officers in charge of various hospitals and sick quarters Surgeon Rear Admirals and Surgeon Captains, 10s a day Surgeon Commanders, 5s a day

Professional Courses General and Special.

Every officer below the rank of Surgeon Captain, except when he has just vacated an appointment at a home hospital or is due to take his promotion course, will be appointed, if his services can be spared, once in every four years to the R N Hospital, Haslar for a course of instruction of not less than four months' duration in clinical medicine and surgery and allied subjects At the end of the course, instead of being placed on unemployed time the officer will be appointed for duty at one of the R N hospitals at Haslar Chatham, or Plymouth unless or until he receives an appointment elsewhere

Every officer selected to hold a specialist appointment will, provided his services can be spared undergo a course of not less than six months' duration in his special subject at a civil hospital in London or other teaching centre, and will subsequently undergo a course of three months duration in that subject every four years while he is employed as a specialist

The existing senior medical officers' courses will to a large extent be superseded by these general and specialist courses which will necessitate the increase in establishments and the new arrangements will be inaugurated as soon as possible

Officers entering the service on or after July 1st, who have held resident appointments in civil hospitals less than one year before the date of entry, are eligible for ante-dating in certain circumstances which will be made public shortly

Dental Officers, R N

The rank of Surgeon Captain (D) will be introduced and the establishment of dental officers increased to 64

The Nursing Service

Detailed improvements in the Nursing Service will also be published shortly

ROYAL ARMY MEDICAL CORPS

The rates of pay of officers will be amended as follows —

Old Rates	£	s	d	*New Rates*	£	s	d
Lieut	1	2	0	Lieut	1	2	0
Capt	1	7	0	Capt	1	7	0
Capt, after six years' commissioned service	1	8	0	Capt, after eight years' commissioned service	1	10	0
Capt, after ten years' commissioned service	1	11	0	Capt, after ten years' commissioned service	1	12	6
Major	1	15	0	Major	1	17	6
Major, after 15 years' commissioned service	2	0	0	Major, after 15 years' commissioned service	2	2	6
				Major, after 18 years' commissioned service	2	5	0
				Major, after 20 years' commissioned service	2	10	0
Lieut Col	2	10	0	Lieut Col	2	17	6
Lieut-Col, after 20 years' commissioned service	2	12	6	Lieut Col after three years' service as such	3	2	6
Lieut Col after 25 years' commissioned service	2	15	0				
Colonel	3	5	0	Colonel	3	10	0
Maj-Gen	4	15	0	Maj-Gen	4	15	0
Director Gen	£2500 a year			Director Gen (plus lieut gen's allowances)	6	0	0

An officer of the Royal Army Medical Corps employed at the War Office as Assistant Director-General, Assistant Director, or Deputy-Assistant Director-General shall receive additional pay at 5s a day instead of 2s 9d as at present provided The rate of additional pay for officers of the Royal Army Medical Corps appointed to act as specialists shall be increased to 5s a day for all subjects

An officer commissioned after holding a resident appointment of not less than one year in a civil hospital may be granted an antedate not exceeding one year in respect of the period spent in such an appointment provided that the interval between the termination of the hospital appointment and the date of entry into the service shall not ordinarily exceed six months This antedate will count as commissioned service for the purpose of increments of pay, promotion, retirement, retired pay, and retiring gratuities An officer shall be eligible to retire with a gratuity of £1000 after seven years' service instead of after eight and a half years', and an officer who, after three years' service as a major is eligible to retire with a gratuity of £1800 or after six years' service as a major with a gratuity of £2500, shall be eligible to retire with £2800 in lieu of £1800 and £3500 in lieu of £2500

An officer serving as a medical officer, R A M C, on Sept 13th 1919, shall be eligible on retirement as a major after 20 years' service for retired pay at a daily rate of £1 if more favourable to him than the rate assessed under the ordinary scale for medical officers An officer who has retired as a major since Sept 13th, 1919, after completing 20 years' service will be entitled to benefit under this provision with effect from the date of retirement

ROYAL AIR FORCE MEDICAL SERVICE

It has been announced from the Air Ministry that increases of pay have been granted in all ranks above flight lieutenant, promotion to which rank occurs after two years' satisfactory service In this Service entry does not commit the officer to permanency, permanent commissions being granted by selection from officers holding a short service commission, freedom being thus allowed to the individual and to the authority. There has been an increase in the gratuities granted to short service officers passing to the Reserve both after three years' and after five years' service Higher allowances are made to married officers and the retiring allowances to permanent officers have been increased Larger opportunities are also being given to permanent officers to pursue professional study while the tenure of house appointments in civil hospitals entitles the officer to antedating for promotion purposes

ROYAL ARMY DENTAL CORPS

The rates of pay of officers will be amended as follows —

Old Rates	£	s	d	*New Rates*	£	s	d
Lieut	1	0	0	Lieut	1	0	0
Capt	1	5	0	Capt	1	5	0
Capt., after six years' commissioned service	1	6	6	Capt after eight years' commissioned service	1	8	0
Capt, after ten years' commissioned service	1	8	6	Capt after ten years' commissioned service	1	10	0
Major	1	13	0	Major	1	15	0
Major after 15 years' commissioned service	1	18	0	Major after 15 years' commissioned service	2	0	0
				Major, after 18 years' commissioned service	2	2	6
				Major, after 20 years' commissioned service	2	7	6
Lieut-Col	2	7	6	Lieut Col	2	15	0
Lieut Col, after 20 years' commissioned service	2	10	0	Lieut Col, after three years' service as such	3	0	0
Lieut Col, after 25 years' commissioned service	2	12	6				
				Colonel	3	7	6

A captain in the Army Dental Corps will be eligible for promotion to the rank of major after 12 years' commissioned service in the corps provided that he has qualified in such manner as may be prescribed by the Army Council The officer appointed to the charge of the Dental Laboratories, Aldershot, will do not include slipper baths, plunge baths, swimming baths, or any bathing accommodation reserved for the use of officials only

Factory Legislation and Health

SIR WILFRED SUGDEN asked the Prime Minister if he could yet give a date when legislation upon the factory conditions of employment would be introduced, and if he would give opportunities for tested and considered practical suggestions prepared by the various industrial research associations to be included in such legislation if it be found neither to handicap nor increase cost of production, but to give healthier conditions of labour for employees —Captain HACKING (Under Secretary for Home Affairs) replied My right hon friend the Home Secretary has already promised to introduce the Factory Bill this session for purposes of information and consultation and he hopes to introduce the Bill next month He will certainly give careful and sympathetic consideration to any such suggestions as are referred to in the question

Female Nurses and Insane Male Patients

Mr CHARLES EDWARDS asked the Minister of Health whether he was aware that at the Hellingly Asylum the East Sussex County Council employed female nurses in attendance on insane male patients, and whether, in view of the moral and physical dangers thus involved, he would take steps to prevent this practice —Mr NEVILLE CHAMBERLAIN replied The answer to the first part of the question is in the affirmative I am unable to accept the assumption upon which the second part of the question is based Medical superintendents who have had experience of the practice of nursing male patients by women nurses are practically unanimous in thinking that it is desirable in certain types of cases I am advised that there are certain classes of patients who can be nursed by women nurses with great advantage to the patients and without risk to the nurses I do not, therefore, propose to take action in the direction suggested by the hon Member

New Dentists Bill

Mr A ALEXANDER presented a Bill to amend the Dentists Act, 1921, which was read a first time

TUESDAY, JUNE 29TH

Disinfectants on Merchant Vessels

Mr CLUSE asked the President of the Board of Trade if he was aware that his department still approved for use on board ship chemical disinfectants which had been disapproved of for use on His Majesty's naval ships and shore establishments, and if, in view of the necessity for the prevention of the spread of infection on passenger and emigrant ships, he would consider revising the lists in consultation with the Admiralty and the Ministry of Health —Sir P CUNLIFFE-LISTER replied I am not aware that any of the disinfectants approved for use on board merchant vessels are unsuitable for the purpose Such disinfectants are submitted for approval and are tested chemically by the Government laboratory and bacteriologically by the Lister Institute, and if they do not come up to the required standards they are not approved The list of disinfectants so approved is continually under revision, the officers concerned having been instructed to take samples from time to time in order that a check test may be made Where such a sample is found not to conform to the required standard the name of the disinfectant in question is removed from the approved list I will, however, have the list examined as suggested by the hon Member

Venereal Disease in the Army

Mr BASIL PETO asked the Secretary of State for War whether the incidence of venereal disease in the Army had increased or diminished in the last three years, and what was the general view of the Army medical service as to the value of the preventive measures that had been employed—Sir L WORTHINGTON-EVANS replied During the last three years for which complete statistics are available, the incidence of venereal disease in the Army has decreased from 71 0 per 1000 of the strength in 1921 to 47 8 per 1000 in 1924 My medical advisers consider that this reduction is mainly due to the very effective preventive measures that have been and are still being employed I will also refer my hon friend to the information contained on pages 15–18 of the report on the health of the Army for 1924

Medical Reports and Army Pensions

Mr HORE-BELISHA asked the Secretary of State for War what procedure was followed in the case of men invalided from His Majesty's Army who desired to question the decision of the medical officer which deprived them of pension rights, and whether the medical officer's report, which was the basis of the complaint, was referred to and taken as evidence of the correctness of that report —Sir L WORTHINGTON-EVANS replied A man whose claim to disablement pension has been rejected by the Commissioners of the Royal Hospital, Chelsea, on the strength of the report of a medical board, may appeal to the Commissioners for reconsideration of his case on medical grounds and may state the grounds of his appeal The report of the medical board is considered in conjunction with the whole of the man's medical history during his Army service Any evidence which the man may adduce in his own interest is also considered and investigated by reference to his late commanding officer or other persons likely to be able to confirm his statement The opinions of the consulting physician and surgeon to the Army are obtained when necessary before a decision is given

Puerperal Septicæmia following Childbirth

Colonel DAY asked the Minister of Health if, in view of the fact that further deaths had occurred from puerperal septicæmia following childbirth in the Kingston Nursing Association's home, which made a total of eight deaths from this cause during the last six months, and the criticisms made by the Kingston coroner on the conditions existing at this home, he was in a position to give further information to the House on the report that had been made on this home by one of his medical officers —Sir KINGSLEY WOOD replied My right hon friend has now considered this report, and regrets to say that it indicates that there has been grave laxity in the administration of this home and of the district midwifery practice associated with it He is about to address a communication to the Nursing Association dealing fully with the facts elicited by the inquiry, and he proposes to send a copy of the communication to the County Council and the Kingston Town Council My right hon friend will be happy also to send a copy to the hon Member and to any other hon Member who desires it

The Services.

THE Orders following upon the Recommendations of the Inter-departmental Committee upon medical reform in the fighting Services were published at the end of the week They were foreshadowed in THE LANCET last week and will give the greatest satisfaction

In any case in which transfer from the old rates may involve loss the old rates will be maintained

The revised rates of pay and additional pay (but not charge pay) sanctioned by the Warrant for each corps will be subject, as from July 1st, to the deduction of 5½ per cent which was made to the old rates as from July 1st, 1924, and will further be subject to revision in respect of subsequent variation in the cost of living in the same manner and to the same extent as the rates introduced from July 1st, 1919

The amendments take effect as from July 1st, 1926

ROYAL NAVAL MEDICAL SERVICE

The exact Recommendations of the Inter-departmental Committee will be available to the public next week, including new Orders in respect of the Dental and Nursing Services

The main reforms in the Medical Service may be indicated as a result of the Recommendations The following changes in the conditions of service of medical officers, R N, will take effect from July 1st, 1926, or as soon afterwards as the necessary arrangements can be made

Surgeon Captains

The maximum number of surgeon captains will be increased from 16 to 20, two of whom will be appointed to the R N Hospital, Haslar, as professors of medicine and surgery respectively, on instructional duties connected with the general courses described below The appointment of Director of Medical Studies, Naval Medical School, R N College, Greenwich, will in future be held by a surgeon captain, and a surgeon captain will be appointed to the R N Hospital, Malta, as second in charge

Specialists' Appointments and Allowances Charge Pay

The number of specialist appointments will be increased from 46 to 60, and the new appointments will include specialist posts in medicine, surgery,

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

SOCIETIES

ROYAL INSTITUTION, 21 Albemarle street, W
Monday, July 5th —5 P M., General Meeting of the Members

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASE, 11, Chandos-street, Cavendish square, W
Friday, July 9th —8 30 P M , Fifth Annual General Meeting

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street, London, W
Monday July 5th, to Saturday, July 10th —Special demonstration in clinical surgery by Mr Cairns Forsyth at the Royal Waterloo Hospital on Monday at 2 30 P.M. Special demonstration in clinical ophthalmology by Mr MacCallan on Thursday at 3 P M at the Royal Eye Hospital These demonstrations are open to all members of the medical profession, without fee — Hospital for Diseases of the Skin, Blackfriars S E Afternoon course in Dermatology consisting of instruction in the Out Patient Department Tuesday, selected cases by Mr Haldin-Davis

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N
Monday July 5th —10 A.M., Surgical Out-patients Mr W E. Tanner 10 30 A.M., Gynæcological Operations Mr A. E Giles Throat, Nose and Ear Operations Mr W Ibbotson 2 P.M., Medical, Surgical, and Gynæcological Clinics Operations 6 30 P M., Venereal Department Mr R Coyte
Tuesday —2 P M , Medical Surgical, Throat Nose and Ear Clinics, Operations 3 P M , Dr J K C Laing Demonstration of cases illustrating Types of Mental Disease at the Colney Hatch Mental Hospital, New Southgate, N
Wednesday —10 30 A M Surgical Operations Mr E. Gillespie 2 P.M , Medical, Eye, and Skin Clinics Operations 3 P.M Mr T H C Benians Pathological Demonstration of Tumours of the Breast 5 30 P M , Venereal Department
Thursday —10 30 A.M , Dental Out-patients Mr E S Pierrepont 2 P M Medical, Surgical, and Throat, Nose and Ear Clinics, Operations 5 P.M., Operations
Friday —10 30 A.M. Eye Operations Mr N Fleming 2 P M , Surgical Medical and Children Clinics Operations 3 P M., Gynæcological Clinic. 6 30 P.M Venereal Department Dr F L Provis

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL. Gray's Inn road, W C
Friday, July 9th.—3 P M. Mr Watkyn-Thomas Indications for the Radical Mastoid Operation.

CANCER HOSPITAL, Fulham road, S W
Friday, July 9th —4 30 P M., Sir Thomas Horder · The Cachexia of Malignant Disease and its Treatment

LONDON SCHOOL OF DERMATOLOGY, 49, Leicester square, W C
Tuesday, July 6th.—5 P.M., Dr Haldin-Davis Drug Eruptions
Thursday —5 P.M., Dr J T. Ingram Pathological Demonstration.

Appointments.

Benson, Elizabeth E., M B , Ch B Brist , has been appointed Medical Officer to the Gloucester Board of Guardians

Comber Violet, M.B Lond Resident Medical Officer at Willesden Municipal Hospital

Dowling, Eileen M.B Ch B Liverp , in charge of the Maternity and Child Welfare work at West Ham

Hearn, L W M.B , B S Durh., Resident Medical Officer Hull Sanatorium

Lewis, Graham, M S Lond F R C S Eng , a Consulting Gynæcologist to the Birmingham General Dispensary and also Honorary Consulting Gynæcologist to the West Bromwich and District Hospital

Tranmere Infirmary Johnson W M.D Liverp Visiting Physician Hatton J and Roberts, J T C , Junior Resident Assistant Medical Officers

Certifying Surgeons under the Factory and Workshop Acts Hall, J S , M B Ch B Glasg (Rothesay), Ligertwood, C E. M B , Ch B Manch (Wiveliscombe)

Vacancies.

For further information refer to the advertisement columns

Bedford County Hospital —Asst H S £130
Birmingham University —Walter Myers Travelling Studentship £300
Brighton Royal Sussex County Hospital —H S £150
Bristol City and County of —Asst Tuberculosis O £600
Bristol Royal Infirmary —Surg Reg
Cape of Good Hope —M O H £1100
Colchester Essex County Hospital —Asst H S and Reg £150
Durham County Council —Asst Welfare M O £600
Halifax Royal Infirmary —First H S At rate of £250
Hastings Union, &c —R.M O At rate of £650
Hospital for Consumption and Diseases of the Chest, Brompton, S W —Res M.O £600 Also H P £50 for six months
Ipswich County Borough —Asst M O H , &c £600
London Hospital E —Gynæcological Surg
London Lock Hospital, 283, Harrow road, W —Second H S £150
Manchester, Ancoats Hospital —R M.O Also H P At rate of £150 and £100 respectively.
Manchester University —Lecturer in Experimental Physiology
Metropolitan Asylums Board, Infectious Hospitals Service —Med Supt £900
Mildmay Mission Hospital, Austin-street, Bethnal Green, E — Hon Emergency S
Mount Vernon Hospital, Northwood, Middlesex.—Res M O At rate of £300
Rochester, St Bartholomew's Hospital —Hon Pathologist
Rotherham Hospital —Jun H S £150
Scarborough Hospital and Dispensary —Two H S 's At rate of £126
Stockport Infirmary —Res H P £175
Talgarth, Breconshire, South Wales Sanatorium —Asst Res M.O. £200
Ventnor, Isle of Wight Royal National Hospital for Consumption, &c —Jun Res M O At rate of £300
Victoria Hospital for Children Tite-street, Chelsea, S W —H P and H S Each at rate of £100
Walthamstow Wanstead, and Leyton Children's General Hospital —Res H S £100
West London Hospital, Hammersmith-road, W.—Res Asst. S £200
Willesden General Hospital, Harlesden-road, N W —Cas O

Births, Marriages, and Deaths.

BIRTHS

Anderson —On June 21st, at " Seacroft " Gorleston, the wife of Dr A. S K Anderson, D S O M C , of twin sons

Garratt —On June 26th, at Myrtle House, Dunstable-road. Luton, Beds, the wife of Frank Garratt, M.R.C S , L R.C P , of a son.

Stanley —On June 22nd, at rue des Belles Feuilles, Paris the wife of E Gerald Stanley, M.D , M.S , F R.C S , of a daughter

Wilson —On June 22nd, at Birmingham, Gwen, the wife of R K. Wilson, F R.C S Edin , of a son.

MARRIAGES

Buckley—King —On June 23rd, at St Andrew's Church, Ashley-place Captain Charles Dudley Maybury Buckley M C , R.A.M C , and Shelagh Patricia, daughter of the late James Claude King and Mrs Claude King, and niece of Colonel C W Mainprise, D S O , A.M.S.

Cutler—Hussey-Walsh.— On June 24th, at St Mary's, Cadogan gardens, Lennard Cutler, M.R.C S , L.R C P , to Maud Marie, only daughter of the late Colonel William Hussey-Walsh, Royal Welch Fusiliers, and Mrs Hussey-Walsh, Ennismore gardens, S W

Lupton—Tuckey —On June 22nd, in Ripon Cathedral Charles Athelstane Lupton, M.C F R C S , to Esther Isabel only daughter of Canon and Mrs Tuckey, of Littlethorpe Manor, Ripon.

Murray Bligh—Underwood —On June 24th, at St Francis Xavier's Church Liverpool John Murray Bligh M.D , M.R C P , of 74, Rodney-street, Liverpool, to Emily Elizabeth Underwood

Panton—Heath —On June 24th, at St Mary's Church Ashton-on-Mersey, by the Rev R. Main assisted by the Rev D E. Sturt, John Allison Panton M.D , Ch.M., F R.C S Eng and Edin , only son of the late Dr J E. Panton and Mrs W A. Bridson, of Bolton, to Kathleen Amy, only daughter of Mr and Mrs Robert Heath, of Vernon Lodge, Brooklands, Cheshire

DEATHS.

Cameron —On June 20th, suddenly, at ' Dawnie " Ariadne-road Worthing, Allan Gordon Russell Cameron, M.B , D.P H

Clarke.—On June 22nd, in Paris Robert Henry Clarke, M.B , M R.C S , of Duppas Hill-road Croydon, aged 73

Crouch —On June 25th at Harley-place Clifton, Bristol, Charles Percival Crouch, F R C S aged 65

Crowther John Woodwood, M.R C S L S A. late Hon. Consulting Surgeon to West Bromwich and District Hospital, on June 11th, at his residence, Marloes Russell - road, Lee on Solent

Inkster.—On June 23rd, at Bourton Hall Totnes and formerly of Broomhill Lodge Sheffield, Samuel Macaulay Inkster M D C M Edin aged 77

Lane.—On June 21st at Carlton-avenue Kenton Harrow, Frederick Herbert Lane, M R.C S , late of Brixton Hill S W and Burford, Oxon

Maclay — At Bamburgh suddenly on June 26th Neil Maclay M B , C M of 2 Fenham terrace Newcastle-on Tyne aged 53 years, dearly beloved husband of Mary Maclay

Pisani —On June 22nd in London Lieut -Colonel Lionel John Pisani, F I C S , I M.S , retd aged 64

N B —A fee of 7s 6d is charged for the insertion of Notices of Births Marriages, and Deaths

The Secretary of State for the Colonies has appointed Dr A T Stanton to be his chief medical adviser, taking up his duties in August next Since 1921 Dr Stanton has held the post of Director of Government Laboratories in the Federated Malay States

Rates on Hospitals —The recent revaluation of property at Newcastle-upon-Tyne has resulted in heavy increases in the assessments of the hospitals The old assessment of the Royal Infirmary was between £120 and £130, it has now been increased about twenty-fold The assessment of the Eye Infirmary has been increased from £17 to £200

Venerable Order of the Hospital of St John of Jerusalem —The King has sanctioned the following promotions in and appointments to the Venerable Order of the Hospital of St John of Jerusalem *As Knights of Grace* Captain Charles Arthur Coventon, R A M C (T A), Dr Henry Howorth Bashford, and Lieut -Colonel John Calderwood Strathearn *As Esquires* Dr Meredith Young, Dr William Richard Bates, Major Rupert Briercliffe, Major James Abbey Henderson R A M C (T F), Dr Robert Ashleigh Glegg Colonel James John Pratt, and Major James Smith Mather, R A M C (T)

St Thomas's Cornwall Babies' Hostel —This dietetic hostel, situated in the midst of the St Thomas's Hospital maternity district, has been open in its present form only 18 months, but the annual report shows that it is doing excellent work In addition to saving the lives of babies suffering from gastro-intestinal disturbance, teaching mothers the proper care of their infants, and testing breast-feeding the hostel is of value as a training centre The medical officer, Dr K J Hamilton points out that the comparatively small number of babies enables the student to study each case in detail

The late Dr R J Colenso —Dr Robert John Colenso, who died on June 2nd was a noted figure amongst the practitioners of South Kensington, where he had worked for 35 years Born in Norfolk in 1850, he was the son of the Rt Rev J W Colenso, formerly Bishop of Natal, and was educated in Kensington and at Oxford University After medical study at St Bartholomew's Hospital he became M R C S in 1878 and proceeded to the M D degree at Oxford in 1899 For a time he served as resident medical officer of the Windsor Royal Infirmary, but on being gazetted surgeon to the Natal Royal Rifles, went out to South Africa where he engaged in practice and became proficient in the Zulu language On his return to England he showed great interest in anatomy and published a number of valuable papers on the subject He also contributed to medical journals and wrote natural history sketches on South African animals, which showed his love of sport and the open air He was a skilful angler and a good shot, and keenly advocated the outdoor life which had made him robust and alert His presence and help will be missed by many

London (R F H) School of Medicine for Women —The presentation of prizes and certificates was made by Sir John Ferguson at the London School of Medicine for Women on June 25th, when Lady Barrett presided over a meeting of supporters, including Lord Riddell, president of the hospital, Dr Scharlieb, Mr J A Gardner, Miss Angus, and Mr Willmott Evans In opening the proceedings, Lady Barrett referred to the great loss which the school had sustained by the death of its late dean, Dame Louisa Aldrich-Blake The working year had been a most successful one and of the 25 distinctions granted to hospital schools by the University of London eight have been won by the London School of Medicine for Women It was said that the Battle of Waterloo was won on the playing fields of Eton, but Lady Barrett was quite sure that the battle of health with disease was also won on playing fields and she congratulated the school on having acquired a sports grounds of 6½ acres This was in process of development and towards the cost the Council had given £3000, while the students and their friends had contributed more than £2000, but £1100 was still required Other features of the year, she added were the progress of the children's ward, the opening up of a light treatment department, and the extension of the maternity department, due in great measure to the munificence of Lord Riddell The principal prize-winners were The Dean's Medal for Skill in Clinical Medicine K M Bowman-Manifold Gant Medal in Surgery and the Richardson-Kuhlmann Prize in Senior Subjects E Clarke Richardson-Kuhlmann Prize in Obstetrics E Clarke and F D Fox (divided) Dorothy Chick Gift M Low Directors' Medal in Gynæcology, presented by Prof A L McIlroy J Hoare

Guy's Hospital —On Thursday July 8th at 3 P M, Mr F D Acland, chairman of the Dental Board of the United Kingdom, will open the extension of the Dental School

Chelsea Hospital for Women —The convalescent home at St Leonards belonging to this hospital is about to be reopened after extensive alteration and improvements Much sanitary work was needed, and among other additions four more beds have been provided and the domestic accommodation considerably enlarged

Society of Medical Officers of Health —The annual meeting of the Maternity and Child Welfare Group will be held at Caxton Hall, Westminster, on Tuesday, July 6th, at 5 30 P M, when Mr George Waugh will open a discussion on Tonsils and Adenoids Amongst other speakers will be Dr R C Clarke and Dr Harold Waller, and the meeting will be open to members of the medical profession After the meeting, at 7 30 P M, there will be a dinner at the Florence Restaurant, Rupert-street, W Particulars may be had from the hon secretary, Dr M Emslie, 1, Upper Montague-street, London, W C 1

Wigan Infirmary —The board of management in its annual report states that last year, despite the industrial depression, the miners and the workers in the various industries in the Wigan mining area by means of their scheme of systematic weekly hospital contributions raised £16,541 towards the maintenance of the infirmary, a decrease of only £791 in the previous year's record The deficit was partly compensated for by the bequest of £10,000 by the late Miss Ann Dawber, of Wigan and Parbold, the interest on which will help to make up for the diminished weekly contributions

The late Dr A G R Cameron —Dr Allan Gordon Russell Cameron, who died at Worthing on June 19th at the age of 58, was the son of Mr D C Cameron, of Wakenaam, British Guiana He studied at University College and at St Mary's Hospital, London, and qualified in 1891, graduating in medicine at Durham a year later After holding an appointment in Wales he was for a time medical officer to the Metropolitan Asylums Board, after which he went to India, where he received the thanks of the Government for his work in connexion with plague In 1905 Dr Cameron was appointed county medical officer to the West Sussex County Council and settled in Worthing He was an energetic worker and did a great deal for his large area In 1913 he went to Durham as deputy medical officer for the county, and there remained for ten years For the last few years he had been living at Worthing

Institute of Hygiene —A reception was held by Sir Thomas Carey Evans at the Institute on June 29th to meet Dr Charles James Hastings, medical officer of health for Toronto Dr Hastings, who is past-president of both the American and Canadian Public Health Associations, gave an address in which he said that the first duty of a statesman is the care of the public health This must begin, he said, where eugenics leaves off—namely, with the germ plasm—and it must not be forgotten that the infant is nine months old when it is born After antenatal care the next link in the chain is the care of the new-born child, then of the pre-school child, then there must be medical examination of every child on entering school, medical, dental, and nursing care of every child at school, and a further examination of every child on leaving school It was regrettable that so many health departments had so long neglected those engaged in industry Dr Hastings went on to describe the reforms which had been made in Toronto and discussed infected milk as a danger to children and others Municipalities which do not efficiently safeguard water- and milk-supplies are, he considers, guilty of criminal negligence

The late Dr S G Mostyn —We regret to learn that Dr Sydney Gwenffrwd Mostyn was killed in a motoring accident on June 21st whilst on holiday in Scotland He was 59 years of age and had been medical officer of health for Darlington since 1911 He received his medical education at St Bartholomew's Hospital and from the time of his qualification in 1902 devoted himself to public health work As assistant in the County Health Department of the West Riding he gained wide practical experience and for a time he was responsible for the Public Health Laboratory He became familiar with hospital administration whilst resident medical officer of the Newcastle Infectious Diseases Hospital, and on appointment as medical officer of health for South Shields brought to his work a sound knowledge of his profession, which bore fruit both there and in Darlington Dr Mostyn was a graduate in arts and medicine of the University of Oxford He leaves a widow

A Lecture
ON
NON-TUBERCULOUS INFECTIONS OF THE KIDNEY.

Delivered at St Bartholomew's Hospital on June 2nd and June 4th

By HUGH CABOT, C.M.G., M.D., LL.D.,
PROFESSOR OF SURGERY, UNIVERSITY OF MICHIGAN.

PART I

CORTICAL INFECTION.

I WANT to essay the difficult task of unravelling the complicated classification of non-tuberculous infections of the kidney. I am excluding tuberculosis because it behaves differently, and may be regarded as a separate type of infection.

In considering this non-tuberculous group it is wise to exclude the adventitious causes of infection, and start with the proposition that the kidney was normal up to the time that the accident occurred. This makes it unnecessary to consider infections which depend on extraneous causes, such as stone in the kidney or obstruction of the ureter or in the lower urinary tract.

Dealing with a group in which the kidney is deemed to have been normal before it became infected, we can divide the infections into two distinct types, recognising that they overlap and that mixtures may occur. Until recent times it has been the custom to group cases according to the infecting organism but the more I see of them the more doubtful I am that that is a sound classification. We can group them instead according to the pathological findings, and point out that certain types of infecting organisms are most likely to produce particular lesions; on this plan they may be divided into cases which have a cortical lesion and those in which the pelvis of the kidney is chiefly affected. To-day I shall devote my main attention to the cortical type—those infections caused by pus-producing organisms the staphylococci and streptococci. Most commonly *Staphylococcus aureus* is responsible; less commonly *Staphylococcus albus* and *Staphylococcus citreus* more rarely still.

Incidence is less important in this group than in the subsequent group, and there is no very important distinction between the sexes in regard to the frequency of this infection. My experience has led me to believe that it is relatively uncommon in childhood, though why this is so I am not clear. It is ordinarily seen in adult life rarely in late adult life.

There is wide agreement that in this type the infection is practically always blood-borne. It is a hæmatogenous infection which has been regarded—erroneously, I think—as the only common type of hæmatogenous infection. It is commonly associated with lesions on the surface of the body, usually of the carbuncle form; but also more frequently than we suspect with sore-throat—staphylococcic rather than streptococcic. It may also be associated with acute osteomyelitis. This is a rarer but not perhaps so uncommon as we imagine; the lesion is not severe, and it may be masked by other symptoms. It is generally possible to demonstrate some lesion to which the kidney trouble is secondary. The superficial lesion may have nearly or even completely, healed before the kidney process has so developed as to be evident. Hence the need for going carefully into the history.

PATHOLOGICAL FINDINGS

The characteristic lesion here is the subcortical abscess which sometimes pushes up the capsule of the kidney so as to make itself quite evident. In the milder cases it is probable that there are only a few of these lesions. I say "probable" because the lesions are very rarely seen either at operation or at post-mortem. The more developed of the cases show the cortex of the kidney studded with small yellowish dots, and on section these areas will be found extending down into the organ for a considerable distance, though chiefly confined to the cortical zone. In the most severe stage there is a massive breaking down of the kidney, a lesion which, 20 years ago, was described as carbuncle of the kidney, partly because in some ways it resembles carbuncle and partly because it was thought to be almost universally associated with a carbuncle of the skin. These infections may overwhelm the kidney, so that in 48 hours, or even less, there is practically complete necrosis. I remember two or three cases with this type of lesion in which, on the attempt being made to remove the kidney, the organ practically came away in the hand; it was wholly necrotic and there was complete thrombosis of the blood-supply. Lesions occur which are typically wedge-shaped and these have been regarded as embolic in origin, it being assumed that they are due to the plugging of a large terminal vessel with a septic embolus. I do not know that such an assumption is necessary because with a relatively localised lesion in the neighbourhood of the cortex the process will extend so as to produce, at a later date, thrombosis of main vessels secondary to the earlier lesion.

The clearly-cut types are generally fairly evident clinically, and it is therefore more important for us to consider the milder cases, in which the diagnosis may be in doubt owing to insufficient evidence. There may be only a relatively small number of abscesses in the kidney, but although most of them resolve naturally, they are the common precursor of true perinephritic abscess. I say "true" because I want to localise my field. In literature the conditions described as perinephritic abscess are generally subdivided into those in which the abscess is secondary to such conditions as stone or tuberculous pyonephrosis and a group which should not be called perinephritic as they are simply lumbar abscesses, often due to an infection of bone. This group is not the one to which I want to call your attention to-day, because these cases are properly regarded as secondary to some other lesion, the other lesion being the real one which should attract our attention and treatment.

The type of infection of most importance is that in which the onset is insidious which develops slowly and in which the diagnosis may be obscure for a long time. I believe these cases are directly traceable to infections of the kidney by pus-producing organisms, in which the lesion affects the kidney lightly and in which the kidney is able to look after itself. One or more of the lesions breaks through the true capsule and gets into the perinephric fat where it can develop without causing symptoms. If in such cases the patient is seen relatively early in the disease there can be found in otherwise normal urine staphylococci, (commonly *Staphylococcus aureus*), in numbers which transcend the possibility of simple contamination. These staphylococci are present only for a relatively short time.

SIGNS AND SYMPTOMS

Clinically we may divide this type of infection into acute subacute, and what I would call the chronic except that I prefer to call it the perinephritic type, which is so mild that if it causes any lesion at all it produces it in the perinephritic space. To the acute might be added a per-acute group, in which there is an overwhelming infection, coming on suddenly, and in which the clinical picture is often that of an abdominal infection. Practically all the cases of this that I have seen have been regarded as cases of acute abdominal emergency, and the idea has often been that there was an acute hæmorrhagic pancreatitis. The onset is sudden and the effect on the patient very severe; there is a rapid weak pulse, and a high temperature, and the condition borders on collapse. In some of the cases the lesion is confined to one kidney and its removal, even if the patient is in extremis, will result in a recovery which is prompt and complete. But it is an unusual condition; one might go for years without seeing it even in a large

Notes, Comments, and Abstracts.

THE HEALTH, PENSIONS, AND UNEMPLOYMENT ACTS.

DOCTORS AND DENTISTS AS EMPLOYERS

THE Widows', Orphans', and Old Age Contributory Pensions Act, 1925, which came into operation on Jan. 4th, 1926, applies to all persons who are subject to compulsory health insurance; combined health insurance and pension contributions are, therefore, payable for all such persons in the service of medical and dental practitioners. As there appears to be a certain amount of misapprehension about the liability of the practitioner as employer under the National Health Insurance, Contributory Pensions and Unemployment Insurance Acts the Ministry of Health has issued a statement explaining the position.

Health and Pensions Insurance

In general, insurance under the National Health Insurance and Contributory Pensions Acts is compulsory for every person who is employed under a contract of service, if the employment is remunerated at a rate not exceeding in value £250 a year, or where the employment is by way of manual labour, irrespective of the rate of remuneration. A person employed as an apprentice or pupil is similarly required to be insured if he receives wages or other money payment (whether in the form of the return of apprenticeship premium or otherwise) in respect of his services. Thus among insurable employees may be included nurses, dental mechanics and apprentices, secretaries, reception clerks, domestic servants, hall porters, and chauffeurs.

In arriving at the rate of remuneration of persons not manually employed, account should be taken of the value to the employee (e.g., a resident secretary or nurse) of any emoluments in kind such as board and lodging provided at the employer's expense. In the case of part-time employment the equivalent remuneration for normal full-time employment should be taken.

The question whether an employment is or is not by way of manual labour arises not infrequently in the case of dental mechanics and chauffeurs, where the rate of remuneration is in excess of £250 a year. A dental mechanic employed solely in a dental workroom in making artificial teeth, crowns, &c., is regarded as employed by way of manual labour. A dentist's assistant, however, who is engaged mainly in the ordinary duties of a qualified dentist (such as attendance on patients and dental surgery), or whose main duties consist of the supervision of other employees, is regarded as employed otherwise than by way of manual labour. In cases where an assistant may be engaged partly in the mechanical work of making artificial teeth, and partly in non-manual duties as mentioned above, regard must be paid to the main and substantial nature of his duties. In any case of doubt, whether employment is or is not by way of manual labour, it is desirable that reference should be made to the Ministry of Health for a ruling.

A chauffeur who is required to clean a car and to effect running repairs, in addition to driving, is normally regarded as employed by way of manual labour, and is, therefore, compulsorily insurable irrespective of the rate of his remuneration.

Unemployment Insurance

Except as stated below, contributions under the Unemployment Insurance Acts have to be paid in respect of any person whose employment falls within the scope of compulsory health and pensions insurance. As regards persons employed by members of the professions, there are three main classes in which liability to unemployment insurance does not coincide with liability to insurance under the Health Insurance and Pensions Acts—viz., employment as a female professional nurse for the sick, employment in domestic service, and employment in agriculture, including horticulture.

Female nurses have been excepted from unemployment insurance since July, 1922, but this exception does not extend to dispensers, secretaries, or persons employed by doctors or dentists merely to receive patients, make appointments, and answer telephone messages, even though such persons may have undergone training as professional nurses.

Employment in domestic service is excepted from liability to insurance only where the employed person is not employed in a trade or business carried on for the purposes of gain. It has been held by Mr. Justice Roche in the High Court that a doctor is carrying on a business for the purpose of gain within the meaning of the Act, and domestic servants employed in that business are, therefore, required to be insured. The judge decided that a chauffeur employed primarily to drive a doctor on his rounds, and a domestic servant employed by a doctor in a nursing home carried on by him in addition to his practice, were employed in the business of their respective employers. These decisions are held to cover in principle chauffeurs employed to drive or accompany doctors on their rounds; servants employed to attend upon the patients or staff in a nursing home; and servants employed at the surgeries of doctors or dentists to admit patients, make appointments, or do other work in connexion with the employer's professional requirements.

Servants employed in doctors' or dentists' private residences solely in connexion with their employer's personal needs, and servants whose duties in connexion with their employers' business are confined to cleaning the surgery and admitting occasional patients, are not regarded as employed in the business, and are not, therefore, required to be insured against unemployment.

Employment in agriculture which concerns gardeners, whether regular or jobbing, is totally excepted from unemployment insurance.

MEDICAL WOMEN'S FEDERATION

THE annual general meeting was held on June 17th, under the chairmanship of Miss Frances Ivens, the retiring President. It was agreed that the sum of £100 from the accumulated balance of the Federation be given to the Dame Louisa Aldrich-Blake Memorial Fund and be definitely earmarked as a contribution to the proposed Scholarship Fund. The business meetings of the Council took place at the London School of Medicine for Women. The first business was the election of the officers. Dr. Christine M. Murrell was elected President, Dr. Ellen B. Orr and Dr. Clara Stewart Vice-Presidents, and Dr. Jane Walker, J.P., honorary treasurer. These, together with Miss Frances Ivens, past-President, Lady Berry, honorary secretary, and Miss Mabel Ramsay elected from the Council, compose the Executive Committee for the coming year. Reports of the various standing committees and sub-committees of the Federation were received and discussed. The report of the Aviation Subcommittee evoked much interest. The subcommittee, which consisted of members representing medicine, surgery, physiology, neurology, and gynæcology, recorded the opinion that the various qualities which produce the "flying aptitude" are found in women as well as men. They specially considered the question of menstruation and pregnancy in relation to women's fitness for flying and for receiving aviation certificates. In this connexion they examined the results of recent research into the effect of menstruation on the various processes of the body, especially researches carried on at the London School of Medicine for Women under the direction of Prof. W. Cullis, which showed that there was no change during menstruation in basal metabolism, pulse-rate, or blood pressure, also that the cost to the organism of a certain amount of work, and the recovery rate from work, was the same both during menstruation and the inter-menstrual time. They arrived at the conclusion that normal menstruation was no bar to flying, and considered that the searching and repeated medical examinations already in force in regard to those holding certificates would be sufficient to prevent persons in an unfit condition from undertaking flights. It was reported to the meeting that the International Commission on Air Navigation at its meeting in Paris had agreed to the principle that women should be eligible for the Pilot's B Certificate, but had referred to their Medical Sub-Commission the question of modifications in the medical examination requirements necessary to make them applicable to women. The National Corresponding Secretary of the Medical Women's International Association reported that the medical women of Canada, and still more recently those of Mexico, had formed associations which had joined the International Association. A new standing committee on public health was formed to watch public health developments, including posts advertised. On the evening of June 18th a conversazione was held by the London Association of the Federation in the British Medical Association House. Sir James and Lady Berry each gave a short lecture to a large and appreciative audience.

ANTHRAX FROM SHAVING-BRUSHES

ONLY one case of anthrax from shaving-brushes has occurred since the beginning of this year, happily without fatal result. The Minister of Health stated, in answer to a question in the House of Commons by Mr. J. B. Couper, that all practicable steps have been taken to trace shaving-brushes which have been imported into this country from the same source, with a view to their being destroyed or withheld from sale. Steps have also been taken to deal with any future consignments of shaving-brushes from this source, and the matter has been referred to the Government of the country of origin in order that appropriate action may be taken.

cocci which would ordinarily be expected to produce cortical lesions may fail to do so and may pass through the kidney to produce lesions in the pelvis stroking the parenchyma of the kidney only very lightly, if affecting it at all

The Lesion.

Now, briefly, I want to discuss the lesion This undoubtedly involves the kidney, but in a transient way. Specimens are seldom available because even the acute forms of the infection are very rarely fatal and the only specimens are those from patients who die from other causes Microscopic sections of such kidneys show very few lesions of the parenchyma; there is only what the pathologist would describe as cloudy swelling The chief lesion is of the mucous membrane of the renal pelvis and the ureter and the bladder may be involved. The common result is great thickening and infiltration of the submucous connective tissue. This is a lesion which not rarely lasts for a quarter of a century, and produces stiffening of the renal pelvis Where the lesion is present over a long period, a high grade of destruction of the kidney may result, but the extraordinary thing is how long this disease can go on yet leave the patient with a functionally fair kidney

INCIDENCE AND ÆTIOLOGY

It is extraordinary to what an extent this disease in childhood, affects the female more than the male It is probably true that there are at least nine or ten cases in the female to one in the male It is a very uncommon lesion in the male child and an exceedingly common lesion in the female child In the adult, there is again a great disproportion between the male and the female, largely due to the tendency of the disease to occur during pregnancy If this group of cases were ignored the remainder would probably show very little difference in adult life But as regards sex on the whole allowing for the number of children and the number of women in whom the disease occurs during pregnancy, the disproportion between the male and female is about one to three.

As to the source of infection I am perfectly aware that I am on highly controversial ground and what I say must be taken as an opinion rather than a fact It has been said to be urogenous in origin, by which is meant the same thing as an ascending infection. It has been assumed that the disease begins with an infection of the bladder and ascends to the renal pelvis How does bladder infection arise? The advocates of the theory of ascending infection have alleged that the anatomical peculiarities of the female urethra are its source They would have us believe that bacteria proceed backwards along the urethra and infect the bladder. That view is not supported by the evidence You can introduce bacteria into the bladder you can even go further and produce trauma of the bladder, but infection will not occur And yet we were asked to believe that the infection is produced by the mere passage backward of these organisms to the bladder

There was a tendency some years ago to fall back upon the lymphatics as a source of transference of infection from the bladder to the kidney, overlooking the fact that there are no lymphatics which proceed directly from bladder to kidney. It seems to me that the advocates of the ascending theory ask us to grant them too much. They ask us to grant premises which are not certainly true and they do not put forward any method of explaining the gaps in the evidence

The only other theory which is supportable by evidence is that this infection reaches the kidney through the blood stream Now we know that the other type of infection the cortical type caused by the pus-producing cocci is always hæmatogenous in character. Why should we assume that one type of infection is produced via the blood stream and the other type in an entirely different fashion?

In the days when the hospitals used to be full of typhoid fever we commonly found the bacillus in the urine, and it was frequently possible to make the diagnosis in this way The typhoid bacillus and the colon bacillus are much alike, and it is not too much to assume that both these organisms reach the kidney through the circulation The source is the intestinal tract In ulcerative colitis one commonly sees the pyelitic type of infection of the kidneys and it is quite certain that the organisms enter the blood from the intestine under conditions below the level of what we can describe as a clinical entity and that they commonly circulate in the blood without producing symptoms recognisable by the patient.

INFECTIVE FOCI.

With us in America an attempt has been made to relate this type of infection of the kidney to distant foci As many of you realise this is the day of foci, and teeth and tonsils fall by the wayside in our attempt to eradicate them It is true that this type of infection of the kidney is relatively common in children in association with infection of the upper respiratory tract, but the organisms infecting the upper respiratory tract are never the organisms which infect the kidney It seems to me that while it is an attractive doctrine that foci in one part of the body should produce lesions in another, and while Rosenow has been successful in producing lesions in the kidney by the introduction into animals of organisms obtained from tooth-root foci, these are not the organisms with which we are here concerned They are cocci streptococci, and do not produce the type of lesion we are talking about unless we are prepared to take the view that the colon bacillus does not produce a pyelitis, and that pyelitis is produced by streptococci which are later dispossessed by colon bacilli. I find this a difficult theory to swallow, because the lesion produced by the streptococcus is an absolutely different lesion, and the assumption that the streptococcus produces the lesion and then goes off to other fields and gives over his charge to the colon bacillus seems rather fanciful.

I think we must come to the view that colon bacilli enter the circulation from lesions of the intestine which do not rise to the dignity of a clinical entity It may be that such an invasion of the blood by the colon bacillus is much more common than we have been in the habit of believing. I suspect that these organisms circulate in the blood very frequently and a bit of evidence which leads me to that suspicion is that in a series of little more than a hundred cases of early pregnancy we found the colon bacillus in the urine in over half the cases That suggests that at a time when pyelitis is notoriously common the organisms which would be capable of producing it are also not rarely found It seems reasonable to suppose that in many cases the organisms which enter the blood either die miserably or reach the kidney and are excreted without producing any lesions. Some very capable observers believe that no organisms are excreted by a normal kidney, but it is certain that organisms are found in the urine from kidneys in which we can demonstrate no lesion and it is arguable that there is no such thing as a perfectly normal kidney. If these organisms reach the kidney relatively frequently and pass through it without doing damage, why do they ever infect the kidney? This brings up the doctrine of lowered resistance, and I wish to put forward the proposition that the type of lowered resistance which leads to pyelitis is not different from the type of lowered resistance which leads quite certainly to infection of the lower urinary tract

The typical colon-bacillus cystitis may be produced with regularity in man and animals by obstruction of the bladder followed by sudden emptying Thus occurs a prepared soil: there is lowered resistance and a condition of the bladder wall peculiarly suited to infection by this particular organism. There is an immense amount of experimental work on that subject all tending to confirm this view. It does not seem to me unreasonable to assume that a process which will produce infection in the lower urinary and varied practice The lesion I classify as subacute is, perhaps, the one more commonly classified as acute and is the most commonly seen It will occur, not rarely, in the course of a peripheral infection by staphylococcus, with symptoms of pain and tenderness, referred—generally accurately—to the region of the kidney, and with fever, sometimes maintained or sometimes intermittent. The outstanding clinical findings are an enlargement of the kidney, generally perfectly evident and therefore probably considerable, which is also tender The sign which should lead to a correct diagnosis is that, with every evidence of infection of the kidney, the urine is still normal so far as its appearance is concerned, and rarely shows any abnormality except very small quantities of albumin, an occasional red blood cell, and in the early stage, many staphylococci. These are best obtained by centrifuge and smear rather than by culture though both methods should be employed, because I suspect that many organisms which one can demonstrate in smear have been so damaged that they do not grow satisfactorily

The remaining group of cases is one to which I want especially to call attention because we all seem to have been overlooking them Since we began to recognise them a few years ago, the number of instances I have seen has increased rapidly. Many of these patients have acute infections of the upper respiratory tract, sometimes we see them after ear complications, but most frequently after nasopharyngeal and tonsillar lesions The patient, in a week or ten days, perhaps when becoming convalescent, will complain of a little pain in the back, and may complain that the window was open too much last night, attributing the pain to that

On bimanual palpation of the flank definite tenderness is found, almost always confined to one side, and this will generally increase for three or four days There will be moderate fever and the urine will contain cocci, but (in our experience of 30 cases) nothing else, not even traces of albumin At the end of four or six days it is clear that the tenderness is diminishing, and at the end of ten days it has disappeared In such cases I think there is sufficient evidence to make a diagnosis of this mild type of infection of the kidney, particularly when it is possible to find organisms in the urine The greatest interest attaches to the cases in which the temperature, having come down to normal or nearly so, begins to rise again It is at this point that we may detect early perinephritic abscess, and I am satisfied that, with the kind of observation we are now capable of giving, we should be able to reach the perinephritic abscess considerably earlier than has been done in the past

TREATMENT

The group of cases which will give most trouble, not in diagnosis, but in your view as to treatment, is the group variously classified as acute or subacute The onset is sudden, there is considerable enlargement of the kidney, there is a notable amount of fever, sometimes maintained, and sometimes otherwise, and the other kidney appears to be sound Not many years ago we were confidently advised and most of us believed, that at the point at which the diagnosis could be made of enlargement of the kidney it was our duty to cut down upon the kidney and abolish it —not a difficult operation at that stage My confidence in the procedure was considerably shaken when I noted that after abolishing the kidney on evidence—satisfactory to me—that the other kidney was sound, I later had to contribute the fellow kidney to the collection of my colleague the pathologist I suspect that these lesions are more frequently bilateral than we have been believing, that in the earlier stage the removal of the kidney which is obviously diseased throws an extra strain on the kidney which is not obviously diseased but is still the site of cortical abscess of which we have, and can have, no evidence A considerable amount of cortical abscess may exist in the kidney, and we can get no evidence of it if it is below the level of enlargement and tenderness To say, therefore, that a kidney shows no evidence of a lesion is not to say that it is sound I think that if treatment is delayed until it is clear that, unless something is done, the resistance of the patient will be insufficient to result in survival, it is more likely that the other kidney will have had an opportunity to deal with its relatively mild infection, and this delay, I think, gives better results

You may ask At what point do you decide to go ahead? This comes into the realm of what is known as surgical judgment The patient does not seem to be losing much ground, his general condition is watched to see whether there is increasing anæmia, and so on There comes a point when the patient's resistance is beginning to suffer, when the operation, though it is not a great one, must be done at once if it is to be done at all. Generally this point is reached later than most of us think, and I have been surprised how well these patients carry on, with all their symptoms for a month or six weeks At the end of that time, I think, we stand a better chance of success than if we go ahead at earlier stages

---

PART II

PYELONEPHRITIS

The type of kidney infection which I shall discuss to-day is the so-called pyelitic type, the condition commonly called pyelitis

It is probably true that, from the point of view of the pathologist, pure pyelitis is an unknown disease—that pyelitis is almost always pyelonephritis The infection of the kidney probably occurs at the early stages, and largely disappears, it is not a very important lesion and the chief force of the infection is expended on the renal pelvis In this type the infecting organism, in three out of four cases, is of the colon-typhoid group We see less of typhoid fever than formerly, so that the pyelitis of typhoid fever is becoming rather a curiosity, but the other organisms of the group behave in relation to the kidney in very similar fashion These organisms comprise a very large number of varieties Many of us have believed—I have believed—that typical pyelitis, so-called was habitually produced by bacilli of these groups It is now clear that this is not true, and that other organisms may cause pyelitis My opinion was much influenced by going over, last December some three hundred cases in which very careful bacteriological studies of the urine had been made Organisms of the colon bacillus group were responsible for the condition in 76 per cent of the cases, in the remainder various cocci were found, including *Staphylococcus aureus* The staphylococcus commonly causes a suppurative cortical lesion, but there are conditions of varied virulence in which it will behave as do the non-pus-producing organisms of the colon-typhoid group There are also various streptococci, indistinguishable by us from the streptococci causing suppurative cortical lesions, which will produce typical pyelitis

Perhaps the reason why the *Staphylococcus aureus* and its allies commonly produce suppurative cortical lesions is that they have been producing lesions elsewhere, at more or less the same time, of a suppurative type Let us imagine a streptococcus which has been producing not a suppurative lesion but a catarrhal lesion short of actual pus-production When it gets into the circulation I think it will behave as do the other organisms which commonly produce chronic catarrhs notably those of the colon bacillus group It is somewhat a question of virulence and possibly—I throw this out as a suggestion—a question of the company the coccus has been keeping, where it has been living, and what soil it has been cultivating in the recent past It is clear, I think, that organisms are modified by the tissues on which they are growing, and perhaps by the combinations of other organisms with which they are associated It is clear, also, that organisms which normally produce an acute abscess may not do so under unusual conditions That seems a reasonable explanation of the undoubted fact that (*b*) loss of tone (2) The time relations of the two halves of the diaphragm during the induction of paralysis (3) The response to stronger respiratory impulses and the influence of costal or thoracic movements—i e, of respiratory muscles other than the diaphragm (4) The course of events during recovery from compression

1 (*a*) *The amount of pressure necessary to block conduction of respiratory impulses in the phrenic nerve* This was found to vary with the duration of the pressure For example, a weight of 400 g applied to 4 mm of nerve paralysed the muscle supplied by it in 10 minutes; a weight of 80 g applied to the same length, in 1½ hours

An air pressure of 1100 mm Hg applied to 6 mm of nerve paralysed the muscle in 13 minutes, an air pressure of 100 mm Hg applied for 50 minutes produced a partial paralysis, the excursion of the muscle being reduced by 12 per cent

The results in general show that the pressure necessary to cause paralysis varies inversely with the duration of application The amount of pressure exerted by pathological conditions on the phrenic nerve during life is not known Since, however, the smaller pressures used in these experiments are comparable with the diastolic pressure in an artery, and were found effectual, though only acting during the short time allowed by experiment, we can assume that growths, glands, or fibrous tissue, acting over much longer periods, can easily exert sufficient force to block the passage of nerve impulses

Systematic measurements of the size of the nerves compressed were not made, but practical difficulties in obtaining complete conduction block in the nerves of large-size animals demonstrate that a relationship exists between bulk and compressibility. This was also found to hold good in some supplementary experiments with gastrocnemius-sciatic preparations from the frog and toad This relationship between bulk and compressibility has a clinical bearing in that it may explain why small nerves, the phrenic and recurrent laryngeal, show the effects of compression by glands, nodules, &c, more frequently than do the larger trunks of the brachial plexus

(*b*) *Loss of tone in the diaphragm following compression of the phrenic nerve* Sherrington[5] has suggested that the diaphragm is in a state of "postural contraction" or "reflex tonus" at the end of expiration, and it is in this sense that the term "tone" is used Tone, then, being the residual degree of contraction persisting in the muscle at the end of expiration, a diminution is indicated by a greater degree of elevation of the domes in the thorax, and a unilateral defect can only be estimated by comparing the expiratory level of the experimental side with that of the control side

When one phrenic is rapidly compressed in the neck the corresponding muscle loses tone and rises higher in the chest This is indicated on the kymograph by the raising of the level of the lever above the previous expiratory level, and can be confirmed by inspecting the abdominal surfaces of the domes Ken Kuré,[6] who took X ray photographs to demonstrate the position of the diaphragm, has stated that the diaphragm does not lose tone when one phrenic is cut, but with this I am unable to agree

When the nerve is blocked quickly—e g, in a few seconds—the loss of tone, as shown by the rapid elevation of the lever, is very striking, if the blocking process is spread over a period of three hours or more the loss of tone is not so readily demonstrable, but can still be shown by a comparison of the expiratory levels of the two levers, before and after compression Following quick compression the total amount of elevation is distinctly greater than after slow compression This suggests that a compensatory mechanism of some sort may come into play if paralysis is not produced too rapidly In the early stages of compression a diminution in contraction can be noted before any loss of tone

Certain physiological considerations introduce complications in clinical work It is recognised that the level or postural tone of the diaphragm varies under normal conditions, and that differences can occur between the two sides Further, the level is subject to extrinsic influences, such as gaseous distension of the stomach Temporary elevation can be differentiated by the fact that the movements of the two sides are synchronous Hence there is no hard-and-fast normal expiratory position, and an X-ray picture would show very little difference in the levels of the two sides in a case of unilateral paralysis if taken at a time when a low degree of tone obtained on the sound side

2 *The time relations of the two sides* When compression is carried out slowly, the contraction of the muscle on the experimental side is cut down smoothly and gradually, until a very small movement of the lever remains Before compression the movements of the two levers are synchronous, but as nerve conduction fails a progressive delay in the downstroke of the lever is seen, indicating delay in the commencement of inspiratory contraction The onset of delay varies in different animals, and may not be apparent until the contraction has been reduced by 50 per cent. This delay becomes more and more marked until, when paralysis is complete, the levers move inversely —i e, "paradoxical contraction" The extent of this latter movement appears to depend on the degree to which the costal part of the inspiratory apparatus is brought into play In old animals with small thoracic expansion the movement of the level on the experimental side may become so small that the time relations cannot be defined The paralysed muscle is practically immobile

If dyspnœa causes a large thoracic action the passive movement on the paralysed side may be as large as the active movement on the healthy side, though in an opposite direction Inspection of the abdominal surfaces of the diaphragm in such a condition shows a remarkable lop-sided action, the paralysed side ascending during inspiration as sharply as the healthy side descends

The levers attached to the muscle appear to move inversely before they actually do so, a fast tracing revealing only a very marked delay. In several experiments it was thought that complete block had been attained, because the movement on the experimental side was small and apparently inverse, and there was also appreciable loss of tone On section of the nerve, however, the movement became completely inverse to the sound side, and a further loss of tone occurred If, on the other hand, compression was maintained until the block was complete, section of the phrenic made no difference either to the time relations or to the elevation

Under the more difficult conditions of X ray examination the same thing may happen, and delayed action may suggest reversed movement, leading to a diagnosis of complete paralysis before the block is absolute.

3 *The response to stronger respiratory impulses and the influence of costal or thoracic movements* Under X ray examination, in certain cases of unilateral paralysis, if the patient be requested to take a deep breath an increased movement is observed on the paralysed side, the timing of which is difficult This could be explained as due to a contraction of the affected muscle in response to stronger respiratory impulses which had succeeded in forcing their way past the nerve-block On the other hand, it might be due to an exaggeration of the passive movement imparted to the diaphragm by the lungs and chest. since the main effect of a deep voluntary inspiration is an increased costal movement It has long been accepted that quiet, normal respiration is carried out mainly by the diaphragm, while "all difficult, sudden, and extraordinary breathing is costal" (J Hutchison[7])

The first possibility was tested by producing temporary hyperpnœa in the animal by means of CO_2 inhalation or faradic stimulation of an afferent nerve It was found that the resultant stronger impulses were no more effective in producing an active tract will also produce infection in the upper urinary tract. At least in some people who most commonly have this infection, some degree of obstruction of the upper urinary tract is common It should be remembered that in this disease the urine is a very satisfactory medium for bacterial growth, and it is only necessary to assume that there is in some portion of the upper urinary tract a place where stagnation of urine occurs Stagnation is much more likely to occur in the female than in the male Stagnation does occur during pregnancy, and there is accumulating evidence to show that there is abnormality of the right ureter during pregnancy in a considerable number of women. When work along that line can be carried out on a large scale, it may be shown that there is constantly some obstruction in one or both ureters during pregnancy

Here, then, is a possible method of explaining this type of infection It is notoriously true that dilatation of the renal pelvis is relatively common in the female It is further true that in the male the disease is more likely to occur in individuals of the long-bodied type, with the flat renal fossa—people in whom there is liability to visceroptosis

Clinical Types

Of the clinical types one may properly distinguish the acute, the subacute and the chronic pyelonephritis I use the word pyelonephritis, though recognising that the word pyelitis is in common use and has the dignity of long usage Amongst children and adults these acute cases are seen with fever, occasionally chills, malaise, and the loss of appetite and other symptoms which go with fever of any sort There is discomfort referred to the region of the kidney, rarely pain, moderate tenderness of the kidney, and pus in the urine This is one of the important points of distinction between this type of infection and the cortical type In the cortical type the lesion has no immediate relation with the excretory passages of the kidney, and consequently pus does not appear in the urine In the pyelitic type pus appears in the early stage and with it the characteristic organisms of the colon group, readily to be found in the fresh specimen, or in the stained specimen, where they will be seen to be large bacilli They cannot be classified by staining, but it is possible to be almost certain that the organisms belong to the group

In some of the acute cases the fever is very high and the patients look very ill Those with a blood-thirsty type of mind have difficulty in restraining their inclination to resort to surgery The kidney is often moderately tender and the patient is very ill, and it seems as if something ought to be done to rescue that kidney from destruction by infection As a matter of fact the disease is so rarely fatal that the possibility may be forgotten except during pregnancy The patients recover, but the disease can continue as a chronic pyelitis over a long period of years The more acute the attack, the more certain it is that complete recovery will occur It is in the milder cases—those in which there is no concern about the life of the patient—that there is more likelihood of the condition becoming chronic

Particularly in children, but not rarely in adults, the onset may be so mild that nobody knows when it started It is probably true that the majority of children who are brought to a physician with pyelitis can give no account, and their parents can give no account, of the onset of the disease It has been noticed that the child is a little less bright and active than usual, but nothing has been thought of it, and the disease is discovered only through an examination of the urine In fact, pyelitis was considered rare in children before routine examination of the urine became a common practice These cases may be described as chronic from the start, and the probability of their continuing is much greater than when the onset is acute It is this group of cases, particularly in children which gives the greatest concern, because they will go on in spite of most forms of treatment, and, so far as I know to-day, there is no form of treatment which will certainly influence the course of the disease It would be interesting to inquire whether the disease occurs in adult life, as pyelitis of pregnancy, more commonly in women who have had pyelitis in childhood than in other women As far as I know, no group of cases has been studied with sufficient accuracy to settle the point

In the cases in children which are chronic from the start, or which take on a chronic character, there is an increasing opinion that there is abnormality of the kidney This indicates very directly the need for investigating these kidneys, as it has not been possible to investigate them in the past I think we are required to-day to examine the kidneys of children with chronic pyelitis with the same care that we examine the kidneys of adults and to-day this is possible with the smaller instruments which are available In many cases definite abnormalities will be found, and at least in some of them, methods of treatment short of operation can be employed The point I want particularly to impress on you is that we should not be satisfied, when the diagnosis of chronic pyelitis in children has been made, with treatment by medicinal agents, hoping that there will be recovery either as a result of the medicine or by the mere lapse of time So many of these cases have already been shown to have definite abnormalities that we ought not to rely on the methods of a different day.

UNILATERAL PHRENIC PARALYSIS

CLINICAL APPLICATIONS OF AN EXPERIMENTAL STUDY

By GRACE BRISCOE, M B , B S Lond.

The clinical justification for this experimental study will be found in a paper by Charlton Briscoe[1] on the syndrome of signs and symptoms arising from unilateral phrenic paralysis In this he shows that the condition is really far from uncommon and indicates that in many cases whether primarily due to malignant growth enlarged glands, or inflammatory fibrous tissue, the essential cause of the paralysis is simple mechanical pressure on the nerve What one would expect to provide the most certain means of clinical diagnosis—namely, the behaviour of the diaphragm as observed with X rays—was found, however, to give such indecisive results in some cases that confusion exists in this respect Radiologists are far from being of one mind as to the typical screen picture produced by paralysis of one half of the diaphragm[2] [3]

It seemed desirable, therefore, to carry out an experimental investigation into the behaviour of the diaphragm following simple mechanical pressure applied to the phrenic nerve on one side

Experimental Methods

Only a brief outline of the experiments is given here Details are recorded in the *Journal of Physiology*[4]

The movements of the two halves of the diaphragm of the cat were recorded on a moving, smoked paper by means of levers connected by threads and small hooks to the abdominal surfaces of the domes (cupolæ) Inspiration caused a downward movement The movement of the intact thorax was simultaneously inscribed This method of recording the action of the diaphragm was chosen because the outline of the domes is the part observed *in X ray examination* While the movements of the diaphragm and chest, in response to natural respiratory impulses, were being inscribed on the kymograph, pressure was applied to one phrenic, after dissection in the neck, and the result of blocking conduction in the nerve was seen in the altered movements and level of the dome on the corresponding side

Particular attention was paid to the following points as they have some bearing on the clinical aspects of unilateral paralysis (1) The amount of pressure required to cause (*a*) loss of contraction,

ON SOME EFFECTS OF PRIMARY AND SECONDARY X RAYS UPON THE SKIN OF THE FROG TADPOLE *

BY HECTOR COLWELL, M B LOND , D P.H OXF ,
DIRECTOR OF THE RADIOLOGICAL DEPARTMENT, KING'S COLLEGE HOSPITAL ,

AND

M SYDNEY THOMSON, M D , M R C P LOND ,
PHYSICIAN TO THE SKIN DEPARTMENT, BELGRAVE HOSPITAL FOR CHILDREN

IN October, 1923, the present authors, in collaboration with Mr C P G Wakeley, F R C S , published a note on the effects of the prolonged action of X rays upon the skin of the frog tadpole [1] Consisting as it does of but two clearly differentiated layers of cells the epidermis affords an admirable medium for the observation of changes occurring as the sequel to irradiation, more especially when these are hypertrophic in character It is, moreover, a young and actively growing tissue, and therefore responds well to the action of the rays.

Under normal conditions the two epithelial layers are clearly differentiated from each other and from the subjacent corium The superficial layer of cells is somewhat flattened, the outlines of the cells of the deeper stratum are more or less polygonal, while the nuclei roughly correspond in shape to the outlines of the cells The cell outlines are remarkably well defined and, indeed, present many of the appearances of typical cell walls, even to distinct thickenings in the angles between contiguous cells (Fig 1)

The corium varies greatly in depth, but it is never so wide as to exceed the width of the epidermis Its structure is nowhere very obvious, since it stains as a more or less homogeneous pink mass, although a meshwork of white fibrous tissue and a network of elastic fibres can be more or less indistinctly seen A few oval or polygonal cells are also seen , these give off numerous finely branching processes and have large nuclei with well-defined nucleoli It is, however, the large pigment cells which constitute the most obvious feature of the corium Generally speaking, these are deep in position and lie close to the muscle bundles They vary considerably both in size and shape and usually have very distinct arborescent processes

Throughout our experiments we made use of an ordinary Coolidge tube and the induction coil employed in the routine therapeutic work of the hospital Variations in the conditions of working were made in different series of observations and will be duly noted as occasion requires The tadpoles were exposed to the rays in circular flat-bottomed dishes containing water or dilute mixtures of colloidal element and water

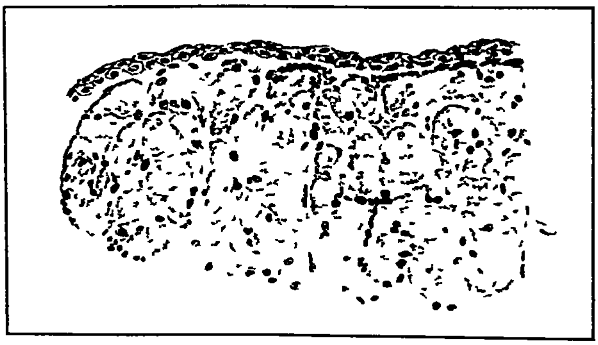
Group I.

Tadpoles irradiated in ordinary tap water Coolidge tube working at 2 milliamperes with a 7-in spark-gap Distance of anticathode from surface of water 6½ in Depth of liquid in glass dishes, 1½ in The tadpoles were divided into three batches and irradiated for 1½, 2, and 5 hours respectively Individuals were killed at different periods after exposure, fixed in 50 per cent alcohol, and after the usual preliminary processes, cut in paraffin in the ordinary way The stain employed was hæmatoxylin and eosin

Here the most obvious sequel to exposure was a hypertrophic change which, in specimens removed immediately after exposure, was only suggested by increased nuclear activity in the "1½-hour" specimens, but was clearly demonstrable in the "2-hour" specimens, while in the "5-hour" specimens, although hyperplastic areas could be differentiated, the main picture was one of degeneration

Specimens Killed 24 hours after Exposure —Here the "1½- and 2-hour" specimens showed progress in the hyperplastic process as shown by increased nuclear activity and cell proliferation, which caused a loss of demarcation between the superficial and deep epidermal layers The hyperplastic process was accompanied by a loss of cell outline, so that the appearance was that of a syncytium, which was associated with a quite definite invasion of the corium The "5-hour" specimens, although showing traces, or rather remains, of hypertrophic processes, presented generally the appearances of degeneration The syncytium formation, to which reference has just been made, is a characteristic feature of the hyperplasia occurring in tadpole epidermis as a sequel to irradiation, cell outlines being completely lost and a multinucleated mass of protoplasm resulting

FIG 1



Section across integument and underlying muscle of normal tadpole Note the epithelium consisting of two clearly differentiated layers of cells

Specimens Killed at Later Periods after Exposure—The hyperplastic changes in the "1½-hour" specimens would appear to reach their maximum in about 84 hours after exposure , after that the changes are retrogressive in character, so that specimens examined seven days after irradiation show complete epidermal atrophy In the "5-hour" specimens this atrophic condition was found 96 hours after exposure Thus the description of the '1½-hour" specimen examined seven days after irradiation is as follows ' There is complete atrophy of the epidermis, which is represented merely by a wavy line with a few small local thickenings The line consists of an evenly stained strip which has taken up the eosin and hæmatoxylin approximately equally and so presents the appearance of a narrow, evenly stained lilac ribbon "

Group II

Conditions as before, but a small quantity of *protargol solution* added to the water in which the tadpoles were exposed, so that the total concentration of protargol was about 0 04 per cent Distance of anticathode from surface of liquid, 6½ in Depth of liquid, 1½ in In this case the tadpoles were exposed not only to the primary beam of X rays directed upon them from the Coolidge tube, but also to the secondary radiations from the finely divided silver dispersed throughout the medium in which they were exposed. All were exposed for two hours

Specimens Examined Immediately after Exposure —All the cells were somewhat small and appeared a little shrunken. Signs of hyperplasia were, however, present both in the epithelium and in the connective tissue elements of the corium.

Specimens examined 48 hours after Exposure —These specimens exhibited hyperplasia of the epithelial cells to a much greater extent than had been seen in any examples

---

* The expenses of this research were defrayed by a grant from the Medical Research Council

[1] Colwell Thomson and Wakeley The Effects of X Rays upon the Skin of the Frog Tadpole, Jour Anat , lviii , Part 1, October, 1923

(*Continued from previous page*)

3 Wessler and Jaches Clinical Roentgenology, 1923, p 507
4 Grace Briscoe Jour Phys , 1926 lxi 353
5 Sherrington Brain 1915 xxxviii 213
6 Ken Kuré Zeitschrift f Exp Path u Therapie xvi , 395
7 J Hutchinson Todd Cyclop Anat and Phys., 1849, iv 1080
8 Kofferath Monat f Geburt u Gyn., lv , 34
9 Friedman and Chamberlain Jour Amer Med Assoc , lxxxvi 934
10 Woodburn Morison Loc cit

contraction on the affected side than were the weaker impulses of quiet respiration

The second possibility was confirmed by experiments in which the animals spontaneously took deep inspirations Before pressure these deep inspirations showed as slightly increased downward movements on both sides of the diaphragm, while the thoracic expansion was markedly increased During complete paralysis there was inverse movement of the two halves in quiet breathing On deep inspiration a greatly increased upward (therefore passive) movement occurred on the affected side, and a slightly increased downward movement on the sound side In the intermediate stage of partial paralysis the contractile power of the muscle was diminished, but not destroyed The experimental side still descended in quiet, normal inspiration, though its action was much delayed When hyperpnœa or a single deep inspiration occurred the paretic muscle was unable to resist the increased intrathoracic pull and was moved passively upwards

The experimental evidence, then, shows that any increased movement appearing on the paralysed side when a deeper breath is taken is not due to a nerve impulse which has forced its way past the pressure block, but is produced by mechanical factors

The possible expansion of the human thorax in its lower part is relatively less than that of the cat, and the changes seen under X ray examination are not likely to be so marked as these animal experiments suggest In these, as in patients, it was found that the older the subject the less was the costal movement, because of the greater rigidity of the thorax A mobile thorax clearly can produce greater and more sudden changes of intrathoracic pressure than one which is relatively fixed In addition the effect of the anæsthetic has to be considered as accentuating the depth of respiration in general

4 *Recovery* The recovery of contractile power occurs as smoothly and gradually as the diminution in movement is produced Recovery of contraction always precedes recovery of tone Although, on various occasions, the experimental side has been seen to move as well after compression as before, it has not been possible to prolong an observation for sufficient time to see if complete recovery of tone takes place

The recovery from birth palsy is interesting from this point of view Injury to a phrenic nerve at birth, causing unilateral paralysis, is occasionally seen as a result of pressure by forceps Reports of such cases giving fluoroscopic findings are rare Kofferath[8] has reported a case which showed the typical X ray picture of paradoxical movement and marked elevation on the right side At the age of 4 months the respiration had become completely normal, the diaphragm moved equally and synchronously on the two sides, but the right side was still somewhat above its normal level Friedman and Chamberlain[9] have also reported a case of right-sided palsy In their case respiratory disturbances were more marked and prolonged The paradoxical movements on the injured side were only slightly less than those on the healthy side At 3 months of age the respiration had become normal At 8½ months the fluoroscope showed that the two sides were moving synchronously, and with the same range of motion, but that the right side was still a trifle, about half an interspace, above the normal level

If compression is stopped directly the signs of paralysis have appeared, recovery of movement occurs very rapidly—i e , an improvement in contraction may be noted within a few seconds This confirms the notion that the mechanical compression is the essential cause of the paralysis If pressure is excessive, or maintained after paralysis is complete, recovery is delayed.

Summary of Experimental Conclusions

1 The functions of tone and contraction are separate factors, and are affected in different degrees by pressure on the phrenic nerve

2 Experimental pressures comparable to those occurring in the body can obstruct the respiratory impulses in the phrenic nerve

3 The amount of pressure required to produce paralysis varies inversely with duration of application

4 The longer the time taken in compression of the nerve the less obvious is the loss of tone, as indicated by elevation, suggesting the development of some compensating mechanism which has not been studied

5 Complete nerve-block is shown either by reversed movement or by immobility, the latter occurring when the thoracic expansion is small Elevation is present in varying degree

6 Incomplete nerve-block is shown by diminution of inspiratory descent, and by delayed action on the affected side This unilateral lagging becomes obvious in the later stages

Clinical Applications of Experimental Results

The appearances one would expect to find in an X ray examination of a clinical case of paralysis of one-half of the diaphragm are —

(*a*) An elevated position of the affected side due to loss of the tone or postural contraction which normally prevents complete relaxation

(*b*) " Paradoxical contraction " or " reversed movement "—i e , ascent of the affected side during inspiration, while the healthy side descends, because the paralysed muscle cannot resist the aspiration of the chest, and is moved passively

This typical appearance was seen in some of Charlton Briscoe's cases, and was found by Woodburn Morison[10] to be constant in " eventratio diaphragmatica," a congenital condition in which the muscular tissue on the affected side is underdeveloped The difficulty was to explain why in many undoubted instances of acquired paralysis reports were received, such as " slight movement," " scarcely any movement," and elevation was by no means constant There are several instances in the cases of acquired paralysis described by Morison where the elevation was only slight

It is now possible to state that—

1 Pressure does not abolish contractile power suddenly, but reduces it gradually Hence, if paralysis be partial, contraction will only be reduced in proportion, and every grade between slight diminution and complete inverse movement can occur

2 Reduction in extent of contraction is accompanied in the later stages by delay in action Hence, the time relationships between the two sides are altered, and in the absence of other pathological conditions unilateral lagging should suggest the possibility of pressure on the phrenic nerve

3 Diminution in " tone " does not run a parallel course with diminution in contractile power Hence, elevation in the thorax need not be proportional to loss of contractile movement

4 In cases of gradual onset the effects of loss of tone (elevation) may be modified by some compensatory mechanism This tends further to increase the disproportion between elevation and diminution of contractile movement

Considering all these points together, it seems clear that cases of complete unilateral paralysis occurring in young patients with free thoracic movement will provide a typical appearance of inverse movement and elevation In older patients, in whom the thorax is more fixed and the lungs less elastic, these appearances will be less marked Cases of partial paralysis, on the other hand, cannot be expected to present a precise diagnostic picture, but will yield apparently indefinite results This explains the varied reports received about many of Charlton Briscoe's patients, and leads to the final conclusion *that a majority of the cases met with in clinical work are instances of partial—not complete—paralysis*

References

1 Charlton Briscoe THE LANCET, 1925, i , 376
2 Woodburn Morison Archives of Radiology and Electrotherapy, May, August, September, 1923

(*Continued at foot of next page*)

bodies contained within the cells, these sometimes assume a digitate appearance, or they may resemble barbed arrow-heads The former is the more characteristic, and its mode of formation may be deduced from the appearances of several cells in the section from which Fig 3 was drawn In these cells the protoplasm immediately surrounding the nucleus is seen to contain a very finely divided pigmentary deposit, while the protoplasm itself has assumed a figure somewhat reminiscent of an aurora borealis There is a "dusty" area immediately surrounding the nucleus, and from this central body radiating "fingers" emerge Between this stage and the finished brown figure many intermediate forms can be detected It would thus seem that the curious shape is due to a "scaffolding" formed by the protoplasm, and is not formed by any characteristic crystallisation of the silver. That this deposit is silver and not melanin has been demonstrated in other sections by the ordinary photographic processes of bleaching out with potassium ferricyanide and sodium thiosulphate Slight "development" was obtained with hydroquinone, and "intensification" by treatment with mercuric chloride followed by ammonia This hyperplastic change far exceeds any seen in all the specimens we have examined

Lead (16 days), *Bismuth* (16 days) Main changes degenerative in character, with traces of hyperplasia The changes generally are less marked in the "bismuth" specimens

Tadpoles irradiated as before, but strength of mixture in which they were irradiated was 5 per cent instead of 10 per cent —As previously mentioned, the 10 per cent gold mixture was for some reason or other too toxic for the specimens to remain in it for more than a few minutes Some exposures were therefore made in 5 per cent mixtures

After 48 hours Markedly hypertrophic changes were found, especially in the epithelium covering the limbs and tail After 8 days Hyperplasia was marked in the limbs and tails and all distinction between the epithelial layers lost The superficial cells exhibited signs of keratinisation, while centrally syncytium formation was evident After 20 days The outstanding features were those of degeneration, but remains of hyperplasia and syncytium formation were still evident in the basal layer

The colloidal elements used in 5 per cent mixture were copper, selenium, gold, lead, and bismuth The temporary hypertrophic changes in the gold specimens have just been noticed Irradiation for 1½ hours in the presence of 5 per cent copper mixture led to destructive and degenerative changes, with only here and there suggestions of hyperplasia With selenium the results were much the same, but small hyperplastic areas were more definite With gold, as just seen, the hyperplastic changes were well marked for a time, but succeeded by degeneration With lead and bismuth degeneration and atrophy predominated, but some hyperplasia could also be made out

Conclusions

Throughout the series of experiments we have described the tadpoles were, of course, exposed to the general beam of mixed radiations from the Coolidge tube as well as to the secondary radiations from the admixed colloidal elements It has also been shown that the effect of exposure to the primary X rays from the tube (in the absence of any added colloid) is to produce a fairly marked temporary hypertrophy followed by degeneration Yet taking these factors into account it would appear that the secondary radiations from copper are mainly destructive in character as are also those of selenium though here the destructive changes are less apparent and the evidence of temporary hyperplasia are more marked

In contrast with these changes are the effects produced by irradiation in the presence of colloidal silver, where the hypertrophic changes are predominant and exceed in amount those produced by irradiation in the presence of any other colloid used while their persistence is also equally striking Irradiation in the presence of colloidal gold (5 per cent mixture) also produced marked hypertrophic changes, more especially on the limbs and tails of the embryos Next to those caused by irradiation in the presence of silver, these were the most marked hyperplastic changes we observed In the lead and bismuth series hyperplasia was less marked and disappeared sooner than in the silver or gold series

The results suggest that the extraordinary hypertrophic changes due to irradiation in the presence of colloidal silver are due to some special action of some of its characteristic radiations; and as these changes are still very well marked in the case of gold, that probably some series of wave-lengths are specially concerned in producing this hyperplasia

SYPHILIS OF THE HEART AND AORTA *

BY FREDERICK W PRICE, M D F R S EDIN,
CONSULTING PHYSICIAN, ROYAL NORTHERN HOSPITAL, PHYSICIAN,
NATIONAL HOSPITAL FOR DISEASES OF THE HEART

THE subject of syphilis of the heart and aorta is one of great importance, and also one of great difficulty, more especially with regard to the relative frequency, and diagnosis of the condition These are intimately bound up with ætiological and pathological considerations I shall confine my remarks to the acquired form of the disease, for the reason that the congenital form lies almost entirely outside my experience

Pathology and Relative Frequency

Acquired syphilis may attack the aorta, the cardiac valves, the coronary arteries the myocardium, the auriculo-ventricular junctional tissues, and the pericardium With regard to the aorta, Prof H M Turnbull[1] found that in 288 necropsies at the London Hospital, in which lesions of acquired syphilis were present the most common syphilitic lesion was mesaortitis This affection is the result of inflammation of the vasa-vasorum and their terminations in the external and middle coats of the aorta There is perivascular infiltration of lymphocytes and plasma cells, accompanied by periarteritis and endarteritis —indeed, in the great majority of cases all the coats are involved Ultimately the lumen of the vessels may become completely closed The adventitia and, later, the media of the areas of the aorta supplied by the inflamed vasa-vasorum are secondarily affected, and the inflammation is mainly confined to these coats The inflammation in the media is followed by absorption, and it may be necrosis, of the elastic tissue and muscle-fibres, and. at a later period, by new formation of fibrous tissue This leads to local weakening of the vessel, which may give rise to aneurysms, varying from a minute to large size The intima over the areas of inflammation is usually thickened The thickening of the intima is merely secondary, and is protective or compensatory It is due to the connective tissue laminæ being increased in size and number, often an ingrowth of new vessel formation from the media, and sometimes cellular infiltration from the other coats of the aorta In the early stages there is an absence of evidence of fatty and calcareous degeneration—a fact which may be due to the ingrowth of new vessels from the media The secondary thickening of the intima has been confused with atheroma Mott, Marchand Turnbull and others have described the distinctive features of syphilitic mesaortitis and atheroma It is necessary to point out and emphasise that this distinction is even yet not nearly sufficiently appreciated and is not even admitted by some Prof Turnbull has shown that the secondary thickenhitherto examined The epithelium generally showed an increase to about four or five cells in thickness, while in places this was sometimes exceeded The hyperactivity was fairly constant over the whole of the skin and was not limited to isolated patches Obliteration of cell outlines was frequent, thus giving rise to an exaggerated picture of the syncytium formation produced by simple irradiation in water without the addition of protargol Corresponding increase in activity was also shown by the connective tissue cells of the corium, which showed a marked tendency to branching, the pigment cells were small but markedly arborescent

---

* Being a contribution to a discussion at a meeting of the Medical Society for the Study of Venereal Diseases on Feb 26th, 1926

[1] Turnbull, H M The Quarterly Journal of Medicine, April, 1925, viii, No 31

From this it is clear that the secondary X rays from the finely divided silver had a very definite and marked effect in accelerating and accentuating those hyperplastic changes in the epithelium, which have been shown to occur as an early result of exposing tadpoles to the action of the mixed radiations from a Coolidge tube in ordinary water

It is, of course, well known that different elements when exposed to a suitable beam of X rays give off secondary radiations which are characteristic as regards their wave-length for the particular element used Moreover, these characteristic secondary X rays have definite relations to the atomic number (or the number representing the position of the element in the periodic series) and consequently to the atomic weight of the element in question We accordingly determined to carry out a series of experiments in which different elements in colloidal form[2] were added to the water wherein the tadpoles were exposed, and thereby to ascertain if the effects of the secondary radiations from other elements resembled or differed from those of the secondary radiations from silver The stock colloids in all cases were supplied in a concentration of 1 in 2000 and 10 per cent of this stock " collosol " was added to the water in which the tadpoles were exposed The atomic numbers and atomic weights of the elements thus used were as follows —

	Atomic number	Atomic weight
Copper	29	63 5
Selenium	34	79 2
Silver	47	108 0
Gold	79	197 2
Lead	82	207 0
Bismuth	83	209 0

Group III

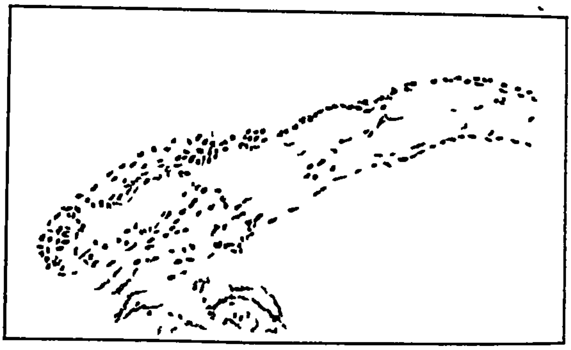
Tadpoles irradiated for 1½ hours in water to which 10 per cent of different collosols (1 in 2000) were added

In each case the anticathode of the Coolidge tube was 12 in from the surface of the liquid, while the depth of the liquid was in each case about ½ in The 10 per cent mixture of the gold collosol and water was found to be so toxic in its action that it could not be used, but a 5 per cent mixture was found to be practicable and reference to the results obtained will be made subsequently The specimens examined were as under —

Copper	Selenium	Silver	Lead	Bismuth
72 hours	72 hours	72 hours	—	—
—	96 "	—	96 hours	96 hours
17 days	17 days	17 days	16 days	16 days

Specimens Examined 72 hours after Exposure (copper, selenium, silver) —*Copper* These specimens showed only slight deviations from the normal Such changes as were found were in the direction of atrophy and there was no suggestion of hyperplasia Some vacuolation of cytoplasm and shrinkage of nuclei *Selenium* The epidermis showed degenerative changes, but not so marked as with the " copper " specimens, and in addition some few hyperplastic areas could also be detected The hyperplasia was most marked on the limbs Even in the hyperplastic areas degenerative changes had already made their appearance *Silver* The superficial epidermal layer showed no evidence of any degeneration, in the basal layer, however, were some distorted nuclear forms and vacuolated cytoplasm In some places the epithelium is increased to four or more layers in thickness The hyperplastic changes were most marked in regions where the cross section of the body was the smallest—e g, the tail or limbs—and here also the outermost layer of cells stained definitely pink and showed striation, as though some attempt at keratin formation were taking place (Fig 2)

FIG 2

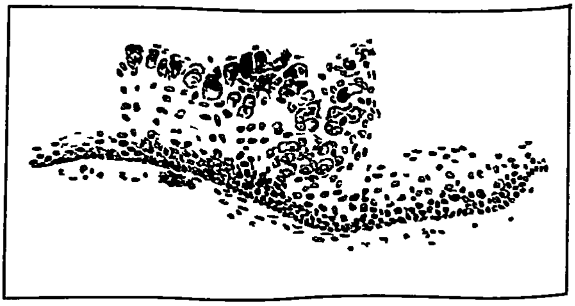


Section to show tadpole epithelium Specimen killed 72 hours after irradiation in 10 per cent mixture of " collosol " selenium. Note the hypertrophic patch to the left of the figure

Specimens Examined 96 hours after Exposure (selenium, lead, bismuth) —*Selenium* Extensive vacuolation of the epidermal cells was the predominant feature, while the small patches of hyperplasia also showed degenerative changes *Lead* The appearances in the epidermis were mainly of a degenerative character, sometimes degeneration had progressed so as to lessen the depth of the epidermis to about one-half of its normal *Bismuth* Degeneration was again the outstanding feature and no hyperplasia was seen

Specimens Examined 16 or 17 days after Exposure (copper, selenium, silver, lead, bismuth) —*Copper* (17 days) Occasional hyperplastic areas, but these are ill marked The general picture presented by the epithelium is one of degeneration, in some places this had progressed to such an extent that the cytoplasm of both epidermal layers had coalesced and stained as a homogeneous mass with occasional suggestions of degenerated nuclei *Selenium* (17 days) The general appearances much the same as in the " copper " specimens The evidence of hyperplastic change was, however rather more definite *Silver* (17 days) The most striking features are well illustrated in Fig 3 There are patches of such marked hyperplasia that they practically amount to excrescences In them all differentiation between the two epidermal layers is completely lost The cells are large, and cuboidal or oval, while the nuclei are large, stain well, and have remarkably distinct chromosomes and nucleoli

FIG 3



Section to show enormous epithelial hypertrophy Tadpole irradiated 1½ hours in 10 per cent mixture of " collosol " silver Note general epithelial hypertrophy and the definite wart like outgrowth

There are two outstanding features in the hyperplastic areas The first is the presence of elliptical cells with no obvious nucleus, and yet containing a rounded and more faintly staining body They are very suggestive of " Paget cells," and therefore of early malignancy, and thus in spite of the fact that there is no definite sign of downward growth and invasion of the corium The second feature is, however, perhaps the more striking There are many dark brown manubrium sterni and on either side of it, a systolic murmur over the aortic area; while the second sound may exhibit a musical, bell-like, or clanging quality With the X rays, the aorta may show diminished translucency and an increased diameter Alteration in the voice and tracheal tugging are occasionally to be noted

---

[2] The colloidal elements used in this research were the standard " collosols " for therapeutic use kindly supplied to us by the Crookes Laboratories, to whose chief chemist, Mr Ward, B Sc, we desire to express our best thanks

Later, the clinical picture of aortic incompetence, or of myocarditis, or saccular aneurysm may develop With regard to the first, shortness of breath on exertion is probably the most frequent symptom of all The largest group present symptoms of systemic anæmia, such as giddiness, syncope or fainting attacks, early fatigue on mental effort, sleeplessness, and headache What is often termed "cardiac asthma" is comparatively frequent Pain in the precordium is of fairly frequent occurrence. but is not so common as in aortitis Angina pectoris is relatively infrequent Indications of chronic venous congestion supervene in a comparatively small proportion of cases General œdema is only occasionally met with I would emphasise the great importance of an early and most careful search for the presence of a diastolic murmur over the base of the heart, over and on either side of the sternum, and at the apex—in fact, over the whole precordial area In the early stage the murmur is often faint, and may be audible only after emptying the chest after a deep inspiration, and may be heard on some occasions and not in others There is less tendency for the systolic blood pressure to rise, and, still more so, for physical signs of left ventricular hypertrophy to develop, than in the case of aortic incompetence due to other causes; I have observed some cases which proceeded to a fatal termination with an absence of evidence of left ventricular hypertrophy during the whole course of the illness Involvement of the myocardium may reveal itself on polygraphic and, more frequently, on electrocardiographic examination by the presence of the first or second grade of auriculo-ventricular block, and rarely by bundle-branch or intraventricular block, and, in one case of my experience, by transient attacks of auricular fibrillation If complete auriculo-ventricular block occurs, it usually does so in the later stages Subacute bacterial endocarditis may supervene Sudden death may occur, and may be due to complete and abrupt closure of the orifice, or trunk, or one of the main branches of a coronary artery, to rupture of the heart, fatal syncope, or angina pectoris

The foregoing description covers the great majority of cases It is necessary to add the following. Relative, and even complete, recovery—either the result of specific treatment or spontaneous—may occur at any period There may be exacerbations of the disease all through life Sometimes aortitis escapes notice altogether, and the clinical picture is that of aortic incompetence developing insidiously The clinical picture may be that of acute general cardiac failure, it may be proceeding to rapid dissolution Sometimes the condition is only discovered post-mortem In the early stages the Wassermann reaction is almost invariably positive, but as the disease becomes more chronic it is increasingly negative

The diagnosis is sometimes comparatively easy, but may be very difficult. In its consideration the following points, among others, require consideration The age the previous history, the history of the present illness, the subjective symptoms, the results of physical and instrumental examination, the Wassermann reaction the presence or otherwise of syphilitic stigmata, and the course of the disease With regard to the previous history, may I remind you that it is very easy to overlook a rheumatic infection in childhood There may also be a history of rheumatic and syphilitic, and even other, infection in the same patient There may be a combined lesion I would emphasise the importance of pain behind the upper part of the sternum, presenting the characteristic features described. If it has been possible to obtain a full and accurate history, it will be found that in the vast majority of cases it has been present in the early stages The pain differs from that of angina pectoris in that it is less paroxysmal, its localisation is higher, it has a far less tendency to radiate to a distance and it is more likely to come on spontaneously and not to cease completely after exertion is over The presence of a systolic murmur over the aortic area, an altered second sound in the manner described, and the result of an examination with the X rays are of considerable diagnostic importance It is necessary to exclude aortitis due to infection by pyogenic organisms of a subacute or chronic type, by the tubercle bacillus, and other organisms, aneurysm, and atheroma The last named, when limited to the aorta, however, rarely causes pain A cardiac lesion coming on in middle life, if antecedent rheumatic infection can undoubtedly be excluded, is strongly suggestive of syphilis, as also is angina pectoris occurring before the age of 40 A combination of aortic and mitral valvular disease, especially before 30 years of age, is strongly suggestive of being of rheumatic origin Atheroma much more frequently causes aortic stenosis than incompetence. A Wassermann test should be done in all doubtful heart cases, and in all cases of aortic disease—even if there is a history of acute rheumatism I need not remind you that a negative Wassermann is not so valuable as a positive reaction, that a single negative reaction does not exclude syphilis, and that in some cases it may be advisable to employ a provocative dose of salvarsan or one of the other organic arsenical preparations We should, on the other hand, be careful not to place too much reliance on the result of the Wassermann reaction; it should be considered in conjunction with other clinical data A positive Wassermann does not indicate that the malady from which the patient is suffering is necessarily syphilitic; the same applies to the coexistence of other specific stigmata There may also be a double lesion

Prognosis

This depends largely, perhaps very largely, upon early diagnosis, and the kind of treatment adopted. Taking cases as a whole. the prognosis is very unfavourable, due, no doubt, to the fact that a correct diagnosis is not often made until the later stages of the disease. I venture to hope that in future an early diagnosis will be arrived at with increasing frequency When untreated, the lesion is usually progressive. it may be rapidly so, and the mortality is high If, on the other hand, a diagnosis is made early. and treatment is prompt and adequate, especially when the patient has not received specific treatment previously there is a reasonable prospect of relative recovery, and occasionally recovery is even complete Naturally, the prognosis is much more favourable in the absence of aortic incompetence, involvement of the coronary arteries and of the myocardium, angina pectoris. and aneurysm Prompt and adequate treatment of aortitis may prevent the aortic valve, coronary arteries, and the myocardium becoming involved, and the formation of a saccular aneurysm Even in the absence of angina pectoris and aneurysm in aortic regurgitation the prognosis is usually very unfavourable, death often taking place within two or three years after the onset of subjective symptoms Two important points in all cases are the degree of cardiac failure present and its rate of advance Help is sometimes obtained from the results of polygraphic and still more frequently of electrocardiographic, examination Thus. the presence of alternation of the heart in the absence of a severe grade of tachycardia is an indication of extreme exhaustion of the heart muscle; the occurrence of partial heart-block is a sign of myocardial involvement; persistent heart-block of mild degree is also indicative of myocardial damage, bundle-branch block is usually of very unfavourable significance; and intraventricular block is usually of grave import A few cases of complete auriculo-ventricular block have been recorded in which energetic specific treatment appears to have been rewarded with ing of the intima in syphilitic mesaortitis may be distinguished from atheroma by the naked eye—by its greater latitude and prominence, its crenated outline, pearly colour, pitted surface, and rubber-like consistency The pitting and scarring are due to the replacement of the media by fibrous tissue Having pointed out these distinctive features, however, I may add that in the later stages atheroma usually occurs in the thickened intima over the areas of inflammation, this process being exactly similar to the secondary atheroma which occurs in the attack of acute endocarditis due to rheumatism , also that syphilitic mesaortitis and primary atheroma may coexist, especially in later life

The ascending part of the aorta is the most commonly affected The disease-process in the aorta may involve the aortic valve, and occasionally it extends to the base of the aortic cusp of the mitral valve The inflammation is similar to that of the aorta In the case of the aortic valve, it results in incompetence and occasionally in stenosis. Syphilitic mesaortitis may also give rise to occlusion of the orifice of one or both of the coronary arteries Syphilis may also affect the terminal branches of the coronary arteries In syphilis of the coronary arteries, the aorta is usually affected at the same time If, from any cause, the orifice, or the trunk, or one of the main branches of a coronary artery be completely and abruptly closed, sudden death, without the occurrence of structural changes, may occur , or infarction, and later, secondary fibrosis, may ensue, resulting in weakening of the cardiac wall In those cases in which, from any cause, closure of a coronary artery or one of its main branches is gradual, or is only partial, and in cases of narrowing or occlusion of the terminal branches, infarction does not take place , local anæmia results, and consequent atrophy of the muscle-cells and secondary fibrosis Gummatous deposits, with secondary fibrosis, also occur in the cardiac wall, but they are of comparatively rare occurrence It will thus be seen that in syphilis, fibrosis of the myocardium may be the result of coronary disease, or gummata Any of these lesions may involve the auriculo-ventricular junctional tissues and give rise to auriculo-ventricular heart-block Syphilis of the pericardium is of rare occurrence I myself have only seen a few doubtful cases I shall dismiss the subject in a few words The disease more commonly attacks in the form of an infiltration, with consequent formation of fibrous tissue, resulting in adhesions between the two layers of the pericardium, while in some cases there is effusion of fluid into the pericardial sac Gummata are of rare occurrence The affection is usually latent The diagnosis is sometimes possible from the discovery of the clinical features in a known syphilitic subject The prognosis depends mainly upon how early the diagnosis is made and treatment undertaken Small gummata, when treated early, respond to adequate therapeutic measures, but when fibrosis has occurred the condition is irremediable

The foregoing is a brief summary of the lesions which it is generally agreed syphilis may produce But this does not by any means exhaust this part of our subject I am well aware that we are now entering upon a field of great difficulty and even of controversy , for, among other things, the whole subject of the pathology and ætiology of arterial disease is involved But certain questions are of the greatest practical importance with regard to the relative frequency of syphilis as a cause of diseases of the heart and aorta, and differential diagnosis and treatment Thus, in addition to the fact that syphilitic aortitis may involve the aortic valve and the base of the aortic cusp of the mitral valve, is syphilis among the causes of primary chronic endocarditis of one or more of the cardiac valves ? There is no evidence that it is Again, apart from inducing secondary fibrosis in the manner described, may syphilis give rise to fibrosis of the myocardium independently—in other words, is it among the causes of primary chronic myocarditis—i e., a true inflammation ? There is no doubt that syphilis may give rise to a primary chronic inflammation elsewhere, and it would appear that congenital syphilis does so in the case of the myocardium Some authorities are of opinion that acquired syphilis may cause a patchy or a diffuse fine fibrosis independently of the coronary arteries, while others are not In any case, the histological diagnosis is very difficult even in the early stage, and is perhaps impossible in the later stage, so that it is probable that many of the cases of fibrosis of the myocardium in elderly people which are thought to be the result of syphilis are not so Or, again, and perhaps most important of all, is syphilis a cause of primary atheroma ? In my opinion it is not

Syphilis is the cause of a large proportion of all cases of aortic incompetence, and also an important ætiological factor of angina, especially under the age of 10 But I would submit that in considering the relative frequency of syphilis in affections of the heart and aorta, there is now a danger of going to the other extreme Thus, statements to the effect that syphilis is responsible for from a quarter to a third of the total number of cases of organic disease of the heart, for about three-quarters of all cases of aortic regurgitation, and almost invariably for cases of aortic incompetence in which there is an absence of a definite history of acute rheumatism should be accepted with the greatest reserve In considering the relative frequency of syphilis as a cause of diseases of the heart and aorta, we have to consider the questions of a history of syphilitic infection of a positive Wassermann reaction, and of other syphilitic stigmata during life and of the specific nature of, or the presence of the *Spironema pallidum* in, the lesions of the heart or aorta themselves, or the presence of other undoubtedly syphilitic lesions, or of a positive Wassermann, on post-mortem examination Of course, syphilis of the heart and aorta would be of very frequent occurrence if all the lesions found in the heart and aorta post mortem in those in whom there was a history of antecedent syphilitic infection or of a positive Wassermann, or even of other syphilitic stigmata, during life or even of a positive Wassermann after death, are to be regarded as syphilitic in origin It is, I hope, not necessary to point out that such lesions are not necessarily syphilitic Other evidence is required in order to be certain that a lesion is of specific origin Such are (1) the detection of the *Spironema pallidum* in the lesion itself, or (2) the specific histological character of the lesion

Symptoms and Diagnosis

In aortitis, pain is the most frequent and characteristic symptom, and it is exceedingly important to recognise it It is situated behind the upper part of the sternum, and is generally localised there, but it may radiate to the arms and neck It may vary from slight discomfort or a sensation of pressure to an intense pain It may be more or less constant or intermittent Occasionally there are paroxysms of pain, accompanied by a feeling of suffocation The pain may come on spontaneously—that is, apart from physical exertion—especially when lying down, or it may occur only on exertion , it is usually aggravated by exertion , it may not completely disappear on cessation of exertion There may be hyperæsthesia over the painful area Occasionally severe attacks of suffocation occur, and tachycardia may often be noted The pain may disappear after a few months or weeks—either spontaneously or as the result of treatment It may be followed by angina pectoris Some observers are of opinion that sometimes, during the early stage, rubbing sounds along the right border of the sternum may be noted, especially when the patient leans forward ; personally, I have never been able to detect this At a later stage there may be indications of fusiform dilatation of the aorta There may be pulsation in the neck, particularly in the suprasternal notch, and in the first and second intercostal spaces on either side of the sternum ; impairment of percussion over the by blood which had burst through from the underlying alveoli. There was no evidence of catarrh of the alveolar cells, nor was there any invasion of the alveoli with leucocytes. Sections from the left lung showed a patchy distribution of hæmorrhage in the alveoli, and in places these alveoli were partially aerated. The alveolar walls were for the most part compressed, indicating that the blood in the left lung may have been aspirated from the right lung. The left pleura was normal. Sections from the spleen showed marked congestion. The liver and kidneys were to a less degree congested.

Cultures.—Post-mortem cultures were taken from the lower lobe of the right lung and from the spleen. That from the lung grew streptococci, staphylococci, and *Bacillus coli*, while the spleen culture only grew *Staphylococcus aureus*.

In the case just described death was due to the condition of the lungs, and from the microscopical appearances the hæmorrhage must have originated from the pulmonary capillaries, but the underlying cause of the hæmorrhage is not at once obvious. Various explanations may be considered. In the first place, such a hæmorrhage might be asphyxial in origin, being produced at the time of birth. But the labour was easy, forceps were not used, nor was the nasal discharge (which presumably came from the lungs) noticed until some hours after birth. Moreover, the lungs were fully expanded, which suggests that a period of normal respiration preceded the hæmorrhage, and it is most unlikely that such a gross injury to the lung could be survived for four days and yet show no signs of inflammatory change. It would appear most probable that a slight but persistent oozing of blood occurred for three or four days, culminating in a large hæmorrhage which practically drowned the patient. No mechanical cause, such as thrombosis of the pulmonary veins or infarction of a large branch of the pulmonary artery, was discovered, although such a condition might conceivably be of lobar distribution. At autopsy the large vessels at the roots of the lungs contained no blood clot.

Browne explains his cases as the result of infection, producing a rapid turgescence of the pulmonary capillaries which the fragile fœtal vessels are unable to withstand, and which therefore rupture. In one of his cases post-mortem culture was sterile, and in the case here recorded the multiplicity of organisms cultured suggests that they may well have been post-mortem contaminations. Moreover, in this case the history of slight bleeding goes back for four days, and an inflammation of the lungs lasting for that time would be obvious on microscopical examination.

Four of the six cases to which reference has been made were premature infants, and the present case was also premature, so that it is possible that prematurity is a predisposing factor in the condition. Hess,[3] in writing of the pathology of premature infants, states that they are subject to hæmorrhage into the lung parenchyma, with consequent thickening of the alveolar septa, and terminating in an almost complete cessation of the circulation.

Finally, one must consider the condition spoken of as the hæmorrhagic diathesis of the newborn, in which spontaneous bleeding occurs usually from the gastro-intestinal tract and almost always within the first week after birth. In the literature of this subject scanty reference is made to hæmorrhage from the lungs. Von Reuss[4] and Griffith[5] both state that considerable hæmorrhages have been observed in the lungs, but whether these have been associated with hæmorrhages from other parts of the body is not quite clear. In the present case the bleeding was confined to the lungs, and would appear to be an example of a spontaneous hæmorrhage of the newborn occurring in an unusual situation.

I wish to express my thanks to Dr. Still for permitting me to report this case.

---

[3] Hess, H. Abt: Pediatrics, ii, 453.
[4] Von Reuss, A. F.: Diseases of the Newborn.
[5] Griffith, J. P. C.: Diseases of Infants and Children.

A CASE OF HEART DISEASE AND EPILEPSY,

WITH A NOTE ON THEIR ASSOCIATION.

BY R. O. MOON, M.D. OXF., F.R.C.P. LOND.,
PHYSICIAN TO THE HOSPITAL FOR DISEASES OF THE HEART;
CONSULTING PHYSICIAN TO THE ROYAL WATERLOO
HOSPITAL.

THE following case, which first came under my notice at the Royal Waterloo Hospital some 20 years ago, presents some features of interest.

A. L., married woman; five children; aged 35. No history of fits in the family; father had rheumatic fever.

No history of rheumatism or other serious illness. She had a fit for the first time at the age of 33. She felt quite well prior to the fit and had no more for a year; after that she had four in the succeeding year. When first seen by me at age of 35 she had a definite presystolic murmur at the apex, doubtless of old standing; the heart was well compensated and there were no cardiac symptoms.

In 1908, after being free from fits for 15 months, she had several in the sixth month of pregnancy. After this she had them more frequently, sometimes two or three in a week, but gradually they settled down to an average of about one a month. Almost invariably the fits occurred at night while she was asleep in bed, so that she did not hurt herself except for biting the tongue. There was never an aura. She continued to have fits on an average of 15 a year; sometimes several would occur in a week and then she would be free for a few months. Whenever she omitted taking bromide for any length of time the fits recommenced. For a time I tried digitalis and caffeine, strongly recommended by Lemoine in these cases, but without any particular success.

Hitherto the cardiac condition had given rise to no symptoms, but in 1918 the auricles began to fibrillate. At first there was a slight increase in the frequency of the fits, but soon afterwards they continued much the same as before. At last she began to have definite cardiac symptoms and was particularly troubled with shortness of breath. She responded well, however, to digitalis (tinct. digitalis, ♏xii., t.d.s.) while not discontinuing the bromide entirely, and after a time the fits became less frequent. Sometimes she has several in one night and will then be free for a few months. She was in the National Hospital for Diseases of the Heart in 1922, when the cardiac condition much improved, and again this year, when she was given luminal and tinct. digitalis ♏xx., o.n. In her case, however, luminal does not seem more effective than the bromides. Though the cardiac condition has decidedly lessened her physical activities, she can do a certain amount of house duties. The epileptic condition has apparently left her memory quite unaffected and her mental activity unimpaired.

Epilepsy and heart disease are two such common affections that it is not unlikely that they will sometimes be found in conjunction without there necessarily being any common cause on which they both depend.

In treatises dealing with epilepsy very little is said about any connexion with heart disease. Some writers on epilepsy, such as Binswanger,[1] have denied altogether any causal connexion between heart disease and epilepsy. Stintzing[2] comes to the same conclusion, and their view is apparently shared by other eminent neurologists. On the other hand, Gowers says: "Heart disease often precedes epilepsy and it is often the only ætiological condition to which one can relate the latter," and Mahnert speaks of *Herzepilepsie*.[3] Out of 1070 cases of epilepsy W. P. Spratling found as many as 22 per cent. with cardiac lesions, but he makes no attempt to draw any conclusion as to their relationship; while Dr. Aldren Turner, out of 980 cases of epilepsy, found not more than 1·8 per cent. with a cardiac lesion.

The only way in which epilepsy can affect the heart prejudicially is by causing a temporary cardiac dilatation, and this seems to be very exceptional. A priori it would naturally be supposed that epilepsy recovery, but as far as my experience is concerned, anti-specific treatment is of no avail at this stage

---

[1] Die Epilepsie, S. 175.
[2] Archiv für Klin. Med., 1899, vol. lxvi.
[3] Wien. Med. Woch., 1897, p. 1610.

Lastly, in all types of cases marked and surprising improvement is occasionally met with when adequate specific treatment is adopted

Treatment

The various measures which may be applicable to any form of cardiac disorder should be considered in detail Apart from these, the indication is for anti-syphilitic treatment This should be adopted in every case in which a definite diagnosis of syphilis of the heart or aorta is arrived at, even if the Wassermann reaction is negative, and in every case of disease of the heart or aorta in which there is a positive Wassermann or other manifestations of active syphilis, even in the absence of clinical evidence that the lesions of the heart and aorta are of specific origin Cardiac failure is not a contra-indication It is impossible to exaggerate the importance of the adoption of this method of treatment *promptly* It should also be *prolonged* I am a firm believer in the employment of the arsenical preparations, but only under certain conditions Their indiscriminate use is attended with danger even of grave degree, they may result in further swelling of the intima of the small vessels, and thus increase the risk of thrombosis I always recommend a preliminary course, of three weeks' duration, of mercurial inunction and of iodide of potassium by the mouth—10 gr thrice daily during the first week, increased to 15 gr. during the second week, and to 20 gr during the third This to be followed by one of the arsenical compounds administered cautiously, commencing with small doses and only gradually increasing the dosage The scheme I advise is the result of two or three conversations I have had the privilege of having with Colonel Harrison, to whom I desire gratefully to acknowledge my indebtedness This consists of a series of courses of sulfarsenol injected subcutaneously, with mercury injected intramuscularly The first course makes a cautious start with 10 cg of sulfarsenol, and the dosage is increased, in bi-weekly injections, to 24 cg, the total amount given in the first 54 days being 2 76 g in 16 injections, with 8 gr. of mercury in eight injections The reason that the dosage of sulfarsenol in the first course is cautious is that patients with syphilis of the heart or aorta seem easily to be upset at first by arsenobenzol preparations After the foregoing course of injections, potassium iodide is given for three weeks, to be followed three weeks later by a course of five injections of sulfarsenol and mercury This time it may be possible to proceed more boldly with the sulfarsenol—three injections of 48 cg and two of 60 cg Thereafter the treatment is continued with courses of 10 injections of 5 8 g sulfarsenol and 10 gr of mercury at intervals increasing from two to five months, with potassium iodide for a month at a time between the courses The treatment is continued on these lines for two years After the completion of this scheme, I suggest a three weeks' course of potassium iodide every two or three months during the rest of the patient's life This method of treatment applies also to cases of aneurysm It may be advisable to continue anti-syphilitic treatment as long as the Wassermann is positive even in the absence of other manifestions of active syphilis, for there is a risk of exacerbations all through life, and the small vessels around the principal lesions may become involved I have been surprised at the frequency with which a positive Wassermann persists even in the case of patients who, from a clinical point of view, have done well

I would urge the importance of further combined investigation by the clinician and the pathologist of this important subject

In conclusion, I wish to express my thanks to Prof H M Turnbull for his kindness in discussing with me the pathology of the subject

ACUTE HÆMORRHAGIC PNEUMONIA OF INFANTS.

By W. P H SHELDON, M D, M R C P LOND,
MEDICAL REGISTRAR, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET, W C

IN an inquiry into the causes, pathology, and treatment of still-birth, Browne[1] in 1921 drew attention to six cases in which death had occurred unexpectedly in apparently healthy infants, and at post-mortem examination the cause of death was found to be hæmorrhage of variable severity into the pulmonary tissues The age at which death occurred varied from 8 hours to 5 weeks, *and in four of the* six cases death had taken place quite suddenly The only symptoms consisted of a brief blanching of the skin and epistaxis In a later description[2] of the case which lived to the age of 5 weeks, the rapidity of death is well exemplified, for the child was found dead half an hour after the nurse had changed its napkin, and at that time it had appeared quite normal In the ensuing half hour the nurse had not left the room, nor had the child uttered any sound

In some of these cases the lungs, or parts of them, were found to be solid with blood, but there was no macroscopic evidence to show that the hæmorrhage was inflammatory in origin Microscopically the bleeding was found to have taken place within the alveolar septa as well into the alveolar air spaces, and apart from some shedding of the endothelial cells, there was little which definitely pointed to inflammation In the three cases in which cultures were made. one was sterile, one grew *Bacillus coli*, and *Staphylococcus aureus* was obtained from the third The case about to be described seems to correspond sufficiently with these cases to merit the same title

A male child, the eldest of the family and preceded by no miscarriages, was born, ten days premature, to healthy parents both aged 20 years There was no obvious cause for the prematurity, the labour was easy and instruments were not required There was no evidence of syphilis in the parents, the father's Wassermann reaction was negative, and there was no family history of hæmophilia A blood-stained nasal discharge was first noticed 12 hours after birth, and persisted until admission to hospital For four days after birth the patient vomited after every feed, vomiting occurring about ten minutes after a feed had been taken The vomited material was not blood-stained

The infant was admitted to hospital when four days old under the care of Dr G F Still The patient was then collapsed, pallid, and pulseless, temperature only 96° F A blood-stained serous discharge was noted from both nostrils, and seemed to impede respiration, for the discharge was snorted from the nose on to the child's jacket Death occurred within an hour of admission

Post-mortem Examination —Premature infant, weight 3 lb 13 oz Skull, brain, and meninges normal Upper air passages contained a little blood-stained froth On removing the lungs, the upper and lower lobes of the right lung resembled pure blood clots, they were deep purple in colour, solid, of liver-like consistency, fully expanded, completely airless, and sank in water Most of the right middle lobe was normal, but there were a few small purple and solid areas in it, and two small ephysematous bullæ at its free margin The upper lobe of the left lung was normal, the lower lobe contained several solid purple patches each as large as a pea There were no thrombi in the main vessels at the roots of the lungs Both pleuræ appeared perfectly healthy and were shiny and smooth The mediastinal lymph glands were normal Heart normal Ductus arteriosus patent Spleen not enlarged, but very engorged and almost black in colour Liver appeared to be slightly congested Other viscera normal

Microscopically, sections from the right lower lobe showed the alveoli and bronchioles to be full of recent blood, the alveolar walls in a few places appeared compressed, but over most of the section they also were distended with blood, and in places there was direct continuity between the blood in the alveolar walls and that within the alveoli The hæmorrhage had obviously originated from the vessels within the alveolar walls The pleura was in places raised the markings on a measuring gauge. With such a complaint the court is at once impressed in his favour and the difficulty arises of finding an answer to the question for what kind of work is such a man fitted having due regard to his possible earning capacity. The judge requires to be satisfied on this point, he weighs the suggestions placed before him, and if he rejects them as being against the man's interests, the workman may become a pensioner for life of the insurance company concerned. It is true that the company has the power of reopening the case should it be found that the man is afterwards capable of undertaking remunerative employment. But there is little inducement for him to imperil an arrangement so greatly in his favour. Some workmen on the dole will not work if they can live without doing so. Similarly, an elderly man, with only one eye and a loss of orientation which has become permanent, is well aware that the labour market is practically closed to him.

---

[1] Browne, F J Brit Med Jour, 1921, ii, 144
[2] Browne, F J Ibid, 1922, i, 470

Uniocular Heterophoria.

Loss of orientation, or heterophoria in an insured workman with only one eye cannot be excluded as a factor of importance under the Workmen's Compensation Act. If permanent as a disability, revealed by the accident, it adds to the claim in the settlement for the loss of an eye, inasmuch as it reduces the working capacity and the earning capacity of the workman concerned, apart from the abolition of binocular vision.

The conditions under which it may assume a permanent form may now be considered. While binocular vision is present heterophoria in one eye commonly exists as a latent form of disturbance of muscular equilibrium such as occurs in anisometropia, where the refraction in one eye is better than that in the other. In a general sense, the better eye becomes the working eye while the more defective one functions in a state of latent heterophoria, without, however, causing any disturbance to the vision. When, on the other hand, the working eye has been removed, with abolition of binocular vision, the latent heterophoria in the remaining eye becomes manifest with the consequent loss of the power of accurate fixation, and the possible continuance of this as a permanent defect. In all cases in which a workman loses an eye in the course of his employment this contingency arises, and the only consolation to be derived from its consideration is the rarity of its occurrence.

Subjoined are the brief notes of a case in point.

A boilermaker, aged 61, in September, 1923, lost his right eye through the penetration of a piece of steel. When seen in January, 1925, four months later, the vision of the left eye was 6/24, improved to 6/12 nearly, with −0·75 cyl. and +1 sph. Orientation was still unrestored. On Nov 21st, 1925, he was seen again. About a week previously he had resumed work as a "plater's labourer." This required him to hammer in rivets. With the first use of the hammer he hit a man on the head, rendering him unconscious. He ascribed the accident to his vision becoming hazy, so that he failed to see the rivet clearly. The orientation was still defective although he admitted that a 2° prism base outwards enabled him to see more clearly. After this he ceased to do any work. He was seen for the third time on Oct. 5th, 1925. There was no change in the condition, and on Jan. 22nd, 1926, the case was taken into the county court with the result that the man became a pensioner for life of the insurance company concerned.

WORKHOUSE STATISTICS.—Information recently elicited from the Minister of Health in the House of Commons shows that the average number of persons maintained in workhouses in England and Wales was slightly smaller in the year 1924–25 than in the previous year. The figure for 1923–24 was 207,346, and that for 1925 201,895. On Jan 1st last 134,500 adults and 52,000 children under 16 years of age were being maintained in the various classes of Poor-law institutions in England and Wales. The average weekly cost per person maintained was 25s. 5d. in the year 1923–24 and 27s. 1½d. in the year 1924–25. The total expenditure in connexion with the institutions was £13,735,923 during the year 1923–24 and £14,194,151 during the year 1924–25.

Medical Societies.

LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION

The Health of the Professional Woman

A MEETING of this Association was held on June 8th at the house of the British Medical Association, Dr. **CHRISTINE MURRELL**, the President, being in the chair.

Dr **LETITIA FAIRFIELD** gave an address on the Health of the Professional Woman, which was published in full in THE LANCET of July 3rd. A discussion followed the paper.

Dr **ELEANOR LOWRY** suggested that the occupational laryngitis might be caused by: 1. Bad voice production. 2. Sinus trouble. 3. Excessive smoking.

Dr **JUSTINA WILSON**, from her experience of the National Hospital for Diseases of the Heart, confirmed the much greater incidence of rheumatic heart disease in women. Heart disease following influenza appeared to be very deadly to the heart muscle.

Dr. **MARY KIDD** agreed that vegetables rather than fruit were needed to prevent constipation. It was unfortunate that vegetables were so expensive nowadays, and also that considerable time had to be spent in cleaning and cooking them which the woman worker living alone could ill afford.

Dr **RUTH VERNEY** deplored the lack of cheap institutions to which functional nervous disease cases could be sent, since many of these cases could only be treated away from the home circumstances which might have contributed to cause the breakdown.

Dr. **MINA DOBBIE** said that practitioners ought to inquire how working women spent their leisure and holidays; often it was found that they looked after aged relatives from a sense of duty and were quite grateful to practitioners who forbade them to do so.

Dr. **E. L. ROBERTS** suggested that a possible cause of neurosis in elderly teachers was a sense of failure in not having advanced further in their profession and a lack of anything to look forward to.

Dr. **C. M. PEAKE** pointed out that the effects of the menopause might not be immediate—for example, flushings could occur long after the actual cessation of menstruation.

Dr. **A. SHEPPARD** thought that in some of the banks compulsory retiring age for women was as early as 45.

The **PRESIDENT** pointed out that the other duties outside work performed by most professional women would account for some of the excess of functional nervous disease. Neurasthenia in her opinion was always the result of emotional overstrain. There was a need for well-run nursing homes in psychological institutions where the practitioner could continue to treat the patient.—Dr **FAIRFIELD** briefly replied.

A social meeting of the Association was held at the same place on June 18th, the **PRESIDENT** in the chair. A lecture, illustrated by lantern slides, was given by Sir **JAMES BERRY** on the subject of

Greek Temples in Sicily

which Lady **BERRY** followed up by reminiscences of travel in many lands.

Sir **JAMES BERRY** dealt in the first place with the historical side of his subject sketching the main events which led to the formation of the colonies of "Magna Graeca" in Southern Italy and Sicily. He then passed on to a consideration of the architecture of Greek temples in general, their arrangement, the modifications which they underwent during the development of Greek culture, the influence of the earlier architecture of Egypt and the subsequent fate of the erections. In an enlightening series of slides showing reconstructions of temples, temples in process of building, and the quarries from which the stone was hewn, the methods employed by the Greeks in fashioning and erecting such vast stone edifices were exemplified and made clear.

Lady **BERRY** then showed a series of photographs which she had made during various holidays abroad would have a particularly bad effect upon the heart, and that the violent convulsions would put a considerable strain upon the heart Setting aside status epilepticus, however, this does not seem to be the case The cardiac condition of a patient, after having had several fits in a week, has not appeared to me to be materially worse than it was before On the other hand, that abnormalities of the circulatory system can give rise to epileptiform convulsions there can be no doubt We know, for instance, that in such conditions as Stokes-Adams's disease, where the bundle of His has been damaged, frequent epileptiform convulsions occur, as they also do in advanced cases of aortic stenosis and even in cases of arterio-sclerosis But these, of course, are not cases of genuine idiopathic epilepsy, and the question for consideration is whether, when true idiopathic epilepsy is found associated with a valvular lesion of ordinary endocarditis, the association may not be more than an accidental one

Even if there is no direct causal connexion between epilepsy and heart disease it does not follow that the two diseases are uninfluenced by one another, and, indeed, there seems reason to suppose that epilepsy, when associated with cardiac disease, exhibits some phenomena which are not quite like those of ordinary epilepsy Thus the classical onset of a fit with a cry, a fall, loss of consciousness, and convulsions is not common with the cardiac epileptics, whose attacks are characterised rather by giddiness, fits of absence of mind, and transient intellectual troubles—in a word, by psychic epilepsy The aura, too, in these cardiac cases often takes the form of palpitations, precordial pain, the feeling of a wave of blood which rises up into the head, and produces dizziness As a rule, this condition lasts longer than the ordinary epileptic aura, it develops slowly, giving the patient time to sit down, and at times the aura constitutes the whole of the attack without giving rise to convulsions or loss of consciousness The fits in cardiac cases are usually infrequent and less severe than in uncomplicated epilepsy Some of my cases have exhibited circulatory disturbances as an aura, such as palpitations, feeling of numbness in the hands, severe pain in the cardiac region, pulsation of the cervical arteries, sensation of rapid beating of the heart with the face becoming hot prior to the epileptic fit

Another feature of cardiac epilepsy is that the attacks usually occur at night, this fact has been emphasised by Lemoine,[4] who considers that in mitral cases the attacks are caused by cerebral congestion, and states that they may cease when the patient sits up in bed, whereas in aortic cases the attacks are due to cerebral anæmia and are cut short by the horizontal posture

Though I have met with a few cases of idiopathic epilepsy associated with aortic regurgitation, the most common cardiac lesion in my experience in this connexion has been mitral stenosis

It would, perhaps, seem over-fanciful to suggest that in the case above recorded the epileptic seizures were at the outset due to the previously existing mitral stenosis, yet Dr A E Russell in his most suggestive Goulstonian lecture (1905),[5] considers that there is strong evidence for an epileptic fit owing its origin to some disturbance of the circulation and regards cerebral anæmia as the fundamental factor which underlies epileptic fits Gowers, too, adduces cases[6] which present strong evidence of the influence of repeated cardiac syncope in disposing to epilepsy

---

[4] Revue de Médecine, 1887
[5] THE LANCET, 1909 i 965 and seq
[6] Borderland of Epilepsy, p 8

ROYAL FREE HOSPITAL —At the festival dinner last week it was reported that 700 patients are treated daily, and Lord Riddell stated that there was an overdraft of £20,000 as well as a large debit balance An anonymous gift of £5000 was announced, and Lord Riddell added that he would give a similar sum

---

THE LOSS OF ORIENTATION IN INSURED WORKMEN

ITS ECONOMIC ASPECT

By PERCY DUNN, F R C S Eng,
CONSULTING OPHTHALMIC SURGEON, WEST LONDON HOSPITAL, LATE LECTURER ON OPHTHALMOLOGY, WEST LONDON POST-GRADUATE COLLEGE.

A MAN after convalescence from the enucleation of an eye is puzzled by a symptom which is new to him. At first it amuses him, and save on inquiry he never mentions it while under examination He finds on pouring out a cup of tea that instead of the tea falling into the cup much of it falls outside Briefly, for the time being he has lost the faculty of orientation When normal binocular vision is present correct orientation is secured by the balanced action of the ocular muscles But with the loss of an eye and the change to monocular vision the disturbance of the muscular equilibrium is reflected in the temporary arrest of accurate orientation The duration of the disability is generally a question of age It usually varies between three and six weeks in young adults In older men the period is longer

As a matter of expediency no one-eyed man should be permitted to resume his employment until accurate orientation has been re-established For example, a bricklayer, unconscious of his mistake, will lay bricks out of line, if he has to ascend or descend a ladder he is liable to make a false step, with the risk of serious consequences He is aware that something is wrong with his sight, but is naturally ignorant of the cause Moreover, a man in this condition can become a positive danger to his fellow workmen, if called upon to wield a hammer for the purpose, say, of striking a rivet, the retinal image of the rivet may be displaced while striking the blow, and injury may be inflicted upon the man who is assisting him

The Position of Insurance Companies

Two points present themselves for consideration in this connexion First the economic one, secondly the position in which the insurance companies find themselves From the economic aspect the workman as long as the loss of orientation continues is confronted with an impairment of his earning capacity, apart from the loss of an eye He can no more depend upon the accuracy of his work than can his employer A bricklayer is of no use if he cannot go up or down a ladder without risk, nor is he of any use if he cannot lay bricks in line What then, under the circumstances, is the position of the insurance companies? Inevitably the weekly wage compensation must be continued until correct orientation has been restored It must be admitted that the disability has arisen indirectly as the result of an accident in the course of employment

Cases of the kind are, nevertheless, rare, as experience shows, owing to the gradual recovery from the disability But that is not all that can be said of the matter. If it should happen that the loss of orientation becomes permanent the insurance company concerned will find itself in an unenviable position Although the form vision may be adequate for resuming some occupation (and apparently county court judges are satisfied when this amounts to 6/12, with or without correction in the remaining eye), a workman may demand an exorbitant sum for the settlement of his case, and if it be refused, may take his case into court, basing his claim upon the fact that owing to the loss of his eye, a defect has developed in the other one which prevents him from defining objects clearly He emphasises that an object at first appears to him plain and distinct, but afterwards becomes blurred and unsteady Consequently he is unable to define clearly, for example, transient form, with paraplegia, clearing up in a few weeks without complications; (2) a form curable in from 18 months to two years; (3) a variety which pursues a chronic course. The prognosis in a given case depends on the following points: the condition is probably curable if the paraplegia appears early, develops rapidly, and reaches its maximum quickly, even though that be a complete paraplegia. Such cases are caused by abscess formation within the spinal canal. Those with slow development and slow progression even if incomplete, are due commonly to pachymeningitis or to vascular changes in the cord, the result of severe or prolonged compression, and are distinctly less favourable. Contrary to a widely held view, Mme. Sorrel-Dejerine considers that cure can be obtained as satisfactorily in adult as in juvenile cases, and that age is not a factor that has prognostic significance. The monograph is well documented and illustrated, and is worthy of attention on the part of both neurologist and surgeon.

Diseases of the Nervous System. By H. CAMPBELL THOMSON, M.D., F.R.C.P., Consulting Physician to the Department for Nervous Diseases and Emeritus Lecturer on Neurology, Middlesex Hospital, &c; and GEORGE RIDDOCH, M.D., F.R.C.P., Assistant Physician to the London Hospital and to the National Hospital, Queen-square. Fourth edition revised. London: Cassell and Co. 1926. Pp. 541. 16*s*.

THE fourth edition of this text-book appears with the additional name of Dr. George Riddoch as a joint author. On previous occasions we have cordially recommended its usefulness for senior students and for practitioners of medicine since it aims at marshalling the main facts of neurology in a concise and lucid manner, avoiding minutiæ and controversial topics to a large extent, and presenting the subject-matter dogmatically rather than critically. The continued demand for the book is evidence of its practical merits. In its new edition the authors have succeeded in preventing the loss of its "manual" character by removing obsolete and redundant material, so that the volume is no larger than before, although it comprises a considerable amount of new data. It will without doubt receive continuing appreciation by those for whom it is intended.

Pathologie du Cerveau et du Cervelet. (Fascicule XIX. of the Nouveau Traite de Medécine, edited by MM. G. H. ROGER, F. WIDAL, and P. J. TEISSIER.) By Various Authors. Paris: Masson et Cie. 1925. Pp. 1016. Fr. 80.

THIS handsome volume of over a thousand pages is devoted not to neuropathology alone, in the strict sense, though the pathological descriptions are voluminous and accurate, but also to the clinical and semiological sides of the topics with which it deals. These include cortical syndromes, subcortical syndromes, cerebral tumours, cerebral syphilis, vascular disorders, infantile encephalopathies, cerebellar and labyrinthine syndromes—in short, a fairly complete compendium of brain symptomatology and pathology. Among the authors are many whose names are well known beyond the limits of the neurological schools of France. Glancing through these finely illustrated pages, we realise afresh that this is the sort of thing the French do extremely well. They are masters of the clinico-anatomical method. Their knowledge is based on the collocation of clinical with pathological material, so that in their descriptions one seems to pass naturally from the former aspect to the latter, with the feeling that all has been duly correlated and explained. Nevertheless the weakness of the method is here also exemplified, if only in a negative way, for the problems of pathogenesis of symptoms are not always seriously tackled and in some instances appear to be altogether omitted. Between the commonplace clinical manifestations of athetosis, for example, and the fairly well-defined pathological lesions prone to be associated with it, lies the field of interpretation of the symptom as the expression of the action of living physiological mechanisms—a question that obviously cannot be solved by mere consideration of dead material under the microscope. This is the side of neurology that has not been so well developed by the French as by some other schools, a contention which is apparent if this volume be scanned critically. However this may be, our appreciation of the high standard of the contributions in the book is not thereby diminished: its presentment of cerebral and cerebellar syndromes is admirably lucid and comprehensive.

X RAYS AND PERIPHERAL CIRCULATION.

Die Peripheren Blutgefässe im Röntgenbild. By Dr. S. HIRSCH, Senior Int. Physician, Sandhof, Frankfurt a.M. Frankfurt a.M.: Kein and Nemnich. 1924. Pp. 72. M.6.90.

THE possibility of demonstrating the peripheral circulation in the living subject by opaque injections into veins has aroused much interest among radiologists, but the work has not been followed up in this country. This interesting monograph gives an account of the technique and possibilities of the method, based on the author's original experiments. In over a hundred cases a few c.cm. of a 10 per cent. solution of strontium bromide have been injected into living subjects without ill effect. The method is only applicable to limbs, in which the circulation can be stopped by compression. The work is in the experimental stage and has not as yet been turned to practical account in the study of disease, but the photographs convincingly demonstrate its possibilities. The monograph also contains detailed information on injection masses and solutions suitable for X ray investigation of anatomical specimens and for the study of the circulation of animals by the injection of opaque substances. This information should be of value to anatomists and experimental physiologists and pathologists.

OVERPOPULATION.

Theory and Statistics. By P. SARGANT FLORENCE. London: Kegan Paul. 1926. Pp. 66. 2*s.* 6*d.*

THIS little book, which is a recent addition to the "Psyche" miniature series, is a restatement—based upon a simultaneous consideration of history, theory, and statistics in the light of the economic developments and new social practices of the last century—of the position of Malthus. The events of the last hundred years have been held by many to refute this writer's more salient arguments. This refutation, Mr. Florence contends, results from a misrepresentation of what, in effect, Malthus, in his later writings especially, actually said, and upon a dissociation of historical, theoretical, and statistical lines of argument which, in Malthus's writings, were combined. Malthus's three cardinal propositions are distinctly enunciated, and attention is directed to misinterpretations of his views arising from failure to differentiate the last two of these propositions.

Origins of variation in the birth-rate are then considered, and it is argued that the recent fall in the birth-rate manifest among the well-to-do is attributable to the introduction of contraceptive methods and not to cyclical variations in fecundity such as were observed over short-term periods in the second half of the last century. Mr. Florence further argues that the *sustained* magnitude of our post-war unemployment figures expresses more than a cyclical variation in trade, such as the one that appeared so ephemerally in 1879. It would appear, in fact, to represent a growing margin of unemployed over and above these cyclical variations, which may testify to a more chronic state of overpopulation. The book ends with an attack on the view that we are justified in adopting a "laissez-faire" attitude towards problems of population, certain recent pronouncements notwithstanding. If we choose to say that the growth of a given population

Reviews and Notices of Books.

ARTIFICIAL SUNLIGHT THERAPY.

Artificial Sunlight and Its Therapeutic Uses. By FRANCIS HOWARD HUMPHRIS, M.D. Brux., F.R.C.P. Edin., Hon. Consulting X Ray Physician to the American Hospital in London and to Christ's Hospital. London: Humphrey Milford, Oxford University Press. 1926. Pp. 236+xx. 8s. 6d.

Les Rayons Ultra-Violets en Thérapeutique. By Dr. SAIDMAN. Paris: Octave Doin. 1925. Pp. 580. Fr.65.

THE third edition of Dr. Humphris's book on the therapeutic uses of artificial sunlight has been enriched by numerous illustrations, the most attractive of which is the one forming the frontispiece and which represents Akhnaton with his wife Nefertiti at worship in the radiance of the beneficent sun. The volume contains a great deal of information which can be put to immediate use by those wishing to carry out this form of therapy. The author is more convincing when he treats of the practical application of artificial light therapy than when he enters upon biophysical ground. We can hardly expect agreement yet upon the essential processes set going by ultra-violet radiation. Dr. Humphris tells us that the calcium content of the blood is increased by exposure to these rays; but the data given on p. 69 are hardly sufficient to support this statement. They show the percentage change of calcium of the serum of rachitic children before and after exposure to light in seven cases. In two there is a fall of the calcium content and in three others the increases are only 2, 5½, and 5½ per cent. respectively. If it be a fact, it should be possible to find more convincing evidence of it. Exactly what are the main changes brought about time and experimental work will show; Dr. Saidman, for one, will have none of the usually ascribed chemical actions as even mainly contributory. For him and others of his school the photo-electrical effect of the rays is all sufficient. With this well-known phenomenon in mind, he would be bold who would yet claim to have found any rational explanation of the remarkable therapeutic changes brought about by ultra-violet rays which are enumerated by Dr. Humphris on p. 80 of this edition. The book retains the useful features on which we have previously commented and will continue to be popular among the swiftly increasing group of practitioners who have added artificial light apparatus to their armamentarium.

Dr. Saidman's book is divided into three parts. The first is concerned with technical matters and contains a good account of the sources of ultra-violet rays, how they are used, and what precautions are necessary in their medical application. The second part is devoted to the physiological action of these rays and, as a prelude to this study, some account is given of the process of absorption of the rays by different media and the phenomena of photo-electricity. This second section of the book gives one of the best accounts which we have seen of the facts which have so far been obtained upon the physiological reactions consequent upon irradiation by light and ultra-violet rays. The third section of the book is devoted to therapy, and is divided into three parts dealing with the use of ultra-violet rays in surgery, in medicine, and in diseases of children. Then follow an extensive bibliography and a series of spectra relating to subjects discussed in the text.

We think it unfortunate that the author pins his faith so exclusively upon a photo-electric explanation of all the complex effects in living things which follow upon ultra-violet exposure. No doubt it plays some part in some of the processes, but there is so little direct experimental work in support of the theory that it would seem better to keep an open mind on the subject, rather than to reject summarily other facts which may bear upon the vital processes which are quickened so amazingly by judicious exposure to the rays. On the whole, however, we can recommend the book to readers who wish to extend their knowledge of the subject.

INDIAN HYGIENE AND PUBLIC HEALTH.

By Lieut.-Colonel C. L. DUNN, D.P.H., I.M.S., Director of Public Health, United Provinces, and RAI BAHADUR D. D. PANDYA, D.P.H., Director of Provincial Hygiene Institute, United Provinces. Calcutta and London: Butterworth and Co., Ltd. 1925. Pp. 679. 22s.

THIS volume is intended to serve as a text-book for candidates for diplomas in public health in India and especially for those studying in the United Provinces. Although its matter is definitely related to the public health problems of India, its form follows closely the English text-books. Chapters are devoted to water supplies, ventilation, disposal of refuse and excreta, building sites, food, communicable diseases, disinfection, housing and town-planning, personal hygiene, school hygiene, meteorology, vital statistics, and sanitary law. Six appendices contain physical data and other facts of practical utility to the sanitarian. There are numerous and elaborate illustrations, and the authors have spared no pains in supplying their readers with information.

The publication of this book and another recently reviewed in these columns may be taken as a measure of present-day public health activity in India. It may be necessary to feed the mind of the student trained in India with potted knowledge—probably no one knows this better than Colonel Dunn or his collaborator—but we think the authors sometimes fail by trying to convey too much, thus not leaving space which might well have been employed otherwise. For instance, the time-honoured calculations of respiratory impurity and standards of ventilation might have been omitted in the light of modern work and, instead, some mention made of the kata thermometer. The absence of reference to accessory food substances is unfortunate, and the description of the causation of beri-beri and pellagra is inadequate. Indeed, the physiological outlook which is gradually removing the hygienists from the thraldom of the sanitary engineer is not markedly exhibited by the authors of this book. We look in vain, too, for the elucidation of such questions as the reputed prevalence of non-pulmonary tuberculosis among some groups of Indians whose milk is mainly derived from buffaloes. Nothing is said as to the prevalence of tubercle in the latter.

While this volume is disappointing in the respects indicated, it contains a mass of facts that will be of great value to the administrator, for they are well put together and indexed, while the work is produced at a very reasonable price.

NEUROLOGY.

Contribution à l'Étude des Paraplegies Pottiques. Essai sur l'Évolution et le Prognostic; basé sur 40 Observations Personelles. By Mme. le Dr. SORREL-DEJERINE, Ancien Interne des Hôpitaux de Paris. Paris: Masson et Cie. 1926. With 97 illustrations. Pp. 399. Fr.40.

Pott's disease of the spine is a condition which is possibly not so frequent as it used to be; it is a clinical "uncommonplace," but its most suitable treatment still remains sub judice. Its varieties and its pathology, in children and in adults, are curiously variable, as are its course and termination. Some cases are favourable from the outset, others the reverse. The daughter of the late Prof. Dejerine, impressed by these facts, has made in the book under review a noteworthy contribution to the subject, based on abundant clinico-pathological material, and has reached conclusions which may be summarised as follows. There are three chief varieties: (1) a

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following table gives health statistics for 1925 from six districts of varying type A high birth-rate, usual in colliery districts. will be noted in Doncaster and may be compared with that of Swinton, on the Lancashire coal-field, where. in addition to 3710 males engaged in mining and allied occupations, there are 3948 textile workers (877 males and 3071 females)

Name of district.	Estimated mid-year population (R. G.).	Birth rate.	Death-rates per 1000 of the population. All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Heart disease.	Death-rates per 1000 births. Infant mortality	Maternal mort. from childbirth.
Sunderland C B	166,000	24·7	15·3	1·52	1·07	3·7	2·0*	118	3·9
Stockport C B .	125,900	16·5	13·9	1·03	1·45	3·3	2·6*	97	2·9
Bootle C B	83,260	23·3	13·1	1·59	1·13	2·9	0·8	97	2·6
Doncaster R.D .	33,910	33·6	10·7	1·00	1·00	2·4	0·9	79	0·0
Swinton and Pendlebury U D	33,400	14·7	10·3	0·72	1·11	2·5	1·0	72	6·0
Stafford B .	29,030	16·7	9·3	1·10	0·93	2·0	1·0	51	2·0

* Diseases of circulatory system, excluding cerebral hæmorrhage. C.B =County borough. R.D =Rural district U D =Urban district B =Borough.

Sunderland

Owing to the recent death of Dr. H. Renney, Dr Eustace Thorpe. temporary medical officer of health submits the annual report, which was revised by Dr Renney before his death

The water-supply of Sunderland is derived from deep wells in the magnesian limestone During 1925 bacteriological examination resulted in the finding of *B. coli*, in 100 c cm , in more than 40 per cent of 212 samples examined. The comment is made that its presence " is no doubt due to the deposit of manure, droppings of cattle and sheep, and of night soil used by the farmers as a land fertiliser The bacilli. washed out of these deposits by the rainfall, are carried through the subsoil and thence by cracks in the clay and fissures in the limestone to the wells sunk in these strata " Sunderland is now almost a water-carriage town, the 1226 remaining conservancy closets being of the small covered-in type commonly known as ash closets The housing shortage is still urgent. and innumerable instances are known " of families of seven or more living in one room and of five or more of such families living in one house with conveniences for one family only " A further 3000 houses are required, all of a working-class type, and representations have been made with regard to three unhealthy areas Out of 106 samples of milk examined five were found to contain living tubercle bacilli Four of the farms situated outside the borough were visited by the veterinary surgeon and in each case a written undertaking was received from the farmer that he would not send milk from the suspicious cows into the borough for sale. In one case the county M O H was notified At the fifth farm situated within the borough three suspicious cows were found. and one was slaughtered, compensation being paid Three cases of small-pox were notified, and 31 cases of encephalitis lethargica in 27 of which the diagnosis was confirmed During the year 11 mothers received antenatal treatment for syphilis and the eight infants born to them were quite healthy Ultra violet rays have been used at the infirmary for rickets, but it is felt that this treatment can only be carried out satisfactory at the centres owing to the difficulty of ensuring regular attendance. In March a scheme for antenatal visitation by the midwives was begun on the basis of a payment of 2s. per case for satisfactory work. During the year 66 cases of ophthalmia neonatorum were notified; one baby became blind and two had one eye damaged. Appreciation is expressed of the Eye Infirmary's treatment of these cases but unfortunately it has not yet been possible to arrange for a ward to which such babies can be admitted as in-patients At the municipal hospitals a bed isolation ward has been successfully used for treating simultaneously many different diseases without the occurrence of cross-infection

Stockport.

Dr A G. Jenner died last October and the deputy medical officer of health. Dr H. Richmond, submits the report The number of new houses erected was 405, as compared with 241 in the previous year, and at the end of the year there were 204 in course of erection Nevertheless there is still not enough housing accommodation of the smaller type Early in the year an arrangement was made with the Stockport Infirmary for the treatment of infantile paralysis, tuberculous bones and joints, rickets, congenital defects. and injuries The orthopædic centre formed is in charge of Mr. E S. Brentnall, and a trained masseuse is in attendance During the last six months of the year 48 cases were treated, 24 X ray examinations were made, and eight cases were admitted as in-patients There were also 151 attendances for massage and 387 for medical exercises. The cost of surgical appliances in connexion with the scheme is borne by the estate of the late Miss Maria Leigh. The arrangement has still to receive the approval of the Ministry of Health. It is remarked that of 130 fatal cases of tuberculosis, 20 had not been notified at the time of death.

Bootle.

Dr. F. T H. Wood reports that an apparatus for ultra-violet light treatment was installed at Linacre Isolation Hospital in October, 1925 Antenatal clinics have established themselves in the public mind and during 1925 about 1 in 4 of the expectant mothers came for examination and advice. The close association between the clinics and the maternity home. and through the consulting gynæcologist, with the Liverpool special hospitals, adds much to their value. During the year 128 patients were admitted to the maternity home. There were no maternal deaths, three children were stillborn and three died of debility within ten days One case of ophthalmia neonatorum occurred which was transferred to the Liverpool Eye Hospital and there cured All the mothers left the institution breast-feeding their babies except three, who had mastitis As regards the health of infants generally, Dr. Wood points out that, although intestinal diseases have almost disappeared as a cause of death, no real improvement can be recorded in respiratory diseases, and that the deaths of infants in the first month remain as numerous as they were 20 or 30 years ago He gives a table showing that the neonatal death-rates during the last four quinquennia were 36·7, 41·5 31·5 and 34·6 per 1000 births respectively.

The milk-supply is unsatisfactory and " remains demonstrably dirty,' and the general public is unwilling to encourage improvement by recognising that difference in quality implies difference in price. Out of 28 samples examined. one reached the standard of Certified milk. two of Grade A milk, and one half were grossly contaminated Two of the 28 contained tubercle bacilli In July the isolation hospital decided to purchase Certified milk and similar action was urged upon the management of the Bootle Borough Hospital A number of local distributors have begun to supply bottled milk without complying with any of the regulations for designated milk. This milk is the ordinary unsatisfactory milk and the imperfect arrangements for sterilising the bottles have probably is a "biologically self-regulating process," as has of late been authoritatively stated, we are not to suppose that the actual mode of the self-regulation is either immaterial or beyond our control Deliberate regulation of births by human beings is capable of entering into the process as intimately as does the fortuitous multiplication occurring in communities that suffer from high birth- and death-rates

Though short, this book is closely written and closely reasoned At times, especially in the second chapter, the literary style is too involved to make easy reading, and in one sentence in the middle of page 10 sustained contemplation has failed to reveal a meaning. But the book contains some interesting statistics, and its conclusion that population cannot safely be ignored, in the belief that it will regulate itself to our convenience, is important

---

EAR, NOSE, AND THROAT THERAPY

Handbuch der Hals-Nasen-Ohren-Heilkunde Edited by A. DENKER and O KAHLER Second volume Diseases of the Air Passages and Mouth, II. Berlin · Julius Springer; Munich · J F. Bergmann 1926 Pp 1068

THIS is the second volume of a very large text-book which, when completed, will consist of nine volumes The first five are to deal with the mouth cavity and upper air passages, and the rest with the ear The first volume, which has already received notice in these columns, was devoted to the anatomy, histology, physiology, and methods of examination of the upper air passages The volume under review is concerned with ætiology and pathology, and in the first 353 pages these subjects are considered generally This is the least satisfactory part of the book, being composed largely of vague generalisations Such factors as climate, age, or injury could be considered under the separate diseases of the parts in question more usefully than by a discussion of their effects on the air passages in general, and the same criticism applies to the chapters on general symptomatology The section on general therapy is far more useful, and includes accounts of general and of local anæsthesia Methods of local therapy for the nose and throat are well described, but it is not clear why the operation of tracheotomy should be placed here rather than in a later volume with other operations on the larynx and trachea After these generalities we reach the beginning of the descriptions of special diseases which will occupy the rest of the five volumes dealing with the upper air passages First come malformations of the nose, throat, including palate, lips and tongue, larynx and trachea, this chapter describes, in addition to the well-known deformities, some interesting cases of rare malformations The remainder of the volume is occupied with the nasal septum, acute and chronic rhinitis, and diseases of the nasal accessory sinuses It will be noticed that the work is arranged on a general, not a regional classification, deformities of the nose, throat, and larynx come into this volume, foreign bodies in all these regions into Vol III, tuberculosis in Vol IV, and tumours in Vol V In the present volume the various chapters are in the hands of acknowledged authorities; they are well written, well illustrated where illustrations are required, and are thorough and complete The second volume is a worthy companion to the first, and the two make a good beginning to what seems likely to be a great work

---

DISEASES OF THE MOUTH, AND OTHER REGIONS

Non-Surgical Treatment of Diseases of the Mouth, Throat, Nose, Ear, and Eye By THOMAS H ODENEAL, M D, Otologist, Rhinologist, Laryngologist, and Ophthalmologist to the Beverly Hospital, Massachusetts London. H K. Lewis and Co. 1926 Pp 428 17*s*

THIS is an attempt to describe the diagnosis and treatment of the diseases of all the special regions enumerated in the title in such a way as to be "of material assistance to the young specialist and to the general practitioner" Unfortunately, the attempt cannot be said to have succeeded, though there is plenty of sound advice scattered through these pages, and though the dogmatic tone of the author is proper in so concise a book, the treatment throughout is described in too short and summary a manner to be of any real value to the general practitioner, still less to the young specialist To take one instance out of very many, it is not worth while to mention salivary calculi at all when the only thing said is that "calculi in these ducts or glands give the patient a sense of a foreign body or a lump in the floor of the mouth", nothing is said about their treatment. If the short notes on rare conditions, such as Thornwald's disease and laryngocele, had been omitted, more space might have been found for discussion of the commoner and more important affections The writing might have been more carefully revised; the recommendation of 30 per cent carbolic acid in glycerine as ear-drops, which is mentioned twice, is surely intended for 30 gr to the ounce, for this purpose carbolic acid is seldom used at more than the latter concentration

---

BODILY FUNCTION FOR THE LAYMAN

Sex and the Young Pp. 190. 6*s* 6*d* *The Human Body and its Functions* Pp 224 6*s* 6*d*. Both by MARIE C STOPES, D Sc London Gill Publishing Co 1926

THOSE who are not irritated by Mrs Stopes's manner of imparting knowledge will find a great deal of good sympathetic common sense in her contribution to the question of how to teach children about sex It is a matter which has been much discussed in recent years and extravagant opinions one way and the other have not been wanting A while ago there was a rather widespread idea that children ought to be taught about sex as such Practical experience has, we believe, led some of the advocates of direct instruction to change their minds, and Mrs Stopes takes a strong line against this special treatment of a subject which does not occupy the predominant place in the consciousness of children that it is apt to have in adults Sex, she says, should not be taught, children should rather learn it in the ordinary course of learning the elementary anatomy and physiology which she would have everyone know about at an early age, and they will regard it as just as commonplace—or just as miraculous—as the heart or the bowels To provide her ideal introduction to the functions of the body, she has written the Human Body and its Functions as a companion volume All of which is as sane and reasonable as her remarks on the real necessity of allowing school-children plenty of time in the morning to get into a regular habit of opening their bowels, or the disadvantage of making a boy conspicuous by a complete rather than a partial circumcision, or the desirability of having a larger proportion of married teachers and various other similar topics, some of them of the beastly kind which do not often get such frank treatment We have less sympathy with her suggestion that THE LANCET should be taken in the school staff library, nor are Bayliss's "General Physiology" or Marshall's "Physiology of Reproduction" quite the books to recommend to relatively untrained lay people

The Human Body and its Functions contains 22 chapters wherein more attention is paid to function than to details of structure, and function of the systems and organs of the body are discussed in sufficient detail Some would prefer a more objective account to be given to children and young people, without comments pointing the moral—for example, that it is "wickedly cruel to leave a baby in a perambulator with the hood over it in such a way that the glare of the sky goes straight into the baby's eyes" Others may welcome a book which combines instruction in anatomy, physiology, principles of hygiene, and with hints as to conduct. The book is well produced and the illustrations are clear the year there has been a slight rise in the malnutrition figure, from 5.9 to 6.1 per cent. The assessment of malnutrition, however, is so dependent on the personal factor that changes in the examining officer will vary the figure considerably. Another important factor mentioned is over-fatigue but this, again, is difficult to estimate and even medical opinion is divided as to the amount of sleep required in various ages. To allow a child to have its sleep out is perhaps best, but the condition of many homes and streets makes it impossible for children to get enough sleep. At the aural clinic ionisation is still carried out with very successful results. At the throat clinic, after operation for tonsils and adenoids, detailed instructions are given, and children practise breathing exercises at the remedial exercises clinic. There are still no special schools for the educable feeble-minded in the borough.

Leeds.

Dr Algernon Wear presents an account of the school medical services, and to this is appended the report of the organiser of physical education and that of the chief inspector of the employment of children; the whole is an excellent survey of the work for child welfare. The ascertainment of defects appears to be very thorough and the children in special schools are inspected every two years. For treatment there is a good provision of clinics though the rapid increase of work calls for enlargement and extension of many of them. There has been a substantial decrease in ringworm and scabies cases, but a marked rise in malnutrition, largely due to unemployment in the area. Open-air school accommodation is very limited, but a school for pre tuberculous children is to be opened this year. Dr Wear alludes to the problem of the physically defective children who are also mentally retarded. Such retardation is, in fact, much more frequent than is generally supposed, it varies in degree from mere backwardness to the severe mental defect sometimes found with cerebral paralysis. Children who are severely crippled and only slightly subnormal can be dealt with, as Dr Wear says by putting them in an appropriate class in a special physical defective school. Those who are actually mentally defective present greater difficulty, and from the purely economic standpoint the result of any kind of educational treatment is seldom proportionate to the cost, since few of them are ever made even approximately self-supporting. Dr Wear recognises the need for manual training for elder mentally defective boys; this would afford better prospects of satisfactory and lasting employment. Eighty per cent. of the children in the schools were inspected by the dentists and 44.6 per cent. of those requiring treatment received it. Every child in the nursery schools was examined and an average of 4.6 defects was found in each infant. Competitions for healthy children of various ages were held and were well attended. Valuable research is being conducted on the development or aggravation of defective vision and squint. The scheme is a continuous one and the conclusions are not yet available but its results should, as Dr Wear says, be far-reaching and of the greatest importance to the study of the ophthalmology of the child.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED JUNE 26TH, 1926

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox 165 (last week 150); scarlet fever 1355; diphtheria, 858; enteric fever, 78; pneumonia 587; puerperal fever, 36; cerebro-spinal fever, 10; acute poliomyelitis 10; encephalitis lethargica 17; dysentery 16; ophthalmia neonatorum, 131. There were no cases of cholera, plague, or typhus fever notified during the week.

Deaths.—In the aggregate of great towns, including London, there were 3 (0) deaths from enteric fever, 26 (3) from measles, 4 (2) from scarlet fever, 26 (4) from whooping-cough, 38 (11) from diphtheria, 54 (13) from diarrhœa and enteritis under two years of age, and 37 (7) from influenza. The figures in parentheses are those for London itself.

MENTAL HOSPITAL REPORTS

THE *Glasgow Royal Asylum* had an average of 525 patients resident during 1925, and nearly 50 per cent. of the year's admissions were voluntary boarders. The physician-superintendent draws attention to the fact that only one case of general paralysis was received, which coincides with the general impression that this condition is less frequently encountered than formerly. The death-rate was 8 per cent. The number of patients at the psychiatric out-patient clinic at the Western Infirmary is steadily increasing. The occupational therapy of this institution is well known and a new pavilion has been opened. The central hall is used as an art room for quiet occupations, relieving the congestion of the class-rooms and keeping an atmosphere of quiet in the hall that often induces excited patients to settle to work. A successful sale of work and a Christmas party were organised. Butter has been substituted for margarine and the visiting commissioners note that every effort is made to approximate the dietary to the idiosyncrasies and home conditions of individual patients. The seaside home at Skelmorlie continues to be a useful and popular adjunct to the main buildings. The dentist removed 341 teeth during the year, mostly under local anæsthesia and stopped 32 more. Difficulties in treating mental cases might be anticipated, but have not in fact proved a serious bar to his work.

The *Cheshire County Mental Hospital* at *Parkside* was overcrowded with patients at the end of the year, but the excess has been partly relieved by the transference of some cases to workhouses. The death-rate was the lowest for 25 years (5.61 per cent.); and the recovery-rate showed an advance on that of the previous year, reaching 31 per cent. Post-mortem examinations were held on 63 out of the 70 patients who died during the year. General paralysis and arterio-sclerosis accounted for more than half the deaths. There was some mild influenza and eight cases of dysentery, but no other epidemic disease. 64.7 per cent. of the male patients and 61.9 per cent. of the females were usefully employed last year, and an instructor for the male side has been appointed in addition to the instruction mistress. Eighty-three cases have been taught some form of handicraft, and a gymnasium has been added to the recreation department. Parole has been granted to about 200 patients. Special facilities are available for treating recent cases. Treatment and clinical rooms and verandahs are attached to the admission wards, and the visiting commissioner speaks of the treatment rooms as "models of their kind." Each contains continuous needle and shower baths, a radiant heat bath and a massage couch, and is staffed by skilled nurses. Ultra-violet radiation plant has also been installed, and the medical superintendent reports that the good results following its use have included marked increase of weight, muscular activity and cheerfulness, with slight decrease in blood pressure. Manic-depressive cases have responded the most readily, and mild cases of melancholia and delusional insanity with irritability have also benefited. The treatment is contra-indicated in melancholia and seems inactive in dementia præcox. A good deal of valuable research work has been carried out in the laboratory, including observations on blood pressure in varying mental states, the sudorific reactions of the skin, the value of ovarian extract in the insanities of child-bearing and the intestinal flora of patients with diarrhœa. Seven more nurses obtained their final certificates during the year, and it is welcome news that the superintendent is finding that a better and keener type of probationer is now entering the service. A sister tutor has been appointed. General paralytics have been treated with malaria, and two cases have been discharged and continue well, while seven appear distinctly improved. We characterised this institution last year as "one of the most up-to-date and progressive in the kingdom" and it is clear that the staff are not resting on their laurels rather increased than decreased the chances of contamination In confirmation, it is pointed out that the dirtiest of the 28 samples examined was a bottled milk of this type and that five other samples of such bottled milk occupied very unfavourable positions in the list Of 49 milk samples taken at the railway stations no less than 11 contained added water, varying in amount from 2 5 to 29 per cent

The Schick test has been used for scarlet fever admissions to hospital It was found that 15 out of 19 children under 5 gave positive reactions; 18 out of 43 at the age-period 5 to 10, 5 out of 16 at ages 10 to 15, 2 out of 4 at age-period 15 to 20, and 1 out of 4 at ages over 20. Only one of seven new probationer nurses gave a positive reaction, and she was immunised One midwife was reported to the Central Midwives Board during the year for failing to notify a case of ophthalmia neonatorum, and her name was removed from the roll The case in question came under treatment when 15 days old, and the results were very serious Some improvement in housing has been brought about by the erection during the year of 98 houses of site No 1 There is still much need for more municipal building, for there is much overcrowding

Doncaster R.D.

Dr A B Dunne laments the spoiling of his beautiful district by industrial invasion with its pillars of smoke by day, but no doubt derives satisfaction from the fact that the industrial communities are the best housed in it Out of 37 parishes about 6 have been converted from agricultural to industrial communities When the projected colliery in Awkley parish has been sunk the inner ring of collieries surrounding Doncaster will be complete "The standard of living is high and there is an appearance of well-being and prosperity about the colliery villages" Since the war a large glass industry has been established at the old village of Kirksandall, up to which point the river Don is tidal As predicted in 1911 by the late Mr W H Pickering, H M Inspector of Mines, districts in the Dearne Valley and in Askern have been flooded by subsidence During the last five years the colliery companies and glass manufacturers have erected over 2000 excellent houses on town-planning lines The change over from rural conditions has meant a tremendous influx of children for whose accommodation large schools on modern lines have been built The industrialised districts are provided with modern sewage disposal works There is no maternity hospital in the district, but difficult cases have until now received attention at the Doncaster Royal Infirmary Recently the county council have arranged for the admission of special cases to a private maternity home There are sufficient midwives, but they are somewhat unevenly distributed Dr Dunne reports that "a healthy public opinion regarding child welfare is being formed" During the last five years there have been 13 cases of enteric fever with 3 deaths, 16 cases of puerperal fever with 3 deaths, 6 cases of ophthalmia neonatorum with 2 deaths and no impairment of vision among survivors, and 2 cases of encephalitis lethargica with 1 death

Swinton and Pendlebury U D

Dr H C Mulholland reports a gradual improvement in the milk-supply of the district, but also mentions that some milk sold in bottles is no better than any other He looks to public opinion to secure a higher standard of cleanliness in milk and food matters Flooding of part of the area has occurred through the subsidence of sewers from mining operations, and is being dealt with by reconstruction of the sewers A nuisance has been caused by the refuse tip and a salvage plant is to be erected to deal with all the refuse In the last quarter of the year there was an outbreak of typhoid fever, consisting of six cases in one house The origin was a missed case, a man of dirty habits, but it could not be ascertained how he had contracted the disease Housing shortage is considerable, and 51 cases of gross overcrowding were reported during the year The number of persons living more than two to a room increased from 2344 in 1911 to 3165 in 1921 Since 1921 the Council has built 230 houses under the Addison scheme and 208 have been put up by private enterprise under the subsidy scheme Negotiations are in progress for the purchase of two estates, of 16½ and 63 acres, for further housing Unhealthy areas, including 274 houses and housing 1428 persons, are waiting to be dealt with Dr Mulholland insists on the need for reinspection of houses which have been rendered fit, in order to prevent damage by careless tenants, as in certain cases renovation has had to be repeated within two years

Stafford.

Dr J T Macnab reports that two milk producers have been induced to supply Grade A milk and that the corporation has supported them by purchasing this milk for the child welfare centre and the isolation hospital Housing conditions have been improved but Dr Macnab estimates that another 200 houses are needed at present The corporation has purchased more land and contemplates the erection of 140 houses thereon There are still houses in the borough with no sinks and without an inside water-supply A matter requiring attention is the abolition of the slop-water closets Two men are kept constantly employed in dealing with stoppages in them They number 2283

SCHOOL MEDICAL SERVICE

IN the following table the figures given in the reports from Gillingham, Bootle, and Leeds are set out

Name of town	No on roll.	Av elem school attendance	No of routine children examined	No of special examinations and re inspections	Percentage of children found on routine examination requiring treatment *
Gillingham	7,440	6,775	2,498	1,306	16·0
Bootle	12,176	10,887	3,831	11,405	33 3
Leeds	71,920	—†	21,512	62,830	26 4

* Excluding uncleanliness and dental defects. † Not given

Gillingham

Dr W. A. Muir, M O H and S M O, in introducing his report, discusses the prevention of mental deficiency and briefly states his views that sterilisation in selected cases, combined with segregation, would go far towards reducing the number of cases Whether this is true or not there is little doubt that many of the feeble-minded are enabled to become wage-earners by suitable training in special schools and institutions Such accommodation is far from adequate throughout the country, and in Gillingham alone there are 24 known mentally defective children in elementary schools The fight against uncleanliness continues to absorb much of the time and energy of the staff, and Dr Muir sounds a warning note about the still high percentage of verminous children (16 per cent) The evil effects of dust, both from the economic and the medical point of view, are well known, and many areas have had good results from applying dust-allaying preparations in their schools Such an experiment is being tried in three of the Gillingham schools An orthopædic scheme is under consideration and may soon be working Open-air classes are held in a few schools The net cost to the ratepayers for the school medical service during 1925 was ¾*d* in the £

Bootle

Dr. F T H Wood presents his usual interesting and well-arranged report He is fortunate in his committee and draws attention to the great help he has received from them The cost per child was about 4s 9*d* gross and 2s 4*d* net, this being a decimal part of a penny rate (1 3 gross and 0 65 net) During

The Services.

ROYAL AIR FORCE MEDICAL BRANCH

NEW PAY AND CONDITIONS.

As was announced in THE LANCET last week, improvements have been made in the conditions of service and emoluments of medical officers of the Royal Air Force with the intention of attracting into the Service the best type of medical man The duties of a medical officer in the Air Force include not only the prevention and treatment of ordinary diseases and of those to which the personnel of the fighting services may be liable, but the special study of the mental and physical stresses on the aviator

Entry being by means of a short service commission for three years, extensible to five, the officer is not committed to a permanent career Permanent commissions are granted by selection from those holding short service commissions, and every entrant has a 50 per cent chance of permanency Short service officers passing to the reserve after five years will receive an increased gratuity of £700, but the gratuity after three years' service remains at £350

Increase of Pay

Increases of pay of from 2s. to 11s a day have been granted in all ranks above Flight Lieutenant and the scale in force from July 1st, 1926, will be seen from the following table The rates shown in the first column are "standard" and are liable to the extent of 20 per cent. to periodic variation according to the cost of living The current rates are shown in the second column, and in the third the total yearly emoluments at current, rates if allowances are drawn in cash in lieu of provision being made in kind The cash allowances included are at current home rates for unmarried officers. Married officers over 30 years of age receive higher allowances

Rank	"Standard" rate of pay per diem			Current rate of pay per diem			Current rate of pay and allowances per annum
	£	s	d	£	s	d	£
Flying Officer	1	4	0	1	2	6	557
Flight Lieutenant	1	6	0	1	4	6	608
Flight Lieutenant after two years in the substantive rank	1	8	0	1	6	6	645
Flight Lieutenant after four years in the substantive rank	1	10	0	1	8	4	678
Squadron Leader	1	14	0	1	12	2	760
Squadron Leader after two years in the substantive rank	1	18	0	1	15	10	827
Squadron Leader after four years in the substantive rank	2	0	0	1	17	10	864
Squadron Leader after six years in the substantive rank	2	4	0	2	1	6	931
Squadron Leader after eight years in the substantive rank	2	8	0	2	5	4	1001
Squadron Leader after ten years in the substantive rank	2	10	0	2	7	4	1037
Wing Commander	2	15	0	2	12	0	1133
Wing Commander after two years in the substantive rank	2	17	0	2	13	10	1166
Wing Commander after four years in the substantive rank	3	3	0	2	19	6	1270
Group Captain	3	10	0	3	6	2	1463
Air Commodore	4	0	0	3	15	8	1691
Air Vice-Marshal	5	0	0	4	14	6	2100

Promotion to Flight Lieutenant occurs after two years' satisfactory service and to Squadron Leader after ten years' service, reducible to eight years in exceptional cases Promotion above Squadron Leader is by selection, subject to minimum periods of service The Director of Medical Services, if as at present an Air Vice-Marshal, will receive the pay and allowances of his rank.

Retiring Allowances to Permanent Officers.

The gratuities issuable to permanent officers have been increased to £1500 after 10 years' service and £2500 after 15 years' service After 20 years' qualifying service officers are eligible for retired pay, the amount depending on age and length of service and in the case of senior officers on rank. The maximum rates of retired pay are, subject to certain conditions, as follows, the rates for Air Commodores and Air Vice-Marshals being new.—

Rank	"Standard" maximum rate	Current maximum rate	
	£	£	s
Air Vice Marshal	1010	954	10
Air Commodore	950	898	0
Group Captain	900	850	10
Wing Commander	600	567	0
Squadron Leader	500	472	10

Various Improved Conditions

Officers who have held resident appointments in recognised civil hospitals for not less than one year (of which half may be spent as non-residents) will be antedated one year for purposes of seniority promotion, retired pay, and retiring gratuity, the valuable experience provided by hospital appointments being thus recognised Every officer on entry will receive eight weeks' special instruction in the medical problems connected with flying and other Air Force duties, while with a view to enable the officer to take general or special courses, whether at civil or service medical schools, study leave up to nine months in all will be allowed during the first 16 years of service The promise should be noticed that as far as possible officers will be allowed to take such study leave when convenient to themselves and to choose their subjects and places of study

The Nursing Service

The Air Ministry also announce a revised scheme of emoluments, including pay and retired pay, for members of Princess Mary's Royal Air Force Nursing Service A permanent member of the Service will now be permitted to retire with a gratuity of £250 after ten years' service and £400 after 15 years

ROYAL NAVAL MEDICAL SERVICE

Surg Capts R J MacKeown and F H Nimmo to be Surg Rear-Admirals, and are placed on the Retd List at their own request

Surg Capt R StG S Bond to be Surg Rear-Admiral

Surg Lt. C H Savory to be Surg Lt-Comdr

ROYAL ARMY MEDICAL CORPS

Col F F Carroll, half pay list, retires on retd pay

Maj R G H Tate retires on retd pay, and is granted the rank of Lt-Col

J W Kendall to be temp Lt

MILITIA

Capt H C Bazett to be Maj

ROYAL AIR FORCE

Wing Comdr A W Iredell to be Group Capt

Squad Leaders W A S Duck and A E Panter to be Wing Comdrs

Flight Lt. H E H Tracy to be Hon Squad Leader

Flying Officer H W Corner is promoted to the rank of Flight Lt.

NORTH PERSIAN FORCES MEMORIAL MEDAL —Dr W Corner, O B E, Iraq Health Service, has been awarded the North Persian Forces Memorial Medal for the year 1925 for his paper on Malaria in the Kirkuk Division of Northern Mesopotamia during 1923, published in the *Transactions* of the Royal Society of Tropical Medicine and Hygiene (1925, vol. xix, Nos 1 and 2) This is the third award of the medal, which is awarded annually for the best paper on tropical medicine or hygiene published in any journal during the preceding 12 months by any medical officer, of under 12 years' service, of the Royal Navy, Royal Army Medical Corps, Royal Air Force, Indian Medical Service, or of the Colonial Medical Service, provided that a paper judged to be of sufficient merit has appeared

THE LANCET.

LONDON: SATURDAY, JULY 10, 1926.

THE STANDARDISATION OF INSULIN.

THE discovery in the laboratory of some new therapeutic agent at once opens up a whole series of important problems both from the clinical and the industrial point of view The control of a powerfully active substance when made by one laboratory on a small scale and tried on a few patients is a relatively small matter owing to the few persons engaged in the whole process As soon however, as the substance is manufactured on a large scale and is handed out to the world at large difficulties begin to creep in. In the first place, there is the question of the transference of a small scale operation to a large scale. This is very often a matter of great difficulty, and the efficiency depends on the skill and organising power of the manufacturers. The standardisation however, is a matter which can only be undertaken by those persons who have experience in biological tests. If all the preparations made by different manufacturers are to be of the same strength a central controlling body is a necessity. If all preparations are not of a standard strength disastrous results may occur when patients are treated with material emanating from different firms The Medical Research Council in England early assumed control of the standardisation of insulin in this country, and evolved a highly efficient organisation whereby every batch of insulin bought on the English market had to undergo standardisation. It is obvious that if this uniformity is desirable for any one country it is also desirable for the world at large, and the adoption of some international standard unit of activity becomes necessary The International Conference of the Health Organisation of the League of Nations appointed a special committee, under the chairmanship of Dr H H DALE, to deal with this matter, and an international standard has now been instituted with the result that all preparations of insulin have the same potency.

A full account of the steps taken to this end is contained in a report[1] recently published to which Dr. DALE contributes an introduction describing the method whereby the international unit was fixed. 500,000 units of insulin were collected from the most important manufacturers of insulin throughout the world. These specimens were pooled and converted into a uniform dry, stable powder in Dr. DALE'S department at the National Institute of Medical Research at Mount Vernon. As a result of experiments in several laboratories the unit of insulin was defined by the Insulin Committee of the University of Toronto as "the activity contained in 0 125 mg. of the international standard preparation." The Conference then placed on record the following unanimous recommendations: 1 That the dry preparation of insulin hydrochloride, prepared by the Medical Research Council of Great Britain at the request of the Edinburgh Conference, should be accepted as the international standard preparation of insulin. That 1 mg of this standard contains 8 units of insulin (or 1 unit = 0 125 mg) as provisionally defined by the Insulin Committee of the University of Toronto 2 That this standard preparation be kept on behalf of the Health Organisation of the League of Nations by the Medical Research Council who will undertake to test the permanence of its potency from time to time 3 That samples of this preparation, weighing 0 100 g each, be sent to some responsible organisation in each country (such as an Insulin Committee or a Government institution), who will undertake further distribution to testing laboratories. In those countries in which no suitable organisation for this purpose exists, samples of the standard will be distributed by the Medical Research Council after consultation with the Insulin Committee of the University of Toronto, or, in case this Committee be discontinued, with one appointed by the Health Committee of the League of Nations 4 That each testing laboratory should prepare a standard of its own, and should compare the potency of this with the sample of the international standard placed in its hands for this purpose. When the latter is exhausted, further comparisons with the international standard should, where possible be undertaken by the responsible authority for the particular country. 5 That either of the following methods, of which full details are set out in separate reports, be considered as suitable for the bio assay of insulin:—

(a) *Methods Depending on the Effect of Blood-sugar: First Method*—Varying quantities of insulin that are less than the convulsive dose are injected subcutaneously into rabbits of about 2 kg. body-weight, from which food has been withheld for 18 to 24 hours and the average of the blood-sugar percentages over a period of five hours after the injection is subtracted from the blood-sugar percentage immediately preceding the injection. The number of units of insulin present in each c cm. of the preparation is then calculated by use of a formula. Each rabbit used in the assays is tested at suitable intervals with a standard preparation which is periodically compared with the international standard.

Second Method.—Alternatively, one half of a series of rabbits receives, in each case, an injection of a half unit of the standard preparation per kg, and the other half receives, on the same day, the dose supposed to be equivalent of the sample under test. The percentage fall of the blood-sugar content over a period of five hours is determined as above. A few days later the determinations are repeated on the same series of rabbits in this way that the rabbits previously receiving the standard preparation now receive that under test and vice versa.

From the relation between the falls of blood-sugar content produced on the one hand, by the standard preparation and, on the other hand, by the sample under test, the true activity of the latter in units per c.cm. can be calculated.

(b) *Method Depending on the Incidence of Symptoms in White Mice.*—The assay is carried out by comparison with a standard preparation injected simultaneously with the unknown sample on an equal number of mice from a common stock. The onset of convulsions or collapse is used as the end-point of the reaction and a mouse dose is the quantity producing convulsions (or collapse) in half the number of mice injected. During the test the mice are kept in an incubator at a uniform temperature of not less than 30° C.

---

[1] The Biological Standardisation of Insulin including Reports on the Preparation of the International Standard and the Definition of the Unit. League of Nations Health Organisation, Geneva 1926 Agents in Great Britain: Constable and Co

The Report contains articles on the standardisation of insulin in the most important centres in the world Prof J J R MACLEOD and Mr M D ORR describe the method employed by the Insulin Committee of the University of Toronto in standardising their insulin There follow accounts from other institutions—namely, E R Squibb and Sons' Research and Biological Laboratories, the Lilly Research Laboratories (Dr G H A CLOWES), the Nordisk Insulin Laboratorium and the Laboratory of Zoo-physiology of Copenhagen University (Dr A M HEMMINGSEN and Prof A KROGH), the Wellcome Physiological Research Laboratories (Dr J W TREVAN and Miss ELLEN BOOCK), and the National Institute for Medical Research, London (Mr H P MARKS) It is a satisfaction and pleasure to note that the Medical Research Council has played a paramount part in the adjustment of delicate international negotiations The practical importance of their successful outcome is far-reaching It implies, for example, that a practitioner will now be able to permit a diabetic patient to travel abroad in the confidence that he will be supplied with insulin exactly corresponding in potency to that which keeps his blood-sugar in check at home It may be hoped that this International Report will be the first of many, and that other hormones which at present are sold by commercial firms without any control at all will in the near future come under the same intelligent control as insulin

---

PUBLIC HEALTH IN CHINA.

IT is an interesting fact that in the social and political welter in which China now finds herself there should be arising in that country the strongest manifestation that has yet been made of a desire to promote public health It may be presumed that the distressing circumstances in which the Republic has been abiding for some years have accentuated for the inhabitants generally that struggle for existence which probably is harder in China than in any other country in the world, for these circumstances have not interfered in any regular way with the growth of population Human fecundity is there a marked feature, the average family of every married couple is from four to five children, and the adult unmarried are rare That much can be surmised, though there are no trustworthy statistics from which either the total population or the mortality-rates can be estimated Anyhow a vast and increasing mass of people is living in China in much the same way as their forefathers have done for over a thousand years, and families are being reared at an incredibly low cost, for, when droughts and floods are absent, sufficient food can be obtained for all, though obtained only as a return for unceasing toil With such a situation the need for public health measures is imperative, and this need is now being felt as much by the Chinese themselves as by the various populations resident in China but coming from countries where Western society has laid down scientific standards and has adopted measures of sanitary legislation

We publish in another column a communication furnished to us by Surgeon-General S H CHUAN from the Ministry of War at Peking, in which that distinguished official pleads eloquently for the allocation of the money received by the British Government in the form of the Boxer Indemnity to the promotion of public health in China We pointed out recently how right and just such an allocation would be, when publishing an earnest appeal to that effect from two representative leaders of Chinese medicine, Dr S M HOW, and Dr W L NEW, and in the same issue of THE LANCET (see THE LANCET, May 1st, 1926, p 946) Dr JOCELYN SMYLY, of the Peking Union Medical College, described the whole medical situation in China as justifying such an employment of the sums which it has been decided by our Government to hand back to China This view is endorsed by Surgeon-General CHUAN, who points to the high infantile mortality and the recurring epidemics to prove how dire the need is for an organised public health service, while the good effect of such a service can be demonstrated by the far better health conditions which prevail in the different foreign centres where small sections of the population have fallen under the influence of Western knowledge Practically wherever instructed medical diagnosis can go in China the prevalence is found of tuberculosis, dysentery, and trachoma, while venereal disease is a problem in all the urban centres Here further frequent epidemics may rage unchecked in the absence of any regulations as to notification or segregation These facts, patent to every foreigner living in China, have forced themselves on the attention of many Chinese, especially those who have received their education away from home or have benefited in China by foreign tuition And medical opinion is growing in force The medical profession in the Empire as represented by foreign trained graduates is enlarging, and a modern tendency towards intensive study of special diseases is springing up with it This means that a certain number of Chinese medical men are now focusing their attention on public health, and everywhere these men find the call for improved sanitation This fact escapes the vast Chinese populace that lives eternally overcrowded, with its homes hermetically sealed But the first remedy for such a condition of things that jumps to the Western mind would not work efficaciously in China—namely, education along general lines In Great Britain we see how, as the populace grows more enlightened, the teachings of science are more readily accepted and public coöperation is more promptly forthcoming But things would work in no such definite way in China, where for the time being kindly and authoritative administration cannot be replaced by argumentative conversations in which all-important scientific issues would get complicated by political prepossessions What is really required is the improvement of medical education in China, working hand in hand with the awakened Chinese doctors

Medical education in China has been so far conducted on philanthropic and altruistic lines, and except for the University in the colony of Hong-Kong has been almost entirely in the hands of medical missionaries, while the Peking Union Medical College, now administered by the Rockefeller Foundation, was founded by British and American missionaries The number of graduations from foreign medical schools in China amounts to about 200 annually and a similar number of medical graduates return each year from schools abroad This band of foreign-trained graduates conform to a reasonably good standard, and they would form admirable auxiliaries if the money available from the Boxer Indemnity Fund were used to promote a public health scheme Such a scheme, moreover, would have no caste disabilities to over-ride or evade, and would be dealing with a docile population which already freely accepts, for example, the practice of vaccination and the antitoxin treatment of diphtheria At the instance of the Chinese Medical Missionary Association, a Council on Health Education was formed some years ago, and the members under the leadership of Dr W W PETERS, an American citizen, have carried out health campaigns by means of the cinema, public meetings, and pictorial posters, the work has been enthusiastically welcomed in the towns where the demonstrations have been made A public health station in Peking, established through the Rockefeller Foundation by Prof J B GRANT, has already gained much practical experience upon which to found future work and the field for that work is expanding with the expansion of factory activities in the Empire, already factory laws are needed, and a public health system is obviously necessary for the construction and maintenance of legislation Lastly, there is now in China a National Medical Association which publishes a monthly journal in Chinese and English, and which has been referred to in these columns as a rallying centre for modern Chinese medicine We have received this week a Memorandum from the Association which is being presented to the British Boxer Indemnity Commission recapitulating with the force of local inspiration all the above arguments The Chinese are helping themselves, and they should be helped Therefore, again, we put forward the earnest hope that substantial sums of money, over such a period as the available total permits, should be allocated from the Boxer Indemnity Fund to the foundation of a public health scheme for the Chinese Empire

◆

COLOUR-BLINDNESS

THE facts of colour-blindness, so far as they are of importance in the affairs of life, have long been known, but their scientific explanation is a ground over which theorists continue to fight without any apparent prospect of coming to an agreement The supporters of each main theory—the Young-Helmholtz, the Hering, the Edridge Green—are accustomed first to state their theory and then to cite an array of experiments with colour-blind subjects in support of it, numerous enough to carry entire conviction to the mind of the writer, if not of the reader These theories are mutually antagonistic and the facts, being entirely dependent upon the sensations of the subjects experimented on, are such as can only be verified by psychological investigation—not such, therefore, as are susceptible to ordinary physiological or physical proof It is not to be wondered at that the average doctor, and even the average ophthalmic surgeon, is content when he has been given a practical test to distinguish the degree of colour-blindness which is dangerous for certain occupations and leaves theories to the theorists Nevertheless the scientific importance of the matter is very great, for with the process of colour vision is bound up the process of all vision, the physiological activities of the retina and of the brain Miss Mary Collins[1] approaches the subject in a new way which, while not purporting to prove anything at all, appears to us to promise in the end a real advance All the colour theories are stated while no single one and no combination of them is adopted as a thesis in support of which the writer arrays her facts These facts are limited in number, being all derived from observations taken on ten colour-blind students, all of them belonging to the common class of colour-blinds whose peculiarity is an inability to distinguish red from green Each of these students was subjected to a detailed examination with all the common tests From careful notes of their answers some interesting results emerge, some of them confirming the work of others, but some of them new The colourless or grey band in the green region of the spectrum was confirmed in all cases, and that the breadth of this band varies in different subjects, as Edridge-Green contends, was also established The existence of a second neutral band outside the spectrum in the purple is a new observation not explained by any current theory Edridge-Green's belief that there is a gradation of colour defect is entirely substantiated, but it is contended that certain results obtained are not explained by his theory Many colour-blinds use the expression "reddish-green" or "greenish-red" to describe their sensations, expressions which to the normal person are entirely meaningless Edridge-Green finds a natural explanation for this phenomenon in the case of trichromates for whom on his theory green and red are next-door neighbours in the spectrum Miss Collins found the expression used by ordinary bichromates and suggests an explanation which we confess we find ourselves unable to follow A large proportion of the book is taken up with a detailed record of the application of the various tests, and for practical purposes Miss Collins comes to the conclusion that the Edridge-Green lantern is the best of all It takes time, however, and for ordinary cases many simpler tests were found to be adequate if used with knowledge The Holmgren wool test, if used in the old way, is not to be recommended but with the pale green used as a test skein Miss Collins found that all her subjects substantially failed in their matches, and in this professes disagreement with Edridge-Green, who states that many colour-blinds can easily pass this test without detection What Edridge-Green says, however, is that *three-unit* colour-blinds would usually pass this test with success Since all Miss Collins's subjects were two-unit ones there is really no apparent ground for dispute

The fact is that the interpretation of subjective sensations is so fraught with difficulties that to prove any theory of colour-blindness is almost impossible The available material concerning the relation between retinal structure and retinal function is at the moment quite inadequate for the purpose of throwing any light upon the mechanism of colour vision in man This is, at any rate, the conclusion come to by Dr Julia Bell,[2] who after years of study of the subject has been impressed by the elusiveness of the phenomena of colour vision and by the sadly little we really know about it In this conclusion most of those who have given attention to the subject will concur The first section of her book on colour-blindness, which forms the second part of the Nettleship Memorial volume, is mainly introductory and historical The next section deals with so-called "total" colour-blindness, an affection which, inasmuch as it is usually but not necessarily combined with nystagmus, photophobia, and some degree of amblyopia, has generally been supposed to have little connexion with ordinary dichromatism or "Daltonism" in which none of these defects are typical There seems to be no doubt that in the typical totally colour-blind person the spectrum is identical with that seen by the normal eye under dark adaptation In this respect total colour-blindness differs from another condition characterised by nystagmus, photophobia, and amblyopia—viz, albinism—although in one case of this latter condition (recorded by Rugg-Gunn) there was a definite shortening of the red end of the spectrum Moreover, in both conditions there is definite pathological evidence that the structure of the foveal region of the retina is not normal As to the hereditary factor in the causation of total colour-blindness, although it is undoubtedly a familial disease, the pedigrees collected do not show one case of its occurrence in more than a single generation and only one of its occurrence in more than a single sibship (children of a common parentage). Consanguinity of parents appears to play an important part, as in over one-quarter of the cases it was present, a feature which puts it into relation with retinitis pigmentosa and congenital stationary night blindness , in both of these diseases, however, the inheritance is commonly through several generations.

---

[1] Colour-Blindness with a Comparison of Different Methods of Testing Colour-Blindness By Mary Collins, M.A. Ed, Ph.D, Lecturer on Applied Psychology, Edinburgh University, with an introduction by Dr James Drever London Kegan Paul, Trench, Trübner and Co 1925 Pp 237 12*s* 6*d*

[2] Colour-Blindness By Julia Bell, M.A, M R.C S, L R C P Being Part II of the Nettleship Memorial Volume on Anomalies and Diseases of the Eye (the second volume of the Treasury of Human Inheritance, edited by Karl Pearson F R.S, for the Francis Galton Laboratory for National Eugenics) Cambridge University Press 1926 With 15 plates of pedigrees Pp 267 45*s*

Coming to congenital colour-blindness of the more ordinary type, or "dichromatism," whose most common symptom is a confusion between red and green, the question is discussed whether in these cases, in which apparently only two of the spectral colours can be distinguished by their tints, the two colours seen by the dichromate really correspond to the yellow and blue as seen by the normal person, or whether, as Edridge-Green maintains, they really correspond to the colours most widely separated in the spectrum—namely, red and violet Dr Bell inclines to the former view on the ground that the colour-blind themselves generally recognise yellow and blue without hesitation, whereas with red and green they nearly always hesitate Moreover, in acquired conditions such as toxic amblyopia perception of red and green is always the first to go and the last to return. A confirmation of this view is found in a rare case of unilateral colour-blindness described by von Hippel in which the patient could interpret the sensations experienced with the affected eye by reference to those of the other eye which was normal For his affected eye two colours only occupied the spectrum—namely, yellow and blue Other unilateral cases have been described by various observers but they are very rare. Undoubtedly the most valuable part of Dr Bell's book is not her criticism of the theory of colour-blindness, but her collection of pedigrees illustrating the hereditary nature of the condition It has been repeatedly stated on theoretical grounds that for colour-blindness to become manifest in women the father must be colour-blind and the mother must also be a carrier (i e , she must have had a colour-blind parent), and further, that all the sons of a colour-blind woman must be colour-blind This does not turn out to be true without exception, but it does hold good in a great majority of the 91 cases collected Colour-blindness belongs to that group of inheritable diseases which is mainly manifested in males and transmitted by their unaffected daughters, but not by themselves directly to their sons Of the 235 pedigrees given 35 were collected by Nettleship The volume marks a progress in the young science of heredity to which Nettleship, during the latter part of his life, made such important contributions

◆

ÉMILE COUÉ.

Émile Coué, whose death was announced at the beginning of the week, was a singular and sympathetic figure He had practically no scientific equipment, and does not seem to have been at all well read in either philosophy or psychology, but there can be no doubt that from ministrations along his simple formula many people widely differing in physical and mental qualities received benefit, though we have seen no facts or even surmises as to the permanency of the improvements During his visits to this country he found admirers as well as scoffers, but there was no hostility to the man, for Mr Coué's charming and parental manner, which aroused in his subjects a feeling of delightful dependence, also disarmed anything like venomous criticism A few reflections which were offered by English psychologists with a view to check a public enthusiasm that might have been mischievous constitute all the effort that was made on this side of the Channel to set up any scientific estimation of his theories, and the general conclusion was arrived at that any process inducing a belief in cure, under whatever disguise it might appear, would help considerable groups of nervous sufferers, and might influence the progress of bodily disease

Annotations.

"Ne quid nimis"

THE BIRTHDAY HONOURS

As had already been foreshadowed publicly, the postponed list of Birthday Honours does not include the name of many scientific or medical men Two medical men have received knighthoods, Sir Alexander MacCormick, the well-known consulting surgeon at Sydney, receives a K C M G , and Mr Alfred H Evans a civil knighthood, and Mrs Scharlieb, consulting gynæcologist to the Royal Free Hospital, receives the D B E Major-General R S Hannay, Deputy Director Medical Services, Southern Command, and Surgeon Captain R St G S Bond, R N , receive the C B Dr J O Shircoe, Director of Sanitary Services in Tanganyika, is appointed C M G Mr Ernest Clarke is appointed C V O , and Colonel G W Heron, Director of Department of Health, Palestine, receives the C B E In the Military Division of the Order of the British Empire Miss M D Knapp, chief lady superintendent, Queen Alexandra's Military Nursing Service in India, is appointed C B E , and Lieut -Colonel H R Brown, I M S , Captain William Bligh, M D , R A M C, Major J W Malcolm, R A M C , and Dr D M. Macphail, Dr W M McDonald, Dr F E Whitehead, of the Colonial Medical Service, are appointed O B E The same honour is awarded to Major William Egan, R A M C , Assistant Director of Medical Services in Scotland , Major C H H Harold, M D , Assistant Instructor in Hygiene, Aldershot , and Lieut -Colonel C E Steel and Major W. C Lowe, of the Royal Army Veterinary Corps Mr W G Hunter, Deputy Accountant-General of the Ministry of Health, is appointed C B E , and among the Indian awards Prof A. K Dalal, of the Grant Medical College, Bombay, is given the O B E , the M B E being awarded to Mr A G Butt, of the Office of the Director of Medical Services , Major J. H A Donnelland, resident medical officer at the Jamsetjee Jeejeebhoy Hospital; and Major H C Craggs, I M S Lieut - Colonel T W Harley, I M S , district medical and sanitary officer and superintendent, Medical School, Madura, Madras, receive the C I E Major H W V Cox, civil surgeon, Punjab, receives the I S O , while the Kaisar-i-Hind medal is awarded to Miss F A Hodgson, superintendent of Lady Minto's Indian Nursing Association , Miss Agnes Scott, M B , the secretary of the Countess of Dufferin's Fund , Dr J D O'Donnell, chief medical officer of the Kolar Gold Fields , and Major J A H Holmes, surgeon to the British Station Hospital, Quetta

The majority of those receiving titular honours are rewarded for political and public services, but two of the new knights represent the influence in the development of the health of the nation which is exercised by sport and games, an influence that is so freely endorsed by the Royal Family Sir George Rowland Hill, Chairman of the Greenwich Conservative Association, is largely responsible for the fine and orderly expansion of Rugby Union football as a national sport, while Sir Francis Lacey has been for a long generation the untiring secretary of the M C C In this capacity he has been the executive officer in a complete transformation of the headquarters of cricket, as well as the politic adviser to succeeding presidents and committees, in whose hands there have lain over and over again responsibilities of national and even international significance

UNILATERAL PHRENIC PARALYSIS.

We publish elsewhere in this issue an admirable example of the way in which the deductions of accurate clinical observation may be confirmed and amplified by laboratory experimentation Last year we published a paper by Sir Charlton Briscoe pointing out that paralysis of one half of the diaphragm was commoner than the uncertain radiological signs which it exhibits had led us to suppose and that the main cause of this paralysis was simple mechanical pressure on one phrenic nerve Lady Briscoe now gives a summary account of her experimental examination of the effects of pressure on the phrenic, fuller details will be found in the current *Journal of Physiology* (vol lxi, p 353) She shows in the first place that the normal discharges of the respiratory centre can be prevented from reaching the diaphragm by a degree of pressure which we may believe can be achieved in the living body, without much difficulty, through a growing tumour or an enlarging gland, for it is less than diastolic arterial pressure The blocking effect depends on at least four variables · the degree of pressure, its duration the size of the compressed nerve, and the length of it which is compressed A weight, for example of 400 g achieves in ten minutes the same result as 80 g in 90 minutes; large nerves, such as the brachial plexus, are more resistant than small nerves, such as the recurrent laryngeal Just how the effect is produced needs more explanation: Lady Briscoe failed to find any very definite histological changes The importance of the time factor suggests that conduction fails when something viscous has been squeezed out of place; the deformation, whatever it is, is easily corrected, for the nerve begins to conduct again almost at once when the pressure is taken off. The diaphragm is commonly in postural tone and pressure blocks the motor impulses before it blocks those which maintain tone, and when the pressure is released after producing complete block, motor impulses get through first If the nerve is paralysed quickly with a big pressure, loss of tone is complete and the dome of the corresponding half of the diaphragm rises high in the chest It is interesting to note that the displacement is not nearly so great when a small pressure produces the same degree of block in a longer time, suggesting that the diaphragm has within itself a certain capacity of compensation for the loss of central impulses Lady Briscoe also records the rather unexpected result that the stronger discharges from the respiratory centre produced by CO_2 dyspnœa or stimulation of an afferent nerve will not force a block through which the weaker impulses of quiet respiration can not pass, the implication is that the diaphragm is not concerned in excessive respiration

Recognition of the fact that pressure reduces conductivity slowly and does not necessarily abolish it suddenly, explains many of the obscurities which are seen on X ray examination In complete paralysis of one phrenic, there is inverse movement—i e, the sound half of the diaphragm descends and the paralysed half is pulled up mechanically Partial blocking of the nerve produces partial paralysis of the muscle; moreover it delays the onset of each contraction and has less effect on tone than on motility. Hence, varying degrees of pressure can produce almost any radiographic picture, and, since partial is commoner than complete block, many cases yield dubious results which are open to more than one interpretation. Lady Briscoe's inquiry has, however, gone a long way towards clearing up the difficulties

KLEPTOMANIA AND DISHONESTY.

THE summer sales if we may believe the statement of a correspondent responsible for the conduct of a large millinery establishment offer a happy hunting-ground for the kleptomaniac But, apart from the special opportunities offered at these orgies of bargaining now in full celebration, there are perpetual instances occurring in the police-courts of thefts from counters when the defence of mental instability taking the form of an irresistible impulse, is put up Having regard to the wide authority there is for the belief that in some instances these thefts are the vagaries of irresponsible people, the fact remains that the majority of the cases are an exhibition of flat dishonesty Dr Antheaume in *Le Matin* writing on an epidemic of thefts perpetrated by women from the counters of large shops, went as far as it is possible to go to explode the theory of irresponsibility by one of his arguments which it is difficult to get over "Can we grant," he asked "an overpowering impulse in an otherwise honest person as the reason for thefts from the display counters, when there are no instances extant of the goods being returned on the impulse disappearing?" The question is pertinent, for in a good many cases which have formed the subject of legal inquiry the accused person has been found in possession of a store-house of stolen goods On the other hand, this very occurrence has been used as a proof of the mental instability of the accused it being argued that no one really sane would acquire things without putting them to any use—if unsound to this degree why not unsound to the point of pathological kleptomania? The whole story, however, is not so simple That a pathological impulse to steal really exists is well known Maurice Healy describes a case in *Mental Conflict and Misconduct* with an interesting account of his findings as to the unconscious motivation of the impulse, and patients occasionally come for treatment of the condition before they have fallen into the hands of the police In forming a judgment concerning a particular case the skilled investigator would be guided to a great extent by the existence of other symptoms, for the impulse is, as a rule only one detail in a larger picture The patient's description of the impulse is important, for it would be expected to produce the same state of mental tension, when resisted, that is known to occur when other pathological compulsions or inhibitions are in question; and this state is not likely to be described by the merely dishonest delinquent who pleads irresponsibility In the absence of skilled investigation however the plea of "kleptomania" can carry little weight and there is no doubt that it is often advanced when the pathological basis for it is slight or non-existent.

A DEVICE FOR PURIFYING VACCINIA VIRUS.

THE difficulties met with in attempts to procure filtrates of the vaccinia virus through filters of the Berkefeld or Pasteur-Chamberland type have been recorded by numerous workers whose experiences are summarised in the report to the Medical Research Council published last autumn by Dr. M H Gordon[1] The virus appears to be adsorbed by the filter-candle The fact that this virus is not a filter-passer has been confirmed by recent observations made by Dr Myers Coplans who, in the *Journal of Tropical Medicine and Hygiene* of April 15th and May 1st describes an alternative device for separating it in quantity from epithelial and other tissues This device is new and ingenious, taking the form of slow wick-syphonage; it is an outcome of the author's experience in connexion with the purification of water in the field It is based on the well-known physical phenomena of capillary attraction Dr. Coplans points out that if one end of a cotton or asbestos wick is dipped into water, the water rises throughout its substance, though, owing to imprisoned air, the rate of rise may be very slow. When the water has risen to a sufficient height in the wick to permit the adjustment of an overhang, dripping takes place from the free end Columns of liquid have united within the fibres and the action of flow and discharge from the free end of the wick is essentially the result of internal wick-syphonage If, as a preliminary, the wick be plunged into boiling water, the contained air—a potential air-lock—is expelled and the wick immediately becomes thoroughly moistened The wick may then be gently pressed to expel the excess of water. If the moistened wick be now arranged so that one end is immersed in liquid contained in a vessel and the free end overhangs the outside of the vessel to a level below the level of the liquid contained within the vessel, wick-syphonage is immediately set up, and clear liquid discharges from the free end of the wick, the drip being maintained so long as the free end overhangs below the level of the liquid contained in the vessel For details of the special application of wick-syphonage to the purification of vaccine virus Dr Coplans's paper must be consulted For this purpose he uses cotton wicks free from asbestos (which apparently arrests the virus in the process of syphonage) 1 in in diameter and 7 to 8 in. in length In the process of freeing the vaccine virus from epithelial and other tissue by wick-syphonage, a slime deposit always forms rapidly upon the surfaces of the submerged portion of the wick Indeed, a potent syphonate is more rapidly obtained when a very large surface of wick plentifully slime-coated is submerged The slime deposit, which consists of epithelial and other tissue containing the virus, is not intended to function as a bacteria-arrester. The lymph used in these experiments had been previously rendered free from pathogenic organisms The first syphonate, consisting of the wick "retention fluid," must always be discarded In the experiments for the freeing of the vaccine virus from calf lymph containing 50 per cent glycerine, it was found that the establishment of maximal potency of the wick syphonate did not occur until after the wick had been functioning for one week at least The potency of the liberated virus was subjected to stringent biological tests, rabbits inoculated intravenously therewith developing generalised vaccinia

---

[1] THE LANCET, 1925, ii., 826

We call attention to this device because the virus of vaccinia is being closely investigated just now by many groups of workers Its specific lesions are so readily produced on the skin of a rabbit that it is comparatively easy to work with, and for this reason may prove a useful guide to the elucidation of other viruses far more difficult to study experimentally while of greater pathogenic importance

THE LEAGUE OF NATIONS AND THE TRAFFIC IN OPIUM AND DANGEROUS DRUGS

THE Advisory Committee of the League of Nations on the Traffic in Opium and Dangerous Drugs recently held its eighth session in Geneva under the chairmanship of M. Bourgois, the French representative Germany, China, Great Britain, India, Japan, Netherlands, Portugal, Serbia, Siam, and Switzerland were also represented Mr Pinkney Tuck, instructed by the United States, attended in an unofficial capacity, and Colonel Arthur Woods, a former police commissioner of New York, took part in the proceedings for the first time as an assessor It appears that the Geneva Convention of February, 1925, which it was claimed would "accelerate from day to day and from month to month" the control of the dangerous drug traffic, still lacks ratification by the ten Powers (including seven of the States Members of the Central Board, two of which must be members of the League Council) without which that convention cannot come into force Meanwhile the Committee received sinister reports of the confiscation of very large quantities of opium and drugs in the course of the extremely serious illicit traffic which is going on The Committee again announce, what indeed was common knowledge when the first Hague Opium Conference assembled fifteen years ago, "that the quantity of drugs manufactured is considerably in excess of medical and scientific requirements" The Committee accordingly thought it wise to confine itself to examining the situation in the light of The Hague Convention of 1912, which is the only international instrument for control of the traffic in drugs of addiction now in operation Turkey has at length ratified that Convention, reports were considered from several signatory countries from which it appeared that exports of opium from the Persian gulf were still seriously excessive, that consignments of scheduled drugs under forged labels is not uncommon, and that smuggling by post to the Far East calls for repression

As pointed out in THE LANCET of Nov 20th, 1925, the Geneva Conferences failed to adopt the principle, advocated by the American delegation, of limitation of production of opium or to medical purposes, and at the same time postponed the operation of the requirement of The Hague Convention to suppress the traffic in smoking (or "prepared") opium Except for the change of policy of the Indian Government now endorsed both by the Council of State and the Legislative Assembly, there is little progress to be recorded and there is perhaps some apprehension lest the gloomy anticipation of the competent critic of the Geneva Conferences, Mr Gavit, may prove correct—viz, that the Convention of last year may be "a thing of printed paper with the odds heavily against its ever being anything else"

PARATHYROID EXTRACT IN INFANTILE TETANY

IN a recent issue of the *Journal of the American Medical Association* (vol. lxxxvi, No 22) will be found an account by Lynne Hoag and Helen Rivkin of the effect of treating infantile tetany with parathyroid extract (Lilly), which is made up by the method recently introduced by Collip They found that the treatment is very effective, and that there is a rapid improvement in the symptoms, and that the blood calcium returns to normal within 24 to 48 hours Their experiments show that an injection of about 5 units of this parathyroid extract per kg of body-weight gives a rise of about 1 mg of the serum calcium per 100 c cm Five units should be given for a period of about 24 to 36 hours They, in common with other observers, emphasise the necessity for great caution in the administration of the extract, and point out the necessity for repeated blood calcium estimations In the same journal, on p 1683, there is an account of the treatment of pulmonary tuberculosis by injections of this hormone The writers, Burgess Gordon, Jesse L Roark, and A Kenneth Lewis, maintained a serum calcium content of a series of 60 tuberculous patients at a high level for a considerable period Their general conclusion was that although some of the symptoms may be benefited, the general course of the disease remains unaffected The only value in the treatment consisted in its effect upon pulmonary hæmorrhage This was always relieved, and they conclude that the hormone will be of the greatest value in treating this complication of tuberculosis.

PSYCHOLOGICAL TESTS FOR IMMIGRANTS

THE late war brought in its train not only a number of social problems, but an increasing possibility of the application of psychology towards their solution The problem of immigration has been one of the most difficult that the United States have had to face In early days legislation was designed to control the numbers of incoming persons on the grounds of gross physical ill-health, obvious insanity, and criminality The war, however, aroused in America as elsewhere a considerable amount of national pride and racial passion, and psychology has been used to justify the selection of immigrants who are regarded as mentally as well as physically fit to enjoy the privileges of American citizenship Behind this will to select the best that Europe had to offer lurked a certain prejudice in favour of those persons who came from the Northern European countries to the exclusion of those from the Slavonic and Latin countries This hypersensitiveness to racial differences is a phenomenon not strange to America, where the colour problem has influenced policy for more than half a century Dr B Boody has recently published[1] a fair-minded and exhaustive review of the entire field of immigration legislation and the medical and psychological investigations that have contributed to the changes in the laws The procedure at Ellis Island is described, and the writer shows herself not only in sympathy with the immigration officials, but with the half-bewildered persons of all ages and nationalities who pass through the barriers into America. The mental tests adopted for the elimination of mental deficiency are given in statistical tables. Binet tests were used together with modifications of the American Army Beta tests. It was found as a result of experiments that the elimination as far as possible of language from the investigations is of advantage since it is not always easy to convey the idea of tests in different languages; moreover, one language may demand circumlocution or a complex phrase for what is a simple expression in another. The tests used seemed to dispose of the view that there was much, if any, racial difference in intellectual ability or in perceptual acuity. Selection on the whole has to be made on the basis of the individual, and any preconceived notion as to the inferiority of this or that race or nationality has to be reviewed in the light of facts brought out by testing each case under the best possible conditions.

---

[1] A Psychological Study of Immigrant Children at Ellis Island. By Berthy Boody, Ph D Baltimore The Williams and Wilkins Company, London Baillière, Tindall and Cox Pp 163 18s

ARSENIC IN APPLES

MUCH has been heard recently of the presence in or on apples of appreciable quantities of arsenic which has remained there to the prejudice of buyer and seller alike after the use of insecticidal spray. A recent paper[1] by Dr. F. T. Shutt, Dominion Chemist, is of value in clearing up the issue. In this paper, entitled the Examination of Canadian Sprayed Apples for Arsenic, Dr. Shutt describes the results of his examination of 43 samples of apples grown in Nova Scotia, Quebec, Ontario, and British Columbia. In half of the samples he was unable to detect any arsenic at all; about one-sixth contained traces of arsenic in a proportion of less than 1/10,000th of a grain per pound; and in the remaining third arsenic was present to the extent of 1/10,000th to 1/190th of a grain per pound. For the purpose of this analysis he examined only the skin, calyx, and stalk, for he states "it is generally agreed that the flesh of the apple is practically free from arsenic, even though 'ponderable amounts' of this poison may be present on the skin." Dr. Shutt points out that, even where the maximum amount of arsenic was found, it would be necessary to eat three pounds of raw apples at a time in order to ingest the minimum medicinal dose of arsenic.

A POST-GRADUATE HOSTEL FOR LONDON

AT the invitation of Sir D'Arcy Power a meeting was held at the Imperial Hotel, Russell-square, on Tuesday afternoon, July 6th, to consider the formation of a Post-Graduate Hostel, to be a centre of welcome for medical visitors to London. It is doubly a point of honour with the medical profession in London that such a material assistance for entertaining the stranger within our gates should be instituted, for not only do they desire to be the hosts of colleagues from abroad, but in many instances they have been the recipients of kindnesses abroad—return for which there is no opportunity of affording. Visitors from our colonies and from other lands do not obtain in London fitting opportunities for interchange of views with our professional men; seldom do they have time to visit, professional and private courtesies, though freely offered as we know, cannot be organised. If a hostel is instituted it will be possible to arrange that provincial as well as London exponents of our science and art should meet overseas visitors in a regular manner and to mutual advantage. It is proposed that at the hostel there should be opportunities for interchange of opinions without the medium of lectures, although different speakers will be put forward to deal with various aspects of disease in order to initiate discussions. In the first instance the premises of the hostel will be two large rooms placed at the disposal of the organisation by the Imperial Hotel, so that visitors can have a centre of social exchange. For the present it is proposed to hold discussions in the shape of symposia three or four times a week. Visitors will pay the ordinary hotel prices, but will be free of the two rooms at any time.

The provisional committee of the movement consists of Sir D'Arcy Power, as president; among the vice-presidents being Dr. Alfred Cox, representing the B.M.A.; Sir StClair Thomson and Mr. H. J. Patterson representing the Royal Society of Medicine; Sir G. Lethal Cheatle and Sir Thomas Horder. Dr. A. P. Birtwistle will act as director. Approval of the scheme has been expressed by many professional leaders in different parts of the country, and it is intended that a vice-president shall be obtained representing every English-speaking medical school and the more important foreign schools.

SIR WILLIAM MACEWEN

AT the recent commemoration of its founders and benefactors the University of Glasgow honoured especially the memory of Sir William Macewen, and to Prof. Archibald Young fell the task of delivering an oration on the life and work of his predecessor in the Regius Chair of Surgery. This oration has now been published[1], and repays study, because in telling of Macewen's achievements Prof. Young has given an idea of his personality; in describing the work which had far-reaching results he has not forgotten to indicate the sacrifices which made that work possible. The whole of this great man's life, says Prof. Young, was work—purposeful work. He could not be imagined doing anything merely to pass the time away, and he had determined to devote all his powers, unceasingly and without rest, to making advance in orderly fashion along the line of progress. Macewen, as is clear from Prof. Young's admirable portrait, had the capacity for taking pains which may or may not be called genius, and he let slip no chance of gaining knowledge in whatever occupation he was engaged. Since his observations were accurate and his conclusions never drawn without meticulous examination of all the evidence, he was naturally confident in his opinions and unwilling to modify them. For the same reason they seldom needed modification, and most of his theories and careful methods are embodied in the practice of surgery to-day. Although Macewen had the attitude of philosophic doubt proper to a scientist, in such a man this attitude could never be confused with the philosophic vagueness which often passes for it. His mind was well equipped, and to this mental efficiency he added the energy and the virility of a leader able to get the last ounce of work out of his assistants, because he gave the last ounce himself. Such a man—such a type—is a natural response to the demands which research and practice began to make last century, and of Macewen's services to humanity there can be no doubt. Every student ought to be familiar with his name, because it is attached to instruments and technique which are in daily use; whilst every surgeon, as he mechanically goes through the ritual of aseptic operations, is making use of methods Macewen did much to introduce. He elaborated and made intelligent the surgery of bones, and he laid many of the foundations of cerebral surgery. In these things he deserved well of those who follow him and his reputation is assured. "He was a great man" says Prof. Young—"one of the world's great men." But Job has said that great men are not always wise, and Macewen suffered in a way which Prof. Young points out. "He earned respect, he excited admiration in virtue of his energy, his industry, his originality of thought, his brilliant research. He kindled in his students and in his assistants something of the spirit of investigation with which he was himself so richly endowed. It is extremely doubtful, however if he ever could be said to have gained—or even if he desired to gain—the affection of those who were his most loyal helpers . which was to be regretted all the more that such affection could easily have been his " This was the defect of his qualities, and was possibly an inevitable corollary of the singleness of purpose which made his life so productive Such a man's victories, and their cost, cannot fail to be interesting, and Prof Young has done a service by presenting so lucidly his own impressions of them

---

[1] The Analyst, June 1926.

[1] Sir William Macewen. An Oration. By Prof. A. Young. With a photograph of the memorial bust. Glasgow University Publications IV. Glasgow: Jackson, Wylie and Co.

THE HEALTH OF THE ARMY IN 1924

During and immediately after the war the annual reports on the health of the Army fell into arrears, but the report for 1924, now issued, brings the series nearly up to date Unfortunately, it is the last to be signed by Sir William Leishman, under whose régime as Director-General these reports have been made more useful than they were before The total number of persons concerned remains almost the same as in 1923 Amongst officers there was an increase in the death-rate from 3 93 per 1000 to 5 86, but the health of the 192,283 other ranks improved Their total admissions amounted to 484 7 per 1000 during the year, malaria being the most frequent single cause, and their general death-rate was 2 80 as compared with 2 84 in 1923 Influenza caused more deaths than previously, but the figures for general injuries, dysentery, malaria, tubercle of lung, and digestive disorders all showed a diminution Fewer men had to be invalided—principally because there were fewer cases of middle-ear disease owing to greater care in recruiting and the provision of otoscopes in recruit inspection-rooms, and invaliding for tubercle of all kinds was reduced from 1 34 per 1000 to 1 03 As regards particular diseases it may be noted that there were 210 cases of enteric, 16 of encephalitis lethargica, and only 14 of alcoholism Kala-azar was successfully treated with " Von Heyden 471," even in cases which had become refractory to tartar emetic The incidence of malaria increased from 68 7 to 71 0, but the death-rate was reduced from 0 14 to 0 08 ; each case, moreover, lasted a shorter time and there were fewer constantly sick In 84 per cent of cases the parasite was recognised microscopically, as compared with 63 per cent in 1923 Amongst officers as amongst men, malaria is the commonest cause of admission to hospital, but there were only 290 cases as against 365 in the previous year In the treatment of pneumonia anti-pneumococcal serum gave less hopeful results than previously Tubercle accounted for 1 5 admissions per 1000 compared with 1 8 in 1923 There were 39 fewer cases altogether and 57 fewer invalids ; the admission rate on the Rhine dropped by 50 per cent The incidence of venereal disease was slightly reduced, from 56 4 per 1000 to 47 8, and on the Rhine it fell remarkably from 136·3 per 1000 to 38 4 , this reduction was most noticeable in syphilis, against which self-disinfection seems to be relatively more successful Twenty per cent of infections in the Army at home are contracted on leave, when prophylaxis is apt to be neglected , at Quetta only two men contracted syphilis in a series of 4788 cases in which preventive treatment was given Special research on the electrical treatment of gonorrhœa is still going on, but is incomplete An interesting outbreak of typhus fever (with a Weil-Felix reaction) occurred in six men with no lice who were living an open-air life and were well fed They were non-infectious, but had been associated with herdsmen on grazing land, and possibly they were infected by ticks It is found that in modern barracks there are fewer cases of tonsillitis than where the accommodation is less satisfactory There have been fewer cases of scabies and the average length of treatment has been reduced to six and a half days Post-anæsthetic vomiting has greatly diminished since vinegar inhalations have been given at the end of anæsthesia. Operating rooms and out-patient rooms are being improved and given better equipment as funds become available Rejection of recruits at entry and six months after entry have been reduced by special education of the recruiting officers The chief cause of rejection was loss or decay of teeth The number of teeth treated per person has increased from 3 48 to 4 18, and in India the proportion conserved has approximated to the home standard of 70 per cent Correlated with this dental care there are fewer admissions for diseases of the teeth and gums, for tonsillitis and for " other digestive disorders " A new feature of the report is the daily sick-rate for Woolwich cadets This is given as 27·17, which compares unfavourably with Sandhurst (13 22) , but the difference, at any rate partly, is accounted for by the frequency of local injuries at Woolwich

SANOCRYSIN TREATMENT IN SPAIN

In an article recently reprinted from the *Revista Medica de Barcelona*,[1] Dr Luis Saye, supernumerary professor to the Barcelona Faculty of Medicine, gives the results of treating 32 cases diagnosed as pulmonary tuberculosis with Mollgaard's sanocrysin, supplemented in some cases by his serum All the patients were treated in hospital and many different clinical types were included Dr Saye's method was to give an initial dose of 0 1 to 0 15 g (according to weight) intravenously, and before giving a second dose he waited until the effects of the first had passed off Gradually the amount given was increased up to 1 0 g or even 1 5 g , but the intervals between doses were also lengthened, from about five days to 10 or 12 In severe febrile cases the quantity was increased more slowly The serum was used when there was shock or severe albuminuria, or where large doses of sanocrysin were given to feeble people, but the author expresses no clear opinion on its value The symptoms noted were as follows Nausea and vomiting occurred at the time of injection in some cases , later on there was a febrile reaction of varying intensity and duration, and all the patients developed albuminuria at some stage, although it was rarely severe Other untoward symptoms were digestive disturbance, stomatitis, and exanthemata In only one case was severe shock observed, and this passed off in a few hours Although bronchitis sometimes appeared no appreciable metastatic focus was observed during the course of treatment, and in many patients the lesions were appreciably reduced Dr Saye classifies his results as (1) negative—by which he apparently means unfavourable, 3 cases , (2) nil, 6 , (3) improved, 6 , and (4) greatly improved, 17 His report includes full synopses of all the cases, and, in some of them, X ray photographs showing the condition of the lungs at various stages There are also numerous charts giving temperature, weight, and blood counts Emphasis is laid on the necessity for regulating the treatment according to careful observations of each individual patient , no fixed rules, says Dr Saye, can be laid down for the amount of the doses or the lengths of interval between them He considers that sanocrysin has a specific effect on the tuberculous process and that there are wide indications for its employment, but that does not, of course, justify neglect of other therapeutic measures such as rest, diet, fresh air, and, when indicated, artificial pneumothorax Much labour was evidently spent in drawing up this report which must be considered a solid contribution to the literature of sanocrysin All the facts and figures seem to have been carefully sifted

---

[1] October, 1925

Belgian Medical Tours —The *Bruxelles Médical* has arranged a series of tours in August and September to the Canary Islands, the ports of France, and to the Eastern Mediterranean Particulars may be had from the Bruxelles Médical at the Office Belge des Compagnies Françaises de Navigation, 29, Boulevard Adophe Max, Brussels

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

---

CLXXX.—THE TREATMENT OF CATARACT.

CATARACT may be classified as (*a*) progressive, (*b*) stationary. The progressive group includes the following subgroups: (1) Senile. (2) Complicated: (*a*) general disease—e.g. diabetes; (*b*) ocular disease—e.g., irido-cyclitis, retinitis pigmentosa, retinal detachment, choroiditis. (3) Occupational, from excessive heat as in glass-blowers. (4) Trauma from perforating injury or contusion. The stationary group may be: (1) lamellar; (2) congenital (total, axial, dotted, coralliform); (3) capsular (anterior from corneal ulcer in ophthalmia neonatorum, posterior from developmental defect).

Only the more important among these classes are here considered.

Senile Cataract

The ophthalmoscopic appearances of incipient senile cataract are as follows:—

(*a*) Radial striæ: dark sectors with the apices towards the centre of the pupil. (*b*) Coarse masses of opacity in the peripheral cortex, often behind the lower part of the iris. (*c*) Opaque meshwork in the pupillary area, increasing to a perinuclear opacity. (*d*) Saucer-shaped opacity in the posterior cortex, spreading towards the periphery.

A progressive cataract may be labelled *senile* if (1) the anterior parts of the eye appear normal; (2) the pupil reacts well to light; (3) good perception and projection of light are present, and any visible fundus is normal; (4) it is bilateral or incipient in the second eye; (5) other causes are absent.

Course of Incipient Senile Cataract.—The type with fine radial striæ progresses very slowly. In other types it is unwise to prophesy: the condition may remain stationary for some years and the vision may even clear slightly without any treatment; but it may also fail rapidly in a few months.

Mature Cataract.—In mature cataract (1) vision is reduced to hand movements; (2) the red reflex with the ophthalmoscope from the fundus is absent or nearly so; (3) the whole of the anterior surface of the lens is grey when viewed by oblique illumination.

Medical Treatment.

Where the opacity is central, mydriasis may assist the vision, and homatropine, 1 per cent., or atropine, ¼ per cent., may be used, but a watch must be kept that the intra-ocular tension does not rise. The former drug should be used at first as it can be counteracted by eserine should the tension increase.

From time to time various forms of treatment are vaunted as staying the course of senile cataract and as clearing it. It is doubtful whether any of them has the slightest effect; accounts of beneficial result are to be looked upon with suspicion. The biochemistry of the lens is still in an embryonic stage, and the ætiology of senile cataract is still sub judice. This subject is one of the many in which it is difficult to maintain a true balance between the claims of new remedies, which may be of real therapeutic value or may be tinged with chicanery. To have any chance of success they must be tried in the early stages of the disease, at a time when the patient may be unaware of any visual defect, apart from the need for glasses. Now, it is inadvisable to inform the patient of his condition at such a stage, because (1) treatment is nearly certain to be useless, (2) the condition may remain unchanged for many years, (3) the fear of impending blindness may cause needless prolonged depression. In cases where the diagnosis has to be declared, there can be no harm in trying some form of treatment, though a warning note should be sounded as to its probable inefficacy, and the prolonged period over which it must continue.

Among the treatments given are the following: (1) Solutions of potassium iodide in increasing strengths used in an eyebath for five or ten minutes several times a day. (2) Dor's ointment, "calcic-alkaline-iodide" well massaged into the conjunctiva twice daily. (3) Extract of parathyroid gland by the mouth in doses of 1/10 gr. twice daily.

Surgical Treatment

Mature Senile Cataract.—Some surgeons do not advise the extraction of a mature cataract if there is good vision still in the other eye. I consider this to be wrong for the following reasons: (*a*) The stage of maturity is the best for operation; if left to become hypermature, the capsule may become thickened and give rise to difficulties. (*b*) The patient's recuperative powers get less as age advances, though octogenarians often do well. (*c*) The unilateral loss of visual field is restored. (*d*) A successful result ensures the patient against a blind old age.

Immature Senile Cataract should be removed from one eye where the visual disability of both is such as markedly to handicap the patient in his vocation. In most cases of extraction of immature cataract the lens comes away leaving but little residual cortex, and a rapid convalescence and restoration of vision result. There is, however, a danger of clear cortex adhering to the capsule and this will become opaque and take some time to be absorbed. It may even set up iritis and secondary glaucoma, though this is not often of a serious variety.

Bilateral Extraction.—Should operation on the second eye be performed, if that on the first has been successful? A man can see better with two eyes than with one, and in comparatively young persons (under 60 and healthy) I advise extraction of the second cataract when it is approaching maturity. But for patients whose prospect of life is not long the risk and discomfort of the second extraction is hardly worth while. My practice is to discuss it with the patient, and to operate only if he is insistent.

Results of Operation.—In experienced hands the visual results of uncomplicated cases are very satisfactory. Some 85 or 90 per cent. can read ordinary print with strong convex glasses (about 14 D), and require about 11 D for distance.

Diabetic Cataract

In most cases this variety is senile cataract occurring in a diabetic. Diet and insulin treatment would appear to have no effect on the course of the cataract. The prognosis of the result of operation is almost as good as in the simple senile variety. Iritis and hæmorrhage are occasional sequelæ, but seldom prevent a final good result. Patients have died in coma after cataract extraction and therefore if acetone or diacetic acid is present in the urine, proper dietetic treatment should be instituted and the patient be stabilised in his new regime before operation. To old patients who are much wasted by diabetes and who refuse to diet, a dose or two of insulin may be administered as a preparation to operation.

Other Types of Cataract

Glass-blowers Cataract.—These cases are said to do well with extraction.

Traumatic Cataract.—Occasionally a contusion opacity (of the posterior rosette type) will clear in a month or two, and an opacity along the track of a foreign body may also resolve. As a rule, traumatic cataract will require removal, but it is often associated with damage to the iris and ciliary body, and excision of the globe may be necessary for the avoidance of sympathetic ophthalmia. These cases may give rise to much anxiety.

Lamellar Cataract.—The lens should be removed if the opacity is so large and dense that a vision of 6/18 cannot be expected. If the opacity is small and central, an optical iridectomy may be considered.

Bilateral Complete Congenital Cataract.—Operation should be early, to assist the development of the retinal macula. Some mental deficiency is often present.

Methods of Lens Removal.

Discission—In children and young adults up to the age of 20 or 25 the lens is soft and is removed by tearing the anterior capsule with a discission needle, thus the aqueous obtains access to the lens fibres, and gradual solution occurs Sometimes the fibres swell up excessively and necessitate a corneal incision for their removal (curette evacuation)

Extraction—With increasing age the hard nucleus includes more and more of the lens substance and is insoluble in the aqueous In patients over 40 it has to be removed en masse Some Anglo-Indian surgeons and a few continental operators extract the lens in its capsule Most ophthalmic surgeons prefer to leave the capsule in the eye, delivering the lens from within it They hold that this is the safer method, with less likelihood of vitreous loss It has the disadvantage that a second operation (needling) is sometimes necessary, to cut a gap through the capsule left in the pupil The steps of the operation are —

(*a*) *Anæsthesia*—Five per cent cocaine drops are instilled at five minutes intervals for 30 minutes

(*b*) The *incision* is made with the narrow Graefe knife by puncture, counter-puncture, and one or two sawing movements It should be placed just outside the corneal margin, and should involve two-fifths of the circumference A small flap of conjunctiva should be left at the top

(*c*) The *capsule* may be divided by the knife as it passes from puncture to counter-puncture during the incision, or it may be divided afterwards by the cystitome

(*d*) *Extraction* of the lens is performed by pressing the lower part of the lens backwards and upwards by means of some blunt instrument such as the back of a lens curette Slight pressure on the posterior lip of the wound assists the upper edge of the lens to tip forward and present The lens is then coaxed out slowly by gradual pressure from below, aided, if need be, by the point of the cystitome above

(*e*) *Iridectomy*—A small portion of iris is next snipped off, leaving the pupillary margin intact (peripheral "button-hole" iridectomy) If a complete iridectomy is desired, it should be made after the incision Many surgeons dispense with iridectomy (simple extraction)

(*f*) By *replacing the iris* with an iris repositor, the pupil is rendered central, and the conjunctival flap is then stroked into position over the wound

The Chief Complications of the Operation

(1) *Loss of Vitreous*—This is serious, although after it many cases regain a vision of 6/18 or 6/12 It gives an added danger of detachment of the retina, which usually results in blindness

(2) *Acute Infection*—This is nowadays rare, and is guarded against by surgical cleanliness, by proper irrigation of the conjunctiva before commencing the operation, and by a preliminary culture of the conjunctival secretion (to exclude the presence of pyogenic micro-organisms) Its occurrence usually necessitates excision or evisceration of the globe

(3) *Prolapse of the Iris*—This may occur during the first 24–48 hours, and for this reason the patient should be kept quite still for the first few days after the operation If it occurs, the prolapse must be cut off as soon as possible As a rule, no permanent harm accrues Prolapse is less likely to take place if an iridectomy has been done

(4) *Capsule Strands in the Wound*—These are impossible to see at the time of operation, and if included in the scar are a source of irritation and secondary glaucoma They are more likely to get caught with complete iridectomy If a simple extraction or one with peripheral iridectomy is done, the capsule gets swept away from the wound by the pupillary margin of the iris, as it is replaced by the iris repositor

After-Care

Both eyes should be bandaged for 24 hours The eye may be examined in 24–48 hours and a drop of warm atropine (1 per cent) instilled The patient should be kept in bed for six or seven days The average length of stay in hospital or home after the operation is 14 days Needling, if necessary, should be performed as soon as the eye is free from congestion

FRANK JULER, M B Camb , F R C S Eng ,
Surgeon, Moorfields Eye Hospital, Assistant
Ophthalmic Surgeon, St Mary's Hospital

Special Articles.

PENSIONS FOR HOSPITAL OFFICERS AND NURSES.

As was noted last week, at the Sixteenth Annual Meeting and Conference of the British Hospitals Association the proceedings opened with a paper by Mr Herbert L Eason (superintendent of Guy's Hospital, London) describing the movement to provide pensions for hospital servants and giving a critical summary of the scheme now approved by the King Edward's Hospital Fund for London This scheme was set out in THE LANCET of March 27th (p 679) and April 3rd (p 972).

Mr Eason said that the question might not have reached its present stage if it had simply been one of pensions for those employed at individual hospitals, what made coordinated action immediately important to the hospitals themselves was the fact that the present system checked the movement of officials from one to another—whereas migration should be the characteristic feature of a hospital officer's life It had been for this reason that the Whittall Committee had come to the conclusion that a Federated Superannuation Scheme on the lines of the Federated Superannuation Scheme for University Teachers was the proper solution of the problem After considering the varieties of insurance pensions schemes it had rejected all the mutual schemes and decided in favour of the insurance method A conference, at which were representatives of the British Hospitals' Association, the Hospital Officers' Association, the College of Nursing, and the King Edward's Hospital Fund for London, had resulted in the publication in November last of a draft scheme of pensions for hospital officers and nurses This had been submitted to hospitals generally and many of them had been represented at a conference called by the King's Fund in London in May where differences of opinion were discussed On May 14th the Council of the King's Fund had approved, amongst others, the two following resolutions —

1 That, in making annual grants to maintenance to hospitals on its list at the ordinary distribution, the King's Fund should take into account (subject to such conditions as may be approved by the management committee) the amount spent by a hospital on an approved contributory pensions scheme, including amounts spent in respect of existing officers and retired officers

2 That the assistance offered by the King's Fund should be on the following scale—viz , a maximum sum for seven years of £20,000 a year, or 25 per cent of the expenditure of the hospitals on the approved scheme, whichever is the smaller , this amount to be provided as far as possible by means of contributions obtained by a special appeal in selected quarters and to be increased if sufficient funds are realised by such appeal

On June 10th the King's Fund had written to the hospitals which showed sympathy with the proposals, enclosing an outline of the pension scheme as approved by the Fund for the purpose of special grants in aid In its covering letter the Fund stated that it would be glad to know if the hospital in question was prepared to cooperate, and proposed calling a further conference for the purpose early in July It was this scheme, as now modified, approved, and made public by the Fund, that Mr Eason intended to discuss

The Present Proposals

The suggestion was, he said, that the total contribution or premium should be 15 per cent of salary and emoluments (Emoluments included meals, board, and lodging at specified rates) It had been urged that this was too high a premium, but that was purely a matter for actuaries, and the King's Fund, in accordance with hard economic facts, had declined to recognise for purposes of a grant any scheme that envisaged smaller contributions It was proposed that 10 per cent of the contributions were to be paid by the hospital and 5 per cent by the officer or nurse, but the relative proportions might possibly vary in different institutions For officers the policies were to mature at the age of 60 and for nurses at 55 The Scheme was to include all salaried staff, administrative, clerical, or dispensing, whose total of salary and emoluments was over £160, and it was to be compulsory for new entrants into the service of the hospital Where the total remuneration was between £100 and £160 the hospital would have the option of admitting those who wished to join Although no maximum pensionable salary limit was to be laid down it would be open to an individual hospital to arrange with an individual officer that an increase of salary beyond a specified high level should not carry with it any increase in the contributions of either

As was well known, said Mr Eason, male hospital officers were comparatively few in number as compared with the nursing staff, and it was probable that if the pension scheme had referred to hospital officers alone, there would have been much less criticism and much less apprehension as to the financial burden on hospitals in future As a matter of fact, the Scheme as applying to hospital officers had been generally approved, and it had been agreed that if an officer migrated within the hospital service, he should take the benefit of both contributions with him to his next institution; that if he left hospital service altogether within ten years of joining the Scheme, he should take the benefit of his own contributions only; and that if he left hospital service altogether after ten years he should take the benefit of both contributions Policies were to be taken out with insurance companies and the officer or nurse was to have the choice of alternative benefits—e g, endowment assurance policies with profits or deferred annuity policies

Nurses' Pensions

Mr Eason then proceeded to discuss the Scheme as it affects nurses It was, he said, to include all female professional nurses, whether nursing the sick or doing work under a public authority, and it was to be compulsory for new entrants to a hospital's service to join it or continue membership if already members The complete scheme included all probationers after one year's training, but it would be open to each hospital to decide whether to admit them then or only after their names were placed on the State Register It was over the question of nurses' pensions that there had been most discussion, but the attitude of the nurses' representatives had been quite definite The College of Nursing urged that the nurse's life was a short one Often she did not begin her career till the age of 20 or later, and she was worn out and should become pensionable at the age of 55 Her pension would be smaller than that of the hospital officer because her active career was shorter and because female annuitants lived longer than male The representatives of the nurses therefore asked that contributions towards nurses' pensions should begin as early as possible, and suggested that hospitals and probationers should begin their payments as soon as the probationer started training

Objection to this, continued Mr Eason, might be taken on three grounds (1) That a contribution of 10 per cent on salary plus emoluments for every nurse during the whole period of her training imposes too great a burden on the hospital, (2) that a contribution of 5 per cent is too much for the nurse to pay, and (3) that there is no claim on the hospitals to contribute in respect of pensions for probationers as they are only students in training As regards the first objection every hospital should calculate for itself what would be the total cost of premiums in respect of its whole nursing staff, and then convert this cost into a percentage of the annual expenditure of the hospital He had estimated that if Guy's Hospital were to make these 10 per cent contributions in respect of every hospital officer eligible under the Scheme, and every probationer, trained nurse, sister, or member of the female administrative staff, the total cost of the premiums would be between 2 5 and 3 per cent of the hospital's annual expenditure, and he could not help thinking that the public—upon whom the hospitals really depended for support—would not consider 3 per cent of the total annual expenditure an excessive amount to pay towards the pensions of those who were, in fact, doing the greater part of the hospital work, excluding the medical service At the present time there was difficulty in obtaining probationers in hospitals, and it might be worth while to consider which in the long run would be more expensive—to pay pension premiums for nurses in training, or to run short of probationers and be obliged to staff the hospital with trained nurses The second objection, that it was impossible for a probationer in training to afford the 5 per cent of her salary and emoluments, was a dangerous argument to use, since the immediate inference to be drawn was that the probationer is paid an inadequate salary If attempts were made to justify this inadequacy on the ground that nurses receive their training and are paid for it as well, this argument would immediately be met with the retort that in return for her training the probationer does about 80 or 90 per cent of the hospital's nursing work and thereby saves the hospital large sums of money. As long as she was doing this, he thought it almost impossible to justify a salary inadequate for the payment of the nurse's contributions towards her pension The representatives of the nurses had also pointed out that at no period of her life would the nurse be in such a favourable position to pay her own premiums; as a probationer her financial needs were practically limited to clothes to wear outside the hospital Personally, Mr Eason felt that early contributions by hospitals towards nurses' pensions would be one of the strongest inducements to women to take up nursing as a profession

Details and Difficulties

Other questions, he continued, arose in connexion with nurses' pensions When should they commence? After how many years' service should a nurse be entitled to carry away both her own and the hospital's contributions? Probably few hospitals would agree to start the premiums immediately a probationer entered the hospital service, as it was a matter of common experience that many nurses left during their first year If, however, a nurse settled down at a hospital for a year, there was a strong presumption that she would complete her training, and he thought, therefore, that hospitals would be well advised to commence premiums at the end of the first year of training The question when a nurse should be entitled to carry off both her own and the hospital's contributions required careful consideration From figures of one London hospital it appeared that out of 500 consecutive nurses who joined the hospital, nearly 40 per cent were married ten years after they had entered As a matter of fact, the great majority of nurses who married did so within five years or so of leaving the hospital, and it was suggested, therefore, that all contributions should be held in reserve or in trust by the hospital until the nurse had been five years in the practice of nursing, after she had completed her training, until then the hospital would retain its own contributions and she would be entitled to take away only her own If, after five years, the nurse was still nursing, whether in an institution or in private nursing, the hospital would assign to her, or whatever organisation was acting as her trustee, both her own and the hospital's contributions

Hospital governors might also say What concern is it of ours to start making contributions towards the pensions of our probationers, the great majority of whom, at the end of their training, will leave the hospital and will never be seen by us again? The answer to that question was that it does not matter to the hospital what happens to the nurse after she has left it The contributions made by the hospital while she was in training or while serving the hospital as a trained nurse would provide her with a certain pension at her retiring age, which pension would, of course, be in addition to any pension to which she might be entitled should she join any other service which provided a pension It should be remembered that nursing was a very arduous profession—that a number of nurses broke down during their nursing career—and that at the end of their nursing life many nurses were at the present day in absolute want Of all appeals to the charitable public a claim for additional support for the purpose of providing pensions for nurses would, he believed, meet with the readiest response

It must not be forgotten also that in London at any rate, the King's Fund had stated that it was prepared to make a grant up to 25 per cent , not only towards the premiums for pensions for hospital officers and nurses who would in future join the scheme, should the hospital participate, but also in respect of pensions already being granted by the hospitals, and of those which might in future be granted by the hospitals to those hospital officers and nurses who, by reason of seniority and length of service, were ineligible to join the present scheme

---

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

LAYING OF THE FOUNDATION-STONE

In 1921 a committee was appointed by the then Minister of Health, with the Earl of Athlone as chairman, "to investigate the needs of medical practitioners and other graduates for further education in medicine in London, and to submit proposals for a practicable scheme for meeting them"

This committee made two main recommendations one for the development of the work of post-graduate medical education generally in London, and the other for the setting up of what they called an Institute of State Medicine, to be established by the University of London, in which instruction should be given in public health The latter recommendation happily synchronised with proposals which the Rockefeller Foundation had in mind for establishing in London a great school of Hygiene and Tropical Medicine They were impressed with the needs of the situation as set out in the Athlone Committee's report, and they made their now well-known offer of two million dollars to the British Government for the building and equipment of such a school This offer was accepted and the Government assumed the necessary responsibility for the school's adequate maintenance when it was completed

The London School of Hygiene and Tropical Medicine was established by Royal Charter in 1924, and the old London School of Tropical Medicine was taken over in August of that year

In 1925, after a limited competition, Mr P Morley Horder and Mr Verner O Rees were appointed the architects of the new building, the foundation-stone of which was laid by the Minister of Health on Wednesday, July 7th, 1926 The elevation drawing of the building which is to be erected (see illustration) shows that it will be a notable addition to the public buildings of the metropolis

The Scope of the Institute

In the construction of the building certain requirements had to be met which, together with the extent and form of the site and the funds available, determined the architectural form which the school is to assume

Provision had to be made for teaching hygiene in all its branches for instruction in tropical medicine, and for research work in both these subjects, and in any of the ancillary sciences The balance had to be maintained equally between teaching and research Both have received sympathetic consideration As a result, it was finally decided to provide for research one-sixth of the total space available for instructional purposes This is a liberal allowance when it is remembered that the space devoted to teaching includes a big lecture theatre, numerous roomy class rooms and general laboratories, together with the library, a very large museum on two floors, tutorial rooms, and other accommodation The number of students which the school is intended to accommodate is 250 Of these, it is considered that 100 will be engaged upon the study of tropical medicine, a figure based on the present attendance at the course given in the tropical division at Endsleigh-gardens, where there has of late been an average of nearly 70 per session The remaining figure, 150, representing students studying for diplomas or degrees in public health, has intentionally been placed very much on the safe side At present there are only about 45 students attending courses in London for the diploma in public health, but it is noteworthy that a recovery has taken place from the marked fall in numbers which followed the introduction of the new regulations of the General Medical Council, and there can be no doubt that this increase will continue, although it may be many years before there are as many as 150 aspirants for a public health qualification

The building, of which the foundations have been laid while a start has been made upon the steel structure, will be situated between Gower-street and Malet-street, behind the British Museum It will front south upon Keppel-street, and it is hoped that at least the frontage, which contains the main entrance will be of Portland stone This Keppel-street elevation will be enriched by a wide fringe composed of wreaths and of the names of some of the great pioneers in hygiene and in tropical medicine Finality has not yet been reached as regards these names Over the main entrance there will be a large panel on which the handsome and interesting seal of the school will be engraved The general shape of the building is that of a letter H, with the Keppel-street front closing the southern end of the H, and the crossbar dividing the enclosed space into two nearly equal courts, one of which, the northern, is not encroached upon, while the other, the southern, is partly occupied by the lecture theatre This arrangement provides a building singularly well ventilated by natural means and well lighted, while it will be easy to find one's way about it, especially in view of the manner in which the different sections are grouped

The provisional scheme of studies provides for six main divisions—namely, those of applied physics, physiology and principles of hygiene, chemistry and biochemistry, immunology and bacteriology, medical zoology, including parasitology and comparative pathology, epidemiology and statistics, and, finally, the principles and practice of preventive medicine, general sanitation and administration This grouping has been retained but, in addition, there has been recognition of the fact that the clinical pathology of exotic diseases forms a most important part of tropical medicine and, accordingly, as will be seen, a special laboratory has been devoted to the joint needs of this subject and of certain branches of tropical hygiene with which, of course, tropical pathology is intimately associated

It has been decided subject to satisfactory estimates of cost, to warm the building by the panel system of heating This is a modification of the old Roman hypocaust method and has many advantages while its disadvantages and difficulties can, it is believed, now be discounted

Basement —The basement, which is really a half basement, contains the lower floor of the lecture theatre, provision for museum storage, library and publications stock rooms, goods reception store, and issue rooms, together with carpenters' and metal workers' shops Here also will be found the X ray department and the photographic unit, the distilling room, the room for large centrifuges, A spacious post-mortem room is being provided It is hoped here to conduct autopsies upon animals dying in the Zoological Gardens which often exhibit the lesions of diseases met with in the tropics At present the School is in close touch with the Zoological Society of London, a member of its staff being pathologist to that Society The lecture theatre has accommodation for 250 students Behind it are the lecturers' room and the preparation room. From the latter, cinema epidiascope and lantern work will be conducted. Special attention has been paid to the question of acoustics, the elimination of draughts, adequate lighting, and facilities for rendering the theatre dark.

Ground Floor.—The main entrance on Keppel-street leads into a fine entrance hall, from which there is direct access to the lecture theatre. The whole of the front block, facing Keppel-street, with the exception of the Gower-street corner, is utilised for purposes of general administration, the board room receiving special architectural treatment as it will be panelled in oak and ebony. The Gower-street corner houses the professors' common room and writing room. The eastern wing of this floor, facing Malet-street, contains, from south to north, the director's laboratory and a laboratory of sanitary engineering which is intended to be partly a classroom wherein students studying public health will be taught to read and perhaps to prepare plans, will become conversant with the principles of town-planning and will work with rough models of filters and other sanitary appliances with which they should have some acquaintance. In the crossbar facing north, and thus assured of good lighting, is the laboratory of tropical hygiene, already mentioned, wherein the clinical pathology of the tropics will also be taught. The western wing of the ground floor, facing Gower-street, contains common rooms for the professors and men and women students, and a convenient room for the service of tea and light refreshments. At the north end is a large students' study room, where silence will be enforced. Provision is also made on this floor for the classrooms, for the Division of General Sanitation and Public Health. The student in this division will get a great deal of his instruction outside from medical officers of health, both in urban and rural districts.

First Floor.—The library, which will be a large and imposing room 33 feet wide and 120 feet long, is given the place of honour in the front of the building. To its left front lie the offices of the Bureau of Hygiene and Tropical Diseases, which it is proposed should continue, as at present, a tenant of the School. It is indeed possible that a closer association will eventually develop. Immediately behind the library access is provided to the flat roof of the lecture theatre, which will be laid out as a garden court. The west end of the library is bounded by an ample periodicals room, for it is intended that the current literature shall be separately housed and made readily available for consultation. This room communicates with the library and both can be thrown open, together with the above-mentioned roof-garden, on the occasion of large social or scientific gatherings. The rest of this, the west wing, is entirely occupied by the Division of Epidemiology and Statistics and contains a laboratory, card-index room, study rooms, and staff quarters. The whole of the crossbar of the H is devoted to the Division of Applied Physiology, as is the northern half of the east wing of the building. This division is likely to be closely concerned with the problems of industrial hygiene and so, in addition to the X ray department and constant temperature room in the basement, it is provided with a large cross-lighted laboratory, a range of fine research rooms, mostly facing north, a gas room, and a gas chamber.

Second Floor.—Here the lower storey of the museum, which will be devoted to hygiene, runs the whole length of the Keppel-street front. In the roof there are three open wells admitting light from above, while it is well lit on the south by windows looking out on Keppel-street and less fully on the north by windows overlooking the north court. There should, however, be ample daylight illumination, and it is important to secure as much wall space as possible. The museum has been granted 15,000 feet of floor space, but in all probability, this will eventually be found insufficient to illustrate adequately the wide subjects with which it will be concerned.

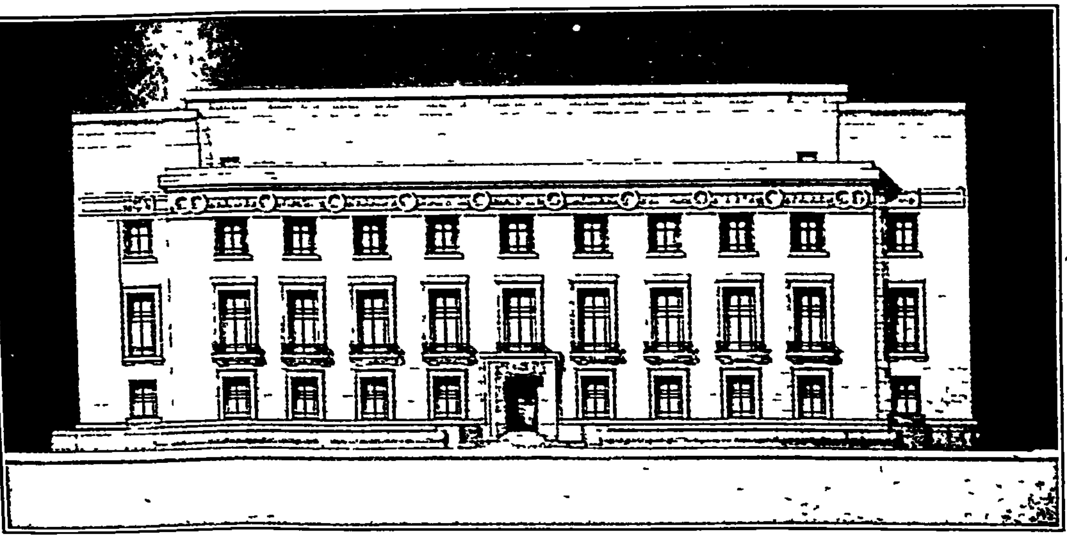
The rest of this floor is divided between the division of chemistry and biochemistry and that of bacteriology and immunology. The latter has been given the larger share, for there are likely to be more research workers in bacteriology, but there is no great difference in the space allocated to each.

The large laboratory of the Chemical Division in the north-east corner of the building will accommodate 70 students and the biochemical and nutritional laboratory will take 35. It is hoped that special instruction will be given on the subject of nutrition and that research will be carried out, not only on the nutritional value of foodstuffs, but on their money-value. The biochemist must have his experimental animals alongside him, so a roomy and well-ventilated animal house has been sandwiched in between the biochemical laboratory and the museum. The chemical department has its quota of staff and research rooms and a fine classroom with 90 seats.

The chief feature of the Division of Bacteriology and Immunology is the large bacteriological laboratory which can hold 90 students and has cross lighting and ventilation. There are smaller general laboratories in this division, which also contains a good-sized classroom, media, sterilising and washing-up rooms, hot and cold incubator chambers, research laboratories, and a dark room.

Third Floor.—The upper storey of the museum, which will be devoted to tropical medicine and hygiene, runs the whole length of the Keppel-street front and has roof lighting, which, as stated, is communicated to the lower storey by three open wells in the floor. In close touch with this part of the museum are the museum offices and preparation rooms in the west wing. The rest of the floor is wholly given up to the important Division of Medical Biology, and will accordingly absorb the greater part of the work of the old London School of Tropical Medicine, now continued at Endsleigh-gardens as the tropical division of the present School. The large laboratory for this division has provision for 86 students; in addition to cross-lighting, it has a weaver roof. Other rooms which will be shared by the four departments constituting this division are the two large classrooms, the preparation room, the seminar room, the advanced demonstration room, the reading and reprint room, and the insectarium and aquarium.

The greater part of the space will be distributed between the departments of helminthology, comparative pathology, protozoology and entomology. There are some special features, such as a joint dissecting room for helminthology and comparative pathology, a room for housing the helmintho-



The new home of the London School of Hygiene and Tropical Medicine.
(Main elevation—Keppel street front.)

logical collections, a fæces room, adequately ventilated, and a stock room for entomological specimens.

Fourth Floor—This is a recessed floor, occupying only the crossbar of the H and the southern portion of the Gower-street front. Here are the caretaker's quarters, the artist's room, the cinema preparation room, and also the animal quarters, with exercise court and all conveniences. From the artist's room there runs south a special range of mice quarters.

Fifth Floor—This is represented by additional accommodation for animals and provision for water tanks and fan chambers. Like the fourth floor, it is recessed from the wall-line of the main building and is of no great extent.

It will be obvious that the structure of the building has been most carefully planned. The design has proved readily adaptable to all the varied and exacting requirements of the several divisions of work, and it may be anticipated that the completed edifice will worthily carry out the intentions of the promoters and the generous conception of the Rockefeller Foundation. It is unfortunate that representatives of the Foundation were unable to be present at the ceremony to hear from the chairman of the board, Sir Alfred Mond, or from the Minister of Health, an expression of the appreciation of the British people of this recognition of London as a fitting centre for a great school of preventive medicine.

MEDICINE AND THE LAW

The Judicial Value of Technical Assessors

MEDICINE and seamanship have this much in common that professional experts in both sciences are called in as assessors in courts of law. There is this difference that, except perhaps in workmen's compensation cases, the common law courts get almost all their technical guidance in medical matters from expert witnesses rather than from assessors, whereas the Admiralty courts rely more upon assessors than upon expert witnesses. But in either case, once an assessor is called in, his legal position and authority are the same whether he is a medical or a nautical expert. The medical profession, therefore, may be interested in a recent House of Lords appeal (the *Australia*) where the divergent views of the experts evidently baffled the judges. The President of the Admiralty Court got an answer from his assessors upon which he held a vessel called the *Nautilus* to blame for a collision with the *Australia*. The Court of Appeal was inclined to agree till it got a directly opposite answer from its own assessors; feeling obliged to give effect to this, it reversed the President's decision. The House of Lords in turn consulted its own assessors whose opinion was not exactly unanimous, and reversed the judgment of the Court of Appeal. The dilemma was not unlike that in a case tried in 1919 (the *Melanie*) where Mr. Justice Hill's findings were approved by his assessors, the Court of Appeal followed its own assessors' advice, and finally the House of Lords was distracted by the fact that its two assessors expressed diametrically opposite opinions on each point of substance. Doctors proverbially differ; sailors, it seems, can differ just as widely.

The result of these differences is two fold. Firstly, Lord Dunedin, in the *Australia* case, tells the Court of Appeal not to think that its assessors are of higher authority than those of the court below. Appeals are from judge to judge, not from assessor to assessor. "There is no hierarchy of assessors." Lord Sumner added that the technical advice given below is available for the consideration of the appellate tribunal as well as that given by its own assessors; the latter are not substituted for those previously consulted; they are additional to them. The second and more general result is that the courts grow more ready to dispense with all expert guidance if the experts' views are so discordant. Assessors, said Lord Dunedin, occupy much the same position as do skilled witnesses except that they are not brought forward as the partisans of one side or the other. Just as in patent cases a judge must make his own choice between two opposing opinions on a technical matter, so the court must make its own choice if assessors disagree. He deprecated questions being put to assessors in a form tantamount to asking them if they would find for the plaintiff or the defendant. Lord Sumner repeated that the court cannot surrender to assessors the judicial function of deciding the issue, however technical it may be. "Authority for the proposition that assessors only give advice, and that judges need not take it but must in any case settle the decision and bear the responsibility, is both copious and old. . . . After all, experience at sea is not everything. Assessors are not chosen for their personal conversance with collisions, and an experienced judge or counsel may boast that he has, in a sense, been in hundreds of collisions while the assessors have hardly seen tens."

Altogether these two cases, the *Melanie* and the *Australia*, have led the law courts for the moment a long way in the direction of discounting the value of the expert's guidance. The court of first instance, said Lord Birkenhead in the former, will naturally be in frequent and informal consultation with its assessors, the Court of Appeal can probably ask its own assessors definite written questions, and then perhaps the House of Lords will not want assessors at all. "Personally," said Lord Dunedin in the more recent case, "except for the purpose of explanation, I shall always ask an assessor as little as possible." He goes on to hint that many technical niceties disappeared when sailing vessels gave way to steamships and that seamanship in avoiding a collision is often a question of common sense. In the light of such observations, medical assessors and experts should perhaps prepare themselves for signs of a judicial revolt against technical leading-strings.

A Claim for Fees.

A recent action in the Bromley County Court illustrates the uncertainty of remuneration for services rendered by practitioners. Dr. Alfred Tennyson-Smith, of Orpington, attended the two daughters of Mr. F. H. Fletcher, a merchant, of St. Mary Cray, in April, 1924. On the 25th of that month he was called to Mr. Fletcher's house at 11 P.M. and found one of the daughters gravely ill, the cause being acute appendicitis and acute peritonitis. An immediate operation being deemed necessary, the child was removed with her father's consent to the Cray Valley Hospital. The operation was performed in a private ward and was completely successful. Dr. Tennyson-Smith had an assistant and an anæsthetist; he also had vaccine prepared, and he paid 28 visits to the child after operation. He afterwards sent in an account for £81, including an operation fee of 50 guineas. On Mr. Fletcher's complaint of the size of the bill, he reduced the operation fee from 50 to 35 guineas to save further trouble and to obtain a settlement. From the account of the county court proceedings in the *Sidcup Times* it appears that adequate evidence was placed before the court to show that the fees charged were reasonable. On the other hand, for the defendant, a nursing-home proprietor in London was called who declared the operation fee excessive. A reasonable charge, in the opinion of this witness, would have been 25 guineas for the surgeon, 10 guineas extra if he had an assistant, and 5 guineas for the anæsthetist, with no extras for visits. His Honour Judge Parry seems to have accepted this standard as he gave judgment for the plaintiff for £42 4*s.* 6*d.* The judge remarked that it was an unfortunate dispute and that it was a pity that the parties could not have met to discuss the matter; he added that the defendant owed a very great debt of gratitude to the plaintiff for the skilful way in which he dealt with the case. So far as can be judged from the newspaper report of the evidence, the defendant had been anxious to have a London surgeon to operate but was told—no doubt correctly—that there was no time Mr Fletcher appears to have resisted Dr Tennyson-Smith's claim the more tenaciously because there was also a bill of some £35 from the hospital, and, in addition, he had had the expense of a nurse for the child for three weeks

The case should not be taken as standardising the fee for an operation for appendicitis at 25 guineas The law courts will take the circumstances of a particular case into account, including the means of the defendant and the professional status of the plaintiff All that this case decides is that in a particular set of circumstances a county court judge thought he could accept the statement of a witness to the effect that there were many excellent surgeons who would be quite willing to perform the operation which was necessary for the successful treatment of the defendant's daughter for a fee of 25 guineas That statement could be much challenged.

Reponsibility for Post-mortem Examinations in Hospitals

According to the *Tunbridge Wells Advertiser* some difference of opinion has arisen locally between the coroner and the staff of the General Hospital The coroner (Mr A H Neve) has stated at recent inquests that his invariable rule was that the medical practitioner who has been in constant attendance upon a patient should continue in charge of a case for the purpose of giving evidence as to the cause of death The hospital authorities, as a matter of principle, maintained that where a man is brought into hospital and his case is diagnosed there, the house surgeon should perform the post-mortem examination (if one should be necessary) and not a practitioner from outside To this the coroner rejoined that he has no statutory authority to pay fees to two doctors unless it is impossible to ascertain the cause of death from one He added that inquests were held by arrangement at the hospital and that the hospital received good fees, so that he was himself under no obligation to the hospital or its staff, the arrangement being one of which there was no reason to complain It seems that the coroner had threatened, on somewhat insufficient ground, that, in the event of any dispute, he would call in the medical officer of the borough to make the post-mortem and give evidence as to the cause of death This course he justified on the ground that the medical officer was also the police surgeon and that, where there was no doctor concerned, the police would call him in Against such a step the house surgeon naturally protested , in his view, if a patient dies in the hospital, the hospital authorities should make the post-mortem examination and receive the fee The coroner, however, reiterated his rule that, when a practitioner has been in attendance on a patient, he shall be called to make the post-mortem and give evidence In certain cases, of course, the coroner has to certify that the deceased was not attended by a medical officer in the institution In the particular case which gave rise to the discussion, the deceased had been for some weeks mentally unstable, so that the coroner could with good reason maintain that the patient's own practitioner was the best possible witness of his recent state of health This local dispute, if such it may be called, will no doubt be amicably settled with some common-sense reconciliation of two different points of view On the one hand, the coroner must have before him the best possible evidence of the cause of death, for which purpose the testimony of any practitioner who has recently attended the deceased will be particularly valuable , if any statutory restriction as to fees prevents the coroner from obtaining the fullest information, the law should be altered On the other hand, the reasonable rights of hospitals should be respected, and any observation which can be construed as a possible threat of interference with hospital administration by outside officials should be avoided

THE NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.

TWELFTH ANNUAL CONFERENCE

This conference was held in the McLellan Galleries' Glasgow, on July 1st, 2nd, and 3rd, and was attended by over 200 medical men and representatives of the local authorities from all parts of the United Kingdom and Ireland

Sir Arthur Stanley (chairman of the Council), presided at the opening session In introducing the Lord Provost (Sir W W Montgomery), who welcomed the delegates to the city on behalf of the Municipality, he said that the work of the Association was mainly one of propaganda, of obtaining facts relative to tuberculosis, and giving those out to the general public A fortnight hence, he stated, an appeal for £100,000 was to be inaugurated at a meeting at the Mansion House, London, over which the Prince of Wales would preside The £100,000 was to be utilised (1) to educate the masses regarding the causes and prevention of tuberculosis by means of lectures, acting in cooperation with recognised authorities and medical practitioners throughout the country , (2) to render immediate help to applicants, where the machinery of Governmental organisations could be employed , (3) to devise and develop practical schemes for tuberculosis care committees, the pressing need for which had been emphasised by the Ministry of Health

Dr A. S MacGregor (medical officer of health, Glasgow) introduced a discussion on

Provision for the Care of Non-Pulmonary Tuberculosis

He dealt with the question as to what extent administration had fallen short of providing the necessary facilities for each area, and what form these facilities should take Prolonged treatment of non-pulmonary forms of the disease was essential, and that in specially designed and equipped institutions Until recently the results had been greatly marred by the arrival of the cases at a late stage of the disease Advanced disease implied destruction of bone, and that frequently led to permanent crippling and deformity More recently cases had been obtained at an earlier stage and better results had followed Commenting on the work at Robroyston Hospital, Glasgow, he pointed out that in the treatment of spinal tuberculosis in 1925, 52 per cent of the cases had been dismissed with the disease arrested, as compared with 34 per cent in 1922–23 In hip-joint disease the hospital reports showed an increase to 61 per cent of patients discharged with the disease arrested In those, partial or complete restoration of function had been the rule At the present time the corporation of Glasgow have approximately 436 beds available for the treatment of non-pulmonary tuberculosis That was not sufficient, and the corporation had decided to increase the accommodation at Robroyston In addition they were building at Mearnskirk a sanatorium for 330 cases of non-pulmonary tuberculosis in childhood. This would increase their accommodation to 750, and would mean a bed for every 1300 of the population That, he thought, would be sufficient for the necessities of the case on the institutional side He had been much impressed with the results obtained in the reduction of crippling due to tuberculosis, and looked forward to the day when it would entirely disappear

Dr James Taylor (consulting surgeon, Glasgow Corporation hospitals and sanatoria) dealt with the clinical aspect of non-pulmonary tuberculosis He stated that for effective work five things were necessary (1) Prompt recognition of the disease , (2) special open-air hospitals on the lines of Rollier's institution at Leysin, or the institutions at Berck-Plage , (3) the equipment that would enable special treatment to be given, such as plaster, celluloid, or certalmid splinting, light treatment, and X rays, &c , (4) prolonged treatment, if necessary, over a term of years , (5) efficient after-care, best carried out at special tuberculosis dispensaries. He emphasised that the improving of housing conditions and the provision of abundant air and sunshine for the population generally, although it would entail a great initial expenditure, would cut down quickly the sum spent yearly on the maintenance of special institutions for treatment of tuberculosis.

Dr. James Johnstone (medical superintendent, Heatherwood Hospital, Ascot) gave figures relating to the cases admitted to this institution since 1922. Only 45 per cent. out of a total of 251 had had the disease for less than one year's duration before applying. Before being admitted these cases had to wait for an average period of six and a half months, mostly receiving some form of treatment in the meantime. The efficacy of that treatment could best be judged by the condition of the patients on admission. This was far from satisfactory. He stressed (1) The importance of looking on surgical tuberculosis as a local manifestation of a general infection; (2) the importance of an intimate knowledge of the patient and his environment in guiding treatment; (3) the importance of continuity in dealing with cases. For this the National Scheme of the General Committee for Care of Cripples was to be commended. According to this each authority or group of authorities should have their own special hospital in charge of a competent orthopædic surgeon. Combined with this there should be a system of clinics in outlying districts, with specially trained after-care orthopædic nurses. There would thus be a great network of special hospitals throughout the country whose staffs would be in close contact with the areas served. These, through the clinics, would provide an efficient organisation for diagnosis and after-care. He was certain that the need could not be met by large national hospitals.

Dr. J. H. Paul (Millport) explained in detail the working of a voluntary institution for surgical tuberculosis, dealing with the St. Andrew's Home, Millport, where there are 35 beds approved by the Scottish Board of Health for such cases. He had proved that real open-air treatment was possible in winter as in summer in unheated wards in Scotland. An X ray apparatus and mercury-vapour lamp had been installed, and bone tuberculosis of all types was being dealt with on conservative lines.

Dr. W. B. Knobel said that in London a child with surgical tuberculosis was not kept waiting a single day. The County Council held that affected children should be under expert treatment at the earliest possible moment. Unfortunately they could not get early cases except in a small proportion.

Dr. Marsden (Bethnal Green, London) said that this was the only form of infectious disease which was not treated as if it were infectious. No genuine results could be anticipated as long as the problem of overcrowding was allowed to remain unsolved. The whole work of the Association, he declared, was a farce unless housing was dealt with.

Sir Robert Philip (Edinburgh University) reminded the conference that this disease was not confined to the poor; it prevailed all over the world, among high and low. The disease began like a weed, and like a weed in the garden if it were taken in its early stage it could be rooted out.

The afternoon session of the first day of the conference was devoted to the subject of the

Actual Place and Function of the Tuberculosis Dispensary in the Tuberculosis Scheme

Sir Arthur Stanley again presided.

Sir Robert Philip said that the principles which had been effectively applied in relation to other infective conditions, with appropriate modifications, were applicable to tuberculosis. The tuberculosis dispensary had demonstrated the extensive ramifications of tuberculosis and collected proof of the universality of tuberculosis throughout the community. It had afforded incontrovertible evidence of the spread of infection through a household from a primary source. By getting at the cases in the earliest stage it had rendered possible the practice of anticipatory treatment, which has in view the raising of the resistance of the individual, antigenic or otherwise. Observation at the dispensary of the varying manifestations of the tuberculosis process throughout a long series of years had shown that a patient in the so-called third stage with cavity formation (regarded by many as the terminal picture) could go on comparatively fit and well for 30 years or longer. By continued observation on ambulant patients it had proved how essential was the maintenance of such supervision and how valueless the result of short periods of residential treatment. By domiciliary visitation it had succeeded in reducing the effects of unhealthy environment and re-creating insanitary houses after the image of the sanatorium. The dispensary's educational value could hardly be over-estimated. Unfortunately the ideals of the dispensary and its great possibilities were not being realised everywhere. It was common to find the tuberculosis dispensary concerned solely or chiefly with cases of pulmonary tuberculosis, although those constituted for the most part a later manifestation of the disease. The idea of using the pronounced case of infection as a clue to the earlier was overlooked or ignored.

Dr. G. Lissant Cox (central tuberculosis officer, Lancashire) discussed two important functions of the dispensary—diagnosis and prevention. In regard to diagnosis, in the county of Lancashire they had five large dispensary areas, with an average population of 350,000. Each area was in charge of a whole-time consultant. To assist those consultants there were eight assistant tuberculosis officers and 30 health visitors. The consultants in addition acted as visiting medical superintendents of pulmonary hospitals, and were paid from £950 to £1150 per annum. Each consultant had his own laboratory and trained laboratory workers and his own X ray apparatus. Dr. Cox attached great importance to having, for diagnosis, a real specialist with his own laboratory, X ray plant, and observation beds in a hospital. As to prevention, in the past too much emphasis had been laid on treatment rather than prevention. He could even remember being warned that if he did not make better provision for treatment—that was handing out bottles of cod-liver oil—they might not earn the Government grant for their scheme. To illustrate the preventive function of the work he said that the cordial relations existing between dispensary staff and practitioners resulted in a great increase in the notifications of cases of tuberculosis. The non-notified cases fell from 303 in 1918 to 66 in 1925. When infective pulmonary cases lived at home the dispensary staff made efforts to secure for the patient a separate bed. Necessitous cases could obtain these on loan from the county council. As a result of their efforts the deaths from tuberculosis in Lancashire had decreased from 107 per 100,000 in 1918 to 67 in 1925.

Dr. Knobel said the question was whether they were satisfied that under the present dispensary system they were detecting the greatest possible number of cases in the early stage of the disease. Comprehensive schemes had been built up, yet after years of work and propaganda 75 per cent. of the cases were in a more or less advanced or irremediable stage when they first came under the scheme. He regarded that as a serious criticism of the dispensary scheme, so serious that it became a question as to whether dispensaries were or were not organised on the right lines. If dispensaries failed to get hold of more than a small proportion of remediable or curable cases, then the money spent on sanatoriums was largely wasted. He suggested that the Association might consider the advisability of pressing the Government to make provision in the new Factory Bill before them for closer cooperation between factory surgeons and the tuberculosis dispensary, in order to enable them to get at the young adult type of case earlier. He also suggested the desirability of propaganda distinguishing between infective and *non-infective* cases.

Dr. **BRAND** (Clerkenwell) stated that the dispensary was an indispensable instrument in dealing with tuberculosis and should be properly organised as a centre of diagnosis. Practitioners were the potential backbone of the dispensary; with their cooperation the question of the diagnosis of contact cases was relatively simple. He urged county councils, by providing the necessary equipment and giving sufficient study leave, to make their tuberculosis dispensaries more efficient instruments than they had hitherto proved.

Dr. J. **CROCKET** (Bridge of Weir) called attention to the fact that the greatest fall in the death-rate from tuberculosis had taken place before any tuberculosis scheme was conceived. In Scotland the rate per 100,000 had fallen no less than 64 during the 12 years previous to the discovery of the tubercle bacillus in 1881. It had not fallen nearly so much in any 12-year period since. Tuberculosis was a secondary product, and best results would follow from dealing with the contributory factors in its production. Tuberculosis was due to dirt, damp, drink, and bad houses. The carrying out of Public Health Acts and of factory legislation had produced the great fall in the death-rate in the past. More thorough enforcing of the provision of those Acts would do much to cut it down still further in the future. The dispensary was an attempt to accomplish the impossible. Approximately 470,000 died of tuberculosis each year. That implied 470,000 cases of active disease and a further 470,000 potential cases. 420 tuberculosis officers could not effectively supervise home conditions, search out incipient contacts, sort out cases for treatment, give domiciliary treatment, and attend to after-care, in addition to filling up innumerable forms and compiling statistics. Dr. Crocket thought that the practitioner should be trained to do this work, being provided with such consultation service as was necessary. He protested against the present tendency to side-track the medical officer of health and have him do the legitimate work of the family physician. The main work of the medical officer of health should be to deal radically with the great causative factors in the production of the disease.

Dr. **MCCALLUM LANG** (Lanark) spoke about the difficulty in getting adolescents to come to the dispensary for diagnosis; of those who did present themselves for diagnosis less than half were found to be tuberculous. The dispensary thus prevented over-notification of tuberculosis. He thought the part played by the dispensary in the examination of contacts was over-rated.

On the second day of the conference Sir **ROBERT PHILIP** occupied the chair. Prof. **CARL BROWNING** read a paper on

Experimental Studies in Tuberculosis in Reference to the Origin of Pulmonary Tuberculosis.

He proposed to deal only with causation, since this formed the basis of measures aiming at prevention. Practically everyone in a city was liable to breathe air containing tubercle bacilli. Only a minority of those who at some time had harboured tubercle bacilli developed the disease. The objection to the view that adult tuberculosis is a development of infantile disease was that in childhood the causative organism is frequently the bovine organism, and in adult years it is practically always the human organism. The tuberculin test showed the disease to be endemic in European countries. In rural districts in countries such as India this was not so. There natives on exposure rapidly acquired and succumbed to a galloping form of the disease. Endemic tuberculosis and a mild bovine infection in childhood exercised a favourable influence, conferring partial protection. Tuberculosis of the lungs did not necessarily indicate the route of infection, but was evidence of a special predilection of the lungs for the tubercle bacilli. Among mice inoculated intraperitoneally with the human tubercle bacillus 6 per cent. showed massive broncho-pneumonic patches. Of those inoculated with the bovine strain 9 per cent. showed a similar lesion. When infected through the food 11 out of 20 animals showed pulmonary disease, and in 9 the lungs were the only organs affected. Experimental work showed that when infection is passed directly from animal to animal the virulence varies irregularly. As the result of a sojourn in one individual the organism might become highly virulent for others, although it might not produce severe disease in that individual. In the future it might become necessary to utilise methods of prophylactic immunisation to protect the population. As to a practical means of doing this, little was as yet definitely known, though Calmette and his co-workers claimed a considerable degree of success.

Dr. J. A. **WILSON** (Glasgow) read a paper on the

Age Factor in the Incidence of Tuberculosis.

The work for this paper was done on a population 79 per cent. of whom resided in houses of one or two apartments. The patients numbered 3817—1937 males and 1880 females. Statistics for tuberculosis based on the age at death were misleading. They gave an erroneous impression of the age distribution. The expectation of life from the date of sickening was calculated from tables compiled. For many years a decline in the death-rate has been recorded. Coincident with this there had been a change in the age distribution. This might be due to a higher standard of diagnosis. Under 5 years of age the expectation was low. The characteristic disease here was broncho-pneumonia or acute miliary tuberculosis. These were rapidly fatal. From 6–20 years of age the expectation of life was materially increased. The expectation figure one year after the onset was lower than the corresponding figure in the younger group. From 21–40 the expectation was better in both sexes. Fewer acute cases died within six months. The tendency to chronicity was more marked in the males. Over 41 the expectation was diminished. The figure in males was lower than that for the 6–20 group. At all ages the expectation of life was less for the female than the male. In regard to the expectation of life relative to the size of the house it was found unexpectedly that the expectation was actually greater in a one-apartment house. The incidence of the disease, on the other hand, bore a definite relationship to the size of the house. An increase in the size of the house was associated with a decrease in the average annual incidence in adults.

The figures showed three facts: (1) A striking decline in the incidence of tuberculosis at the higher ages; (2) in young adults acute disease shows practically no decline; (3) there is a definite relationship between the size of the house and incidence of tuberculosis.

Dr. A. **SMITH** (Robroyston Hospital) read a paper on the

Treatment of Tuberculosis by Sunlight.

Artificial sunlight treatment was begun at Robroyston in January, 1925. His experience was chiefly with the carbon arc lamp. In treatment he gave a general light bath, beginning with an exposure of 20 minutes, increasing this every fourth day five minutes. Pigmentation followed—brunettes deeply and quickly, blondes with difficulty, those who freckle with difficulty, and cachectic cases scarcely at all. The carbon arc produced a brown pigment just like sunlight, the tungsten arc a reddish-brown coloration, the quartz mercury vapour a yellowish-grey. His experience showed that a good result followed in cases which became well tanned. Occasionally good results accrued even without tanning. Several striking features were noted during treatment, e.g.: (1) a rapid improvement in general health; (2) a steady gain in weight; (3) lassitude gave place to a feeling of well-being and exhilaration. An overdose, on the other hand, could depress. Excellent results were obtained in almost all cases of tuberculosis of the smaller joints and of sinuses. The hope of return of mobility and function of the joint in those cases was increased. It must be remembered that fixation could not be dispensed with during light treatment. Many notes of warning had been sounded regarding the effects of ultra-violet light in reactivating pulmonary lesions Twenty pulmonary cases had been treated by him and no catastrophes had resulted He did not see why in early pulmonary disease great benefit should not follow on light treatment

Mr W **Brownhill Smith** (Glasgow) read a paper dealing with Glasgow's solution of the smoke problem He said that it would be difficult to prove that the number of cases of illness were due to the absence or even diminution of sunlight. All, however, would admit that many cases of tuberculosis and rickets were so caused It was the duty of all medical men to preach against the evils of a smoke-laden atmosphere

An interesting demonstration of radiograms of the chest was given by Dr. **Fergus Henderson** Visits were paid to various housing schemes and sanatoriums in Glasgow, as well as to Hairmyres Training Colony at East Kilbride and the Consumption Sanatoria of Scotland, Bridge of Weir

CONGRESS OF THE ROYAL SANITARY INSTITUTE

The Jubilee Congress of the Royal Sanitary Institute was held in London from July 5th to 10th The members of the Congress attended church service at Westminster Abbey on Sunday, July 4th, when the Right Rev. the Lord Bishop of Southwark presided

At the official Congress luncheon, held on July 5th at the Hotel Victoria, Sir **Archibald Garrod** referred to the value of making the acquaintance of colleagues at conferences and the consequent increased interest taken in their work. The **Duke of Northumberland** pointed out that the Congress was even more representative of this country and the Empire than usual, and expressed the belief that much benefit would result from the focusing of public attention on the matters brought forward for discussion

The inaugural address of Mr Neville Chamberlain, President of the Congress, at the Guildhall of the City of London, was read by Dr I G **Gibbon**, Assistant Secretary to the Ministry of Health

The Minister of Health in his address compared the present state of public health with that of 50 years ago, in 1876 the general mortality rate per 1000 living was 20 9, in 1925 10 7 The infantile mortality rate in 1876 was 14 6, in 1925 75 Typhus and cholera had been practically entirely overcome, the extent of enteric fever, malaria, scarlet fever, diphtheria, and tuberculosis had been very greatly reduced. But because conditions were so much better there was danger that precautions such as vaccination may be relaxed The increase of years of working life had been a great economic gain and the lengthened life of the bread-winner had made family life more secure The abolition of disgusting smells and sights had added to the amenities of life, this in its turn reacted on health After making deductions for the advance of medical treatment and the marked rise in the standard of living, a very large part of the credit was due to the measures introduced as the result of the efforts of public health reformers There should be in the coming years great advances in dealing with those suffering from or liable to mental diseases Institutional treatment should be provided for the mentally defective Old age and widow's pensions would materially contribute to health by removing serious sources of anxiety The foundation of health as well as content lay in the economic prosperity and security of the workers of a country, the greatest health victory that could be won would be the satisfactory settlement of the present industrial dispute The founders of the Royal Sanitary Institute had helped public health by making a steady effort to raise the standard of qualification of local health officials As to the future, proper methods of sewage disposal and, in rural districts, better water-supplies were required The Smoke Abatement Bill would secure substantial improvements without any harm to industry There was room for progress in the supervision of milk and other food-supplies, but there was need for purity and plenty, not purity and scarcity Much progress had been made with housing, since 1919, over 670,000 houses had been built, over 413,000 of these with assistance from the Exchequer A further 87,000 are in course of erection and 137,000 more had been authorised Progress was being made with the clearance of slums Rural housing would be the subject of some further measures Unfortunately the money available for housing was not unlimited and the pool of available skilled labour not abundant As regards the health of individuals, one of the chief needs was to obtain more coordination of the existing services; the excellent work done by Poor-law authorities should be brought into closer relation with that of other bodies, there would still be ample need of the services of boards of guardians The Minister hoped that while retaining their voluntary character the hospitals would be able to play their part in this work.

Everyman in Preventive Medicine

On the morning of July 6th the work of the sections began Opening the discussion on Everyman in Preventive Medicine, Lord **Riddell** said that most people fail to recognise that the general public were not interested in technical subjects, even when of vital importance In attempting to popularise hygienic measures, too little attention was paid to the art of knowing how to reach the man in the street

Dr A G R **Foulerton** contributed a paper which showed the effect of bacteriological work in preventing the classical scourges of armies in the field—typhoid and typhus fevers and cholera

Dr A F **Tredgold** thought that in preventive medicine the factors of inheritance received scant attention, they had been the subject of no administrative action There existed in the community a large number of persons in whom innate tendencies to physical defect, ill-health, and disease were so marked that they must inevitably give rise to similar offspring The discussion of specific eugenic proposals could be profitably undertaken by a small competent body.

Dr H P **Newsholme** held that a healthy mind was necessary to secure a healthy body The habit of unbridled imagination which encouraged a morbid growth of the emotions should be checked The imagination must be controlled by reason, if a balanced healthy outlook was to be maintained

Modern Developments in Housing

Discussing housing, Mr F **Montague**, M P, pointed out that the wage of seven-eighths of the population is not more than £150 per annum Normal housing development was extensive rather than intensive and involved the problem of transport, the construction of the house was closely related to town-planning, its purpose being to provide a home which should be the woman's workshop, arranged to suit her convenience

Mr. E C ,P **Monson**, F R I B A, emphatically declared in favour of brick, as opposed to concrete or steel for building houses The brick was the most adaptable building unit, and was cheap and simple Concrete might be suitable for factories which present large wall spaces

Mr R **Warren**, F R I B A (Ministry of Health), said that the Building Research Board of the Department of Scientific and Industrial Research had proved most valuable He gave a short account of the new methods of house construction which had been tried

Sewage Treatment

Mr H T **Calvert**, D Sc (Ministry of Health) read a paper setting out some of the principles of the activated sludge process of sewage treatment Activated sludge was produced from sewage by a process of aeration, the exact function of the oxygen of the air being yet undetermined When mixed with fresh sewage and aerated, it coagulated certain of the solids, the colloids in suspension, and the organic matters in true solution, leaving a purified effluent In this process the activated sludge lost its virtue and had to be aerated once more Much was expected of the new bio-flocculation process at Birmingham, in which the activated sludge was allowed to do its work only in part, the partially purified effluent was then passed through percolating filters at twice or thrice its ordinary rate. By this modification an effluent of any required degree of partial purification could be obtained, and a much wider application of the activated sludge process rendered possible

At the Conference of Sanitary Inspector, Mr W G **Cooper** (Bournemouth) gave a retrospect of the work of sanitary inspectors, a plea for consolidation of the Public Health Acts was made by Mr T **Topping** (Rochester), Mr F G **McHugh** (Leicester) advocated the abolition of private slaughter-houses, and Mr R **Keeley** (Lancashire C C) read a paper on the betterment of existing housing conditions

(To be concluded)

SOUTH AFRICA

(FROM OUR OWN CORRESPONDENT)

The Medical, Dental and Pharmacy Bill

IT appears that there is little hope that either the Public Health Act Amendment Bill or the Medical, Dental and Pharmacy Bill will go further this session At the second reading of the last-named Bill in the Union House of Assembly in April the Minister of the Interior (Dr Malon) commented on the long and chequered career this Bill had had in the Union Parliament He pointed out that the measure had been scrutinised It had actually been dealt with by three select committees and referred to the various medical unions and faculties of the universities The Bill represented, therefore, the agreed opinion of all the pofessions with which it proposed to deal The measure as it stood repealed no fewer than 16 laws An Emergency Act had, however, been passed in 1917 removing certain inter-provincial difficulties in regard to practice between the various provinces, particularly so with regard to chemists and druggists The Bill made provision in respect of the sale of poisons and drugs It had been asserted that South Africa was the easiest country in which to purchase poisons and drugs

Ninety-five per cent of the Bill might be regarded, he said, as non-contentious An important part of the Bill was the provision for unification of control, so that, instead of having multifarious bodies, there would be in future one medical council for South Africa and one pharmacy board Proper representation of all the provinces was provided for Registration of practitioners under the law was provided for, so that the public would know who was and who was not registered All those now practising in the various provinces would automatically be transferred to the new Register All those who could be registered under the old laws could be registered under the new law. No change was made in regard to the registration of medical practitioners from overseas Certain safeguards were laid down, for instance, that the diplomas for medical practitioners in other countries must be of the same standard as the South African diplomas

Following the Minister's speech a somewhat heated discussion arose on the clauses relating to drugless healing The Bill provides that unqualified exponents of various cults shall not practise for gain except under medical supervision The Minister of Labour, Mr Boydell, spoke strongly against the insertion of this clause It is hardly surprising, considering the difference of opinion on certain sections of the Bill in the Cabinet itself, that the Bill is not to be put through this session

Researches on Plague in South Africa

At the annual meeting of the Rand Chamber of Mines held not long ago in Johannesburg, the President, Mr P M Anderson, called attention to the experimental investigations, bacteriological and entomological in connexion with plague as it affects South Africa which had been in progress in the South African Institute for Medical Research The researches were designed to throw light upon such questions as the comparative susceptibility to plague of various veld animals the transmission of disease by feeding on infected animals that had died, the persistence of infection in deserted burrows and many bacteriological problems The entomological work consisted mainly in the collection and identification of the parasites of field rodents with subsequent breeding, longevity feeding, and transmission experiments The last-named experiments were to discover the capability of certain fleas to convey plague from rodent to rodent

During the prosecution of these researches by Dr Harvey Pirie and Dr A Ingram it was observed that a large mortality occurred among gerbilles (among the commonest carriers of plague on the veld), which was not accounted for by plague infection, and it was eventually found to be due to a disease produced by a hitherto undiscovered bacillus Experiments are now being carried out with this organism, of which details will be published at an early date Meanwhile Dr Pirie and Dr Ingram are continuing their work in close cooperation with the Union Department of Public Health

The Retirement of Dr W Watkins-Pitchford

The impending retirement on the grounds of ill-health of Dr W Watkins-Pitchford from the directorship of the South African Institute for Medical Research will be universally regretted in this country. The connexion of Dr Watkins-Pitchford with South Africa dates from the year 1897, when the Natal Government, having decided to erect a bacteriological laboratory for the study of stock diseases, commissioned him to visit and report upon the principal laboratories of Great Britain and the continent In 1899, upon the outbreak of the Boer war, he was attached to No 7 General Hospital at Estcourt in Natal, and was entrusted with its bacteriological and pathological services In 1902 he was appointed assistant bacteriologist, and in 1907 pathologist and analyst, to the Natal Government Dr Watkins-Pitchford was the first to introduce into Natal serological tests for diseases, the bacteriological examination of water and foodstuffs, and the preparation of bacterial vaccines In 1911, following upon the union of the South African States, he was transferred to Johannesburg to undertake the duties of Government bacteriologist and pathologist for the Province of the Transvaal, and was also appointed to be analyst to the municipality of Johannesburg and honorary pathologist to the General Hospital In the same year the Witwatersrand Native Labour Association initiated a scheme for establishing an institution to be devoted to the purpose of medical research, and a joint committee representing the Government and the Association was formed to carry out the project Dr Watkins-Pitchford was appointed first director of this institute and was associated with the architects in planning and designing the beautiful building which is now the South African Institute for Medical Research In 1916 Dr Watkins-Pitchford was made chairman of the Miners' Phthisis Medical Bureau, established to administer the medical sections of the Miners' Phthisis Act The high standing of the publications issued from the South African Institute for Medical Research is largely due to the careful editorial supervision of its director, who has spared no pains to make them into documented and clear accounts of the work that is proceeding It is not yet known who will succeed him in this and the many other posts which he has fulfilled so successfully

PARIS

(FROM OUR OWN CORRESPONDENT)

The Recent Small-pox Epidemic

THE director of the vaccination service of the Académie de Médecine, Dr Lucien Camus, has been giving some particulars of the recent outbreak of small-pox Its duration and importance were greater in the south than in Paris, in the Haute-Garonne 160 cases were notified with 45 deaths, in the Hérault 52 cases with 19 deaths, and in the department of the Seine 24 cases with 5 deaths, of which 14 cases and 2 deaths were in Paris The spread and course of the epidemic depended on how effectively the patients could be isolated, on the disinfection of contaminated things and places, and on the vaccination of individuals and groups of contacts In all the areas affected the first victims, who had spread the disease, were foreigners, and although arrangements for preventing transport of infected merchandise from abroad are nowadays satisfactory, there ought to be a rule that foreigners, with the exception of tourists and winter visitors, must be vaccinated before setting sail for France It is stated that in this epidemic, as in previous ones, members of hospital personnel often contracted and disseminated infection

An Antidote to HCN

Some interesting experiments with hydrocyanic acid have recently been made by Dr Violle, professor of hygiene in the Marseilles School of Medicine A concentration of 2 g of HCN per cubic metre of air will kill an animal in a few minutes, but Dr Violle has discovered that animals which have previously had a dose of glucose (by injection or by mouth) can breathe this toxic atmosphere for more than an hour without ill-effects The glucose apparently enables them to neutralise hydrocyanic acid, and the tissues are able to deal with relatively enormous quantities These remarkable findings, if confirmed, should have a practical application, since glucose might be used as a prophylactic by those whose work brings them into contact with the gas itself—e g, in cleaning ships of rats—and those who have to handle cyanide compounds

Centenary of Laënnec

Next December Paris will commemorate the hundredth anniversary of the death of Laennec A large number of foreign savants have promised to support the committee which is arranging the centenary celebrations, and it is felt that a tribute paid to the memory of Laennec can hardly leave any doctor indifferent The treasurer of the committee is M Masson, 120, Boulevard Saint Germain, Paris, VIe The full programme, which will soon be published, includes a celebration at Ploaré, Finistère, Brittany, on August 12th Laennec died at the manor of Kerlouarnec, Ploaré, on August 13th 1826

Medical Fees

Free medical service in the Paris suburbs has recently been included under the administration of the Prefect of the Seine The medical organisations (syndicats) are protesting against the unduly small fees allowed by the State for the treatment and care of indigent patients The only fees demanded by the physicians are Fr 10 for visiting a house and Fr 8 for an interview at the doctor's consulting-room These sums are certainly not remunerative, especially in view of the rising cost of living The physicians are disposed to endure present bad conditions as far as possible, and will not cease to aid the poor, but they insist on fairer treatment than that now accorded them

Modifying the Action of Insulin

Bertrand and Mâcheboeuf have just presented to the Académie des Sciences the results of experiments, made in dogs and rabbits, tending to show that certain substances are capable of modifying and reinforcing the action of insulin The addition of small quantities of nickel or cobalt seems clearly to enhance the therapeutic effects of insulin, and these results may be important in clinical practice

The Antiluetic Campaign

A conference was held at Paris on June 18th, when Prof Bayet, of Brussels, was the principal speaker He states that syphilis, after material diminution, has become almost as prevalent in France as it was before the war The increase is ascribed to wholesale immigration, to neglect of the arsenical preparations in favour of bismuth and new compounds, and to the absence of a concerted movement against syphilis In Belgium, the urging of vigorous treatment, provision of free medical care, and extremely active propaganda, have together reduced the frequency of syphilis by four-fifths, as compared with 1920–21 Prof Bayet considers that the International Union against the Venereal Peril, formed at Paris three years ago is the most effective organisation for combating venereal disease, especially because more than 40 nations are represented in it

Illegal Practice of Medicine by Foreigners

According to information supplied by the French Ministry of Justice, some 20 Russian physicians have been prosecuted for practising medicine illegally in Paris Certain privileges have been extended to Russian physicians who served with the Allies during the war but no alterations have been made or are contemplated in the law of 1892 regulating the practice of medicine in France

The last French congress on balneology and hydrology adopted a resolution looking to the creation of a new chair in therapeutic hydrology at the Faculté de Médecine of Paris All the organisations interested in climatology, hydrology, and kindred subjects have given support to the movement, and a Bill is being prepared with clauses providing for due allotment of the Government funds toward maintenance of a new department and chair

A conference on medicine, surgery, and public health, called Journées Médicales de Paris, will be held at the Grand Palais, Paris, from July 15th to 19th inclusive The programme is very complete and many eminent men will take part Further information may be had from the Secretary-General, Dr Dujarric de la Rivière, 18, rue de Verneuil, Paris, VIIe

The subjects arranged for special discussion at the neurological meeting of 1927 are (1) normal and pathological sleep, and (2) methods of exploring the vestibular apparatus The rapporteurs for the first subject are Lhermitte and Tournay, for the second Magnus (of Utrecht) and Hautant

Dr E Sorrel, surgeon in chief of the Hôpital Maritime de Berck Plage will hold a course on Surgical Tuberculosis at the hospital from July 19th to 31st Particulars may be had from Dr Delahaye, Hôpital Maritime de Berck Plage, Pas de Calais

---

SKILLED TREATMENT FOR PATIENTS OF MODERATE MEANS —The annual report has just been issued of St Chad's Hospital, Edgbaston, a self-supporting institution which treats patients who pay an inclusive fee not exceeding 12 guineas a week, and patients who pay the medical attendant independently of the nursing charge The report states that 88 per cent of the inmates pay inclusive fees, which are less than half the usual cost of the treatment they receive Twelve years' practical experience has taught the committee that the problem to be found is not to be solved by the provision of cheap nursing-home accommodation, and they feel that the hospital could be made of real value to many who cannot at present avail themselves of its help if some simple system of insurance could be provided They think that a premium of 20*s* to 25*s* per individual would be adequate, and they are prepared to accept and treat any patients insured by an outside body in approved lives at a fixed scale, irrespective of the kind of treatment required

Correspondence.

"Audi alteram partem"

SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS

To the Editor of THE LANCET

SIR,—The line of treatment to be adopted with perforated gastric and duodenal ulcers has been a frequent subject of discussion, and the conclusion has generally been arrived at that for a complete cure something further than simple suture will be required. Some surgeons have held views similar to those of Mr. Hughes and Mr. Ley, and have advised against the use of gastro-enterostomy. In the present discussion this line of treatment has been supported to the exclusion of all others, and the statement has been so dogmatically made that other methods are incorrect as to lead to the belief that no other views are held. This is far from being the case.

Whether gastro-enterostomy be performed at the time of the perforation will depend upon the patient's condition and the surgeons ability to carry out the anastomosis rapidly and with a minimum amount of shock, and there will often be considerable justification for the belief that it is better left. That simple suture is sufficient to bring about a permanent cure is, however, a view with which many will disagree. If it is a fact, then the whole surgery of gastric and duodenal ulceration must be incorrect, for should it alone be necessary to convert a perforated into an unperforated ulcer then chronic ulcers as a class should not require any surgical treatment. My own experience, and I think that of many other London surgeons, has emphatically shown that if such perforations are only closed and the cases are carefully followed up afterwards a very high percentage of them will show both clinically and on X ray investigation that the ulcer has persisted. I have had to operate upon 19 cases where a simple closure has been performed elsewhere by surgeons holding similar views to Mr. Hughes and Mr. Ley, and the patients have returned some months or years later with definite symptoms of chronic ulceration. In two cases they have sought treatment for a second perforation.

What percentage this number may represent it is impossible to say, as they have come from all parts of the country, but there is a smaller, and, from this aspect a more interesting group of cases which have been operated upon by my first assistant for perforation by simple closure, these have all been sent to my follow-up department to be watched, and there has not been a single case which has remained free from symptoms or has later failed to give X ray evidence of a chronic ulcer. The one important fact is that cases so treated should be watched over a considerable period, and I cannot but help feel suspicious of Mr. Hughes's statement that he has been kept informed about the majority of these cases. Even if the minority had persisted, they might form a considerable percentage of the total. Personally, I find that in a large number of early cases a gastro-enterostomy can be perfectly safely performed at the first stage, but should the patient be seriously ill simple closure should alone be performed, and the gastro-enterostomy left to a later date.

My one reason for entering this controversy is the fear that if the statements of Mr. Ley and Mr. Hughes gain general acceptance the after-progress of these patients will not be adequately watched, and I am confident from my own experience that a large number of them will not only be subjected to the discomforts and disabilities of recurrent ulceration, but may even have their lives endangered from the onset of later hæmorrhage or perforation.

I am, Sir, yours faithfully,

A. J. WALTON.

Devonshire street, W., July 3rd, 1926.

THE LEPROSY CAMPAIGN

To the Editor of THE LANCET

SIR,—Having just completed a tour of about 40,000 miles, on behalf of the Mission to Lepers, to investigate the present situation in the light of the new treatment, and having spent some months in the largest leper home in India, I hope that a few notes on the present situation as regards leprosy treatment may be of general interest.

I have been privileged to see a great number of homes and a variety of work in India, Burma, Siam, Borneo, and the Philippines, and have been able to view at close hand the results of a number of treatments. Much has been written during the last few years on the "specific treatment" of leprosy, but I would suggest that work as important with regard to the curing of leprosy has been done on the non-specific treatment of this disease. Leprosy is par excellence a disease of the unhealthy, and unless predisposing causes such as syphilis, hookworm, constipation, and malaria are dealt with there is very much less chance of arresting the disease.[1] In addition it is important that the leper should have abundant exercise, good food, and healthy surroundings, for unless such factors are taken into account the attempt at treatment is like trying to drive a car up a hill with the brakes on! It is now an established fact that only about 3 per cent. of lepers actually die of leprosy.

Hansen said as far back as 1895: "Most maculo-anæsthetic lepers in time become purely anæsthetic, they no longer suffer from leprosy but only from its results"[2]; this was the first and most important point that Muir re-emphasised when he called leprosy a self-healing disease.[3] It cannot be too strongly stated that many lepers cannot be helped much by the new treatment, because the anæsthesia and other signs of nerve lesions are often the result of nerve destruction, the leprosy having died out.

The treatment that is meeting with most success in India is that of hydnocarpus oil or its ester mixed with 4 per cent. creosote; the camphor mixture has been abandoned, and it has been suggested by some workers that camphor is harmful.[4] The ester is used in the following proportions: hydnocarpus ester, 50 parts; olive oil (free from fatty acids), 50 parts; double distilled creosote, 4 parts. The injections are given twice a week by the method of subcutaneous infiltration as advocated by the School of Tropical Medicine of Calcutta.[5] The dose is ½ c.cm. to commence with, gradually going up to 10 or 15 c.cm. by increments of ½ c.cm. The object is to produce well-controlled reactions. It is to be remembered that any drug which will produce reactions in leprosy tends in certain stages to produce beneficial results, and in trying new remedies this factor must not be lost sight of. For the practitioner working in the tropics, it is recommended that he should use either pure hydnocarpus oil and creosote, to the extent of 4 per cent. of creosote, or the above ester mixture. Before commencing treatment one should ask oneself the question, Is there any cause which will prevent the drug to be used from exerting its maximum effect?[5] If there is such a cause, no matter how trivial it appears to be, it should be cleared up.

Finally, with regard to prognosis, it should be borne in mind that it is not alone the question of recovery that is uppermost in the patient's mind; it is also the question of ultimate deformity. So prognoses should be based on whether the disease will be arrested with or without deformity. There is little credit in arresting leprosy if the patient ends up hopelessly mutilated If the above facts are constantly kept in mind, then I feel sure that in treating leprosy satisfactory results will accrue in the really early cases —I am, Sir, yours faithfully,

---

[1] Muir: Predisposing Causes of Leprosy, THE LANCET, 1925, i., 171.

[2] Hansen and Looft: Leprosy in its Clinical and Pathological Aspects. Translated by Norman Walker. Pp. 67.

[3] Muir: Leprosy a Self-healing Disease, THE LANCET, 1924, i., 277.

[4] Samson and Limkako: Reports on Creosote as an Adjuvant in Leprosy Treatment. Philippine Journal of Science, vol. xxiii., No. 5, November, 1923.

[5] Muir and Rogers: Leprosy, p. 265.

ROBERT G COCHRANE,
Medical Secretary for the Mission to Lepers.
33, Henrietta street, Covent Garden, W C

OLEOTHORAX

To the Editor of THE LANCET

SIR,—I was much interested to see from your article on the work of Kuss and Bernou on oleothorax[1] that "this new method is attracting some interest abroad" May I point out that the method is not entirely new and that it has been practised in this country for many years? In 1913 Gibbs Lloyd and Myer Coplans in Leeds made experiments to ascertain the rate of absorption of paraffin by the peritoneum in animals Before this time research had been done by an Englishman, whose name I unfortunately forget, on the absorption of paraffin by the pleura in animals In 1913, at the International Congress of Medicine in London,[2] I brought forward the subject of paraffin injections into the pleura in the treatment of pulmonary tuberculosis and gave details of two cases in which I had employed this method Saugman, who was present, encouraged the idea of this form of treatment Since then I have given injections of paraffin into the pleural cavity on more than 200 occasions in cases of pulmonary tuberculosis and also of bronchiectasis

I had two objects in mind first, to prevent adhesions between the two layers of pleura, and secondly, to compress the lung in a manner more permanent than that which is possible by means of the introduction of gas At that time I advised that an artificial pneumothorax should always be induced before the paraffin injection, and I am still of the same opinion If paraffin is injected when the pleural layers are tightly bound together by adhesions, force is required to separate them and there is then danger of shock and of embolism Whereas, if a preliminary artificial pneumothorax is performed, there is no such danger and the pressure at which the paraffin is introduced is not of major importance I have found that when the pleura is free and the lung has been compressed by a sufficient quantity of gas, adhesions are prevented by the subsequent injection of paraffin, but that when they are thick and widespread, and consequently very little gas has been introduced, these adhesions are only increased by the paraffin and there is difficulty in getting in at the next refill One may, of course, wish to increase adhesions, but I like to reserve the paraffin treatment for those cases in which gas has already been introduced and where for one reason or another it is desirable to keep the lung compressed without frequent gas refills I look upon paraffin as an alternative to the more serious procedure of thoracoplasty As to the amounts used, I give 2 drachms for an initial dose and increase the dose gradually to 6 drachms In one case of bilateral disease in a patient who was febrile and bedridden, and for whom there was no expectation of more than a few weeks of life, I introduced in all 12 ounces of paraffin together with air on the left side, where the disease was most active There was rapid and marked improvement, and for two years the patient lived in comparative comfort She then went altogether to pieces and at the post-mortem the left lung was found to be a fibrotic mass collected round the root There were several ounces of paraffin, mixed with clear serous fluid in the pleural cavity Only about one-third of the right lung was free from signs of gross disease

The question of antiseptics has been raised I find that I was using them (essential oils together with paraffin) in 1914 I was unable to see any therapeutic advantage in them I did not find that patients for whom they were used benefited more than patients who had paraffin only In one patient an acute and dangerous pleurisy followed, the disease in the lung spreading rapidly after the use of the antiseptic. This may have been merely a coincidence, but I felt the omen to be too unfavourable to allow me to continue the treatment

I am, Sir, yours faithfully,
H DE CARLE WOODCOCK
Park square, Leeds, June 30th, 1926

ENDEMIC GOITRE IN NEW ZEALAND

To the Editor of THE LANCET

SIR,—In an annotation on the above subject which appeared in THE LANCET of May 22nd (p 988) no reference is made to what is, perhaps, one of the most remarkable facts in the valuable paper with which the annotation deals[1] The fact is this, that although 96 normal children in Christchurch received "sodium iodide in graduated doses once a week for ten weeks in each of the three terms of the year" 38 of them, or 39 per cent developed thyroid enlargement during that period

In this connexion a recent statement by McClendon[2] is of interest "Thirteen towns (of Utah) with high iodine-content of the water-supply showed 39 per cent of goitre in the schools" It is true that the percentage of goitre in school-children was higher (52 per cent.) in 13 other towns of Utah where the iodine-content of the water-supply was low, as it was also higher (55 per cent) in previously normal school-children of Christchurch who received no prophylactic treatment with iodine The fact remains, however, that 39 per cent of children both in Christchurch and in Utah develop goitre despite the adequate ingestion of iodine I am, Sir, yours faithfully,

R McCARRISON
Pasteur Institute, Coonoor, S India, June 16th, 1926

THYROID ENLARGEMENT AND THE "LACK OF IODINE" THEORY

To the Editor of THE LANCET

SIR,—Dr Fraser and Mr Tankard, in their letter of May 31st, appear to assume that the supply of iodine to the body is principally through drinking water I am not aware that any such suggestion has ever been made, although drinking water has been utilised as a medium for increasing the iodine intake of a town population

The amount of iodine in the food and drink of a locality depends, no doubt, upon the amount in the superficial layers of the soil, and has no relation whatever to the deep geological formations and the waters derived from them The intake of iodine in drinking water is probably extremely small, the body being supplied principally through vegetables, cereals, &c , and milk

McClendon, in America, has made extensive analyses, showing that the amount of iodine varies very greatly in the vegetation of different regions Similar work in this country is much wanted

I am, Sir, yours faithfully
JAMES WHEATLEY
Shrewsbury, July 1st, 1926

THE NEW HEALTH SOCIETY

To the Editor of THE LANCET

SIR,—In your editorial comment on Sir George Newman's Memorandum on the Practice of Preventive Medicine you justly term this aspect of medical practice the "fundamental principle of the future work of the medical student" Are we of the present rank and file of the profession adequately upholding this principle and putting it into practice? Or is it not the case that we are too deeply immersed in the toil and anxiety of our endeavours to promote the cure of disease to be able to find time and opportunity to deal with the individual on preventive lines? Are we trying sufficiently to educate the public to seek medical advice as a preventive rather than a curative measure? Are we instilling day by day into those who look to us for counsel the simpler precepts of healthy living? We venture to think we are not Health and the avoidance of disease depend upon our environment and our reaction thereto That the more important part of the bodily environment is determined by the individual needs no pointing out: nor the fact that unless the individual is educated in the means by which he shall adjust and control that environment he cannot be expected to succeed in attaining health

---

[1] THE LANCET June 12th p 1157

[2] Transactions Seventeenth International Congress of Medicine, Medicine Section, vi, Part II, London, 1913

[1] Hercus, Benson, and Carter Jour Hyg December 1925

[2] Proc Soc Expt. Biol and Med, 1926, xxiii, (6), 494-496

This is the fundamental idea and purpose underlying the foundation of the New Health Society Its programme is directed to translating for popular understanding and conveying to the masses the knowledge of the principles of healthy living, to teach the importance of such elementary factors as right food intestinal cleanliness exercise and sunlight in the care of the body. We offer its machinery and facilities for the use of the medical practitioner and the medical officer of health and we appeal to our colleagues for their sympathy support and cöoperation in the work we have undertaken

We are Sir yours faithfully,

(Signed) S HENNING BELFRAGE M D
BRUCE BRUCE-PORTER. K.B E, C.M G M D
HAROLD CHAPPLE M Ch, F R C S
ERNEST CLARKE M D. F R C S
IVO GEIKIE COBB M D
KENNETH GOADBY K B E L R C P. D P H.
L HADEN GUEST *M C* M P., M D.
ALFRED JORDAN C.B E, M D.
W ARBUTHNOT LANE Bart C B M S
NATHAN MUTCH F.R C.P [F R C S
HERBERT J PATERSON C B E. M C
F R C S
CALEB WILLIAMS SALEEBY M D, F R S E
WILLIAM WILLCOX K C I E. C.B, C M G,
M D. F R C P
LEONARD WILLIAMS M D

46, Southampton-row, W C July 6th, 1926

TUBERCULOSIS IN THE SHETLAND ISLANDS

To the Editor of THE LANCET

SIR—Extracted for us by Dr H Scurfield in the June *Bulletin of Hygiene* is a report by Dr J Crawford medical officer of health County of Zetland Mainland District on the tuberculosis mortality in and about Lerwick. "Tuberculosis in the Shetland Islands would seem to afford material for an extensive study of the ætiology of the disease" This is Dr H. Scurfield s remark on the report

My ignorance on the ætiology of tuberculosis in the broadest of its aspects is my excuse for the following suggestion, for I believe a similar want of data to be general amongst those who know In the report will be found that of 117 cases of tuberculosis notified during 1924 16 were of the non-pulmonary type "This is interesting because in the sanitary inspector s report we learn that the cattle slaughtered in the islands seldom show signs of tuberculosis from which we might expect non-pulmonary tuberculosis to be uncommon" (Dr Scurfield's extract) Now why should we expect any such thing? Of joint and bone lesions in 14 subjects investigated by the English Commission all save one, which was mixed infection were human tubercle; of 29 abdominal tubercle 13 were human in type of bacillus, of 9 cervical gland cases 6 were human in type Why should the fact that 16 out of 117 Shetland cases are non-pulmonary constitute the unexpected? Not certainly, because there is scanty bovine tubercle in the cattle of the islands

I would have expected less tubercle all round if here had been bovine tubercle in the islands In stating this I show, at once my ignorance and some of the lines along which investigation to the much desired enlightenment should in my humble opinion, proceed

1. The Shetland children should be subjected to some test (which I believe is not beyond our stage of knowledge to devise) and their deduced immunity (or want of it) compared with that of a comparable batch of English children who get a regular ration of tubercle in their cow's milk.

2 The cows should be tested to show how much immunity they can confer by tubercle vaccination through the milk drunk and meat eaten, and for confirmation of the sanitary inspector's report as to relative absence of bovine tubercle in the herds

3 Every human case of tubercle should be examined as to the type of bacillus

It may happen, *for anything we know to the contrary*, the parlous alleged incidence of tubercle in the Shetlands is resultant on the comparative absence of the bovine strain in the islands and consequent absence of the modicum of immunity the ingestion of constant submorbific doses of the bovine bacillus may confer in counteraction of the human type of the disease

I am Sir, yours faithfully,

W M WILLOUGHBY.

Gravesend, July 5th, 1926 M.O H, Port of London.

SOME RECENT STUDIES OF DYSENTERY: A CORRECTION.

To the Editor of THE LANCET.

SIR—In an article in THE LANCET last week (July 3rd, p 36) I am credited with having introduced a method of treating bacillary dysentery with castor oil as opposed to saline aperients This is incorrect. The castor oil treatment of bacillary dysentery was originally suggested by Dr T B Welch and Dr. C. J. Mascarenhas of the Kenya division of the East African Medical Service in a paper in the *Kenya Medical Journal* (August, 1924)

My paper was merely a statistical record of our experiences along the same lines in Uganda

I am, Sir, yours faithfully,

ARTHUR J. BOASE
East African Medical Service

New Malden, Surrey, July 2nd 1926

DONATIONS AND BEQUESTS—Mr. Edmund Turner, of Manchester left by will £3000 to his sister Janet for life, and then for Ancoats Hospital and £2000 to his sister Helen for life, with remainder to the Manchester Royal Infirmary—The late Mr William Shaw, J.P, of Martello House, Holywood Co Down left among other bequests £1000 to the Royal Victoria Hospital, Belfast, to endow a ward to be called the "Shaw Holywood" Ward.

STATE INSURANCE IN SCOTLAND—The second valuation of the Scottish approved societies shows a gross surplus of rather more than £4,000 000, of which it is expected that at least £2,500 000 will be available for distribution among 1 700,000 insured persons Every society shows a surplus and in some instances it is very large. Sir James Leishman of the Scottish Board of Health, who communicated these figures to the annual meeting of the Scottish Conference of Friendly and Approved Societies last week expressed a hope that "the medical practitioners of Scotland were not going to arouse a great distrust in their integrity, judgment, and courage, even in the face of pressure which is undoubtedly being brought to bear upon them" in the matter of certificates of fitness for work.—The Board of Health has issued a circular to insurance practitioners stating that owing to a sudden increase in the certification of claims for sickness and disablement benefit the expenditure of representative approved societies has practically doubled since the beginning of May In places the expenditure is four or five times as much as is usual at this time of year Investigation seems to indicate that a less stringent view of the statutory condition for the receipt of sickness and disablement benefit has recently been taken and the Board draws attention to the statutory condition for payment of benefit under the National Insurance Act—viz. that the insured person shall be rendered incapable of work by some specific disease or by bodily or mental disablement.

Obituary.

WILLIAM HENRY CLAYTON-GREENE, C B E, M B, CH.B CAMB, F R C S,
CHEVALIER OF THE LEGION OF HONOUR

LESS than two years after his withdrawal, when still under 50, from London surgical activities to the amenities of a much less strenuous life at Guernsey, W H Clayton-Greene died on June 29th after only two days' illness No rumour of his indisposition had reached his friends, who were shocked by the bald announcement of his sudden death when they had imagined him enjoying the quiet leisure for which he had sacrificed a brilliant career At the time of his early retirement many rumours were current as to its cause The truth was that at an age when most men are still making their reputation Clayton-Greene had long been in demand as a consultant by consultants, this type of surgical practice means an unduly large proportion of very severe cases, and involves a strain which, having accumulated a competence, he felt no longer impelled to bear It was by no means a complete withdrawal from all professional connexions, because as surgical partner in a firm of general practitioners at Guernsey he continued to do fine work It is a satisfaction to his friends that his two years there were happy ones and that he had no regrets

W H CLAYTON-GREENE

W H Clayton-Greene was born in 1874 and educated at Rossall and Corpus Christi College, Cambridge He entered at St Mary's Hospital in 1898 with the open University scholarship, and later won the Kerslake scholarship in pathology and bacteriology He qualified M R C S, L R C P in 1900, and in the following year took the M B, Ch B Camb and the F R C S He proceeded rapidly from posts as house surgeon and surgical registrar to that of surgeon to out-patients at St Mary's in 1905, when he was also appointed lecturer in anatomy to the medical school In 1911 when he was only 37, a vacancy on the full surgical staff of the hospital led to his promotion, and he held the post of surgeon to in-patients from that date until, in 1924, the unwelcome news of his retirement to the consulting staff caused real regret among colleagues and students From 1907 to 1910 Clayton-Greene was Dean of the medical school of St Mary's He was for a time surgeon to the French Hospital, to the Hampstead General Hospital, and to the Radium Institute, and during the war to the King George Hospital and to King Edward VII Hospital for Officers

Clayton-Greene served as an examiner—vigilant to maintain a high standard while not unsympathetic to those who fell below it—to many examining boards, including the University of Cambridge, the Royal College of Surgeons of England, the Conjoint Board, and the Society of Apothecaries He wrote comparatively little—to the lasting regret of his pupils, his articles in the "Index of Treatment," edited by R Hutchison and J Sherren, and the later editions of Pye's "Surgical Handicraft," which was largely rewritten by him, crystallised some of his ward teaching, but too much of it remains unrecorded His incisive delivery and a somewhat dogmatic manner made him a popular lecturer He would stride into a lecture theatre, start speaking almost before he had reached the table, and give a balanced and critical discourse on any subject in surgery There was no disease, however obscure its pathology or indefinite its course, that he could not fix as a clear picture in the minds of his hearers Students took no liberties with Clayton-Greene, few dared to be late at his classes or operations, his own punctuality was disconcerting, for he always seemed to be ready in advance of time, seated in the theatre, impatiently swinging a leg To be house surgeon to Clayton-Greene was the ambition of every St Mary's student, and no better training in efficient workmanship could be found True, he did not suffer fools gladly, and he was unsparing in his condemnation of any slackness or inefficiency which endangered the success of an operation, or militated against the comfort of a patient To those who showed ability and zeal he was always willing to give help from his wide experience, and, when this seemed to conflict with accepted teaching, to discuss the points at issue

Clayton-Greene's operative skill and precision and judgment were famous outside his own school, and drew visitors from other hospitals at home and abroad to his demonstrations He was a dramatic figure in the London surgical world, and many who had not the privilege of knowing him personally will regret his untimely death

A former colleague writes —" It is nearly 30 years since I first met Clayton-Greene, and every year of our friendship has only served to deepen and confirm my first impressions of him One could not be with him for more than a very short time without realising that one had to deal with a man of very marked individuality, and of more than average ability Others can speak of his technical skill as a surgeon, of his wonderful teaching powers, of his intimate and detailed knowledge of everything which bore on the science of his profession Only to those who lived with him was it given to know what anxious thought he gave all the time to every case under his care, and how much of his life he gave to his patients In his earlier days, when serious cases were not so numerous in his practice as they became later, there was an unfailing barometer of how any bad case was doing When he was very worried, he had a little habit of twisting his hair into points If things were going well, bedtime would come and the dark hair lay smooth on his temples, but if a case was not doing well, a fringe of twisted points stuck up along his forehead There have been great surgeons who have been able to put completely out of their minds any case except when it was immediately before them, who, when they have done all that their skill can do, can go away with an easy mind Others equally great seem to have their cases always before their eyes and always in their minds, and it was to this second class that Clayton-Greene belonged.

" In little things he could be brusque and off-hand in manner, but in the more serious matters of life he had a depth and sincerity of feeling that, once experienced, formed an unbreakable bond of friendship and love. Few men have more deeply impressed themselves on their generation and seldom has a man been so much missed as 'Clayton' has been at St Mary's."

Mr. Clayton-Greene leaves a widow and two children to whom the sympathy of all his friends and colleagues will be extended.

JOHN THOMSON, M.D., LL.D. EDIN., F.R.C.P. EDIN. & LOND.

Dr. J. Thomson died at his home in Edinburgh on July 2nd, and by his death the science and practice of pædiatrics have suffered a great loss. He was a recognised leader in that branch of medicine, and his reputation was world-wide.

John Thomson was the son of Thomas Thomson, Writer to the Signet, and was born in Edinburgh in 1856. He was sent to Edinburgh Academy and Edinburgh University, and, except for a period of study in Berlin and Vienna and a term of duty as resident medical officer at the Hospital for Sick Children, Great Ormond-street, London, his life work was done in Edinburgh. Soon after graduating, in 1881, he began to specialise in diseases of children. His work with Prof. Henoch in Berlin had confirmed a natural bent, and for over 40 years he worked at his subject with an interest that was always intense and that seemed to deepen and broaden without losing any of its heat as the years went on.

JOHN THOMSON.

In 1888 he became a Fellow of the Royal College of Physicians in Edinburgh. In the following year the New Sydenham Society published his translation of Henoch's "Diseases of Children," and a long association with the Royal Hospital for Sick Children was begun with his appointment as assistant physician. Nine years later, as the result of his teaching experience there, he published "The Clinical Study and Treatment of Sick Children," a book which established his reputation as one of the most careful clinical observers of his day. The most striking characteristic of his work was its accuracy and thoroughness: all that he wrote was based on his own experience, and he never wrote until he was sure. At a time when the growth of bacteriology and biochemistry seemed to threaten that the medical practitioner would become a mere collector of material for the laboratory specialist, he was born to demonstrate the value of clinical tradition. An excellent memory and a systematic mind enabled him to control the mass of detail which he observed, and to reduce it to order for the benefit of medical practitioners in his books and papers, and, like his friend, the late Sir James Mackenzie, he had an almost passionate desire to get at the truth.

As a teacher Thomson excelled in the out-patient room and at the bedside, where his painstaking investigation of cases and his kindly dealing with the little patients and their mothers were an example and inspiration to his students. In the lecture-room his natural diffidence made him less impressive, though the substance of his teaching was always of the highest order. At the time when he began practice in Edinburgh there were few facilities for the study of the diseases of children. The change that has taken place was to some extent inevitable, but was hastened by his influence. He started an out-patient clinic for children in connexion with the New Town Dispensary. He had much to do with the founding and working of the Edinburgh Cripple Children's Aid Society, and for over 20 years he conducted a weekly out-patient clinic for mentally defective children at the Royal Hospital for Sick Children, the only one of its kind in this country. He succeeded the late Sir William Gairdner as honorary consulting physician to the Royal Scottish National Institution for mentally defective children at Larbert. By his work on mental deficiency in children he did much to draw attention to its importance, and was largely responsible for the interest now taken in it everywhere. In late years the value of his services was generally recognised, and only a few months ago the Royal College of Physicians of London conferred on him an honorary Fellowship, at which he was greatly pleased.

The usefulness of Thomson's life, however, is only feebly reflected in a list of academic honours, and an indication of it may rather be found in his written work and in the tribute of those who learned from him. Of his many contributions to the literature of pædiatrics perhaps the most valuable were those on congenital hypertrophic pyloric stenosis and on *B. coli* infections of the urinary tract in childhood, both of which subjects he did much to bring to the notice of the profession in this country. His deep interest in the problems of mental deficiency led to the publication of a booklet entitled "Opening Doors," written to help the mothers of these unfortunate children, which is full of sympathetic insight and charm, and reflects the courage and hopefulness with which he faced the difficult cases they presented. His chief literary monument, however, is his great text-book, which, embodying as it does the observations and experience of a life time, is a mine of valuable and accurate information. Fortunately, he had been able to complete a new edition of it shortly before his death.

"When all is said," writes Dr. Robert Hutchison, "it is not as the accomplished physician and great clinical observer and teacher that his friends and pupils will always remember John Thomson, but as the humble-minded Christian gentleman that he was. Modest to a fault in his estimate of his own achievements, he was always charitable in his judgment of others. He was indeed, full of charity in the Apostle's sense; he was long suffering and kind, he envied not, vaunted not himself, was not puffed up, thought no evil. It was surely fitting that his whole life should have been devoted to the welfare of children, for he had in his own character much of the simplicity and artlessness of the child, and of such we know is the Kingdom of Heaven."

Dr. Thomson married, in 1887, Isobel, daughter of the Rev. John McPhail, of Benbecula, who survives him. He leaves three sons and two daughters.

WALTER FRANCIS RAPHAEL CASTLE, D S C, M D Camb, M R C P Lond

By the death of Dr Walter Castle, on July 1st, the medical profession loses a man who showed every promise of attaining to the front rank He died at the age of 34, and his medical career was interrupted for several years by the war, but in a comparatively short period of practice he had made himself an able dermatologist Educated at Wellington, Castle distinguished himself in all forms of sport and was head of his house He was for two years in the Eleven and in the Fifteen for three, whilst still a schoolboy he played for the Harlequins At school he was undefeated at every distance at swimming and he won the silver medal for the Public Schools heavy-weight boxing A damaged hand, however, prevented his winning further distinction in sport when he went up to Trinity College, Cambridge, where he studied for medical degrees In 1913 he took the Natural Sciences Tripos (Part I) and went on to the London Hospital, where he made many friends His success as a student seemed assured, but the natural sequence of events was changed in the following year when the war broke out, and Castle became a surgeon-probationer in the Navy In 1916 he took the L M S S A. and afterwards he was promoted surgeon serving first in the North Sea and then in the Baltic Whilst on duty with the Archangel Expedition he was awarded the Distinguished Service Cross for conspicuous gallantry After the war he settled down again to the medical career he had chosen, graduating in medicine at Cambridge in 1920 and proceeding to the M D degree in 1923 A year later he became M R C P Lond, and as dermatologist to the Queen's Hospital for Children, to the West End Hospital for Nervous Diseases, and to the Kensington, Fulham, and Chelsea General Hospital, was gaining valuable experience which had already borne fruit in a number of original articles in medical journals "His patients," writes a colleague, "will remember him as a man of surpassing kindliness, who spared himself no trouble on their behalf, quick and just in judgment, with the inestimable gift of 'being right' To his friends he will remain for all time the dearest, most open-hearted of men his kindly words, his cheery smile, his apt remark for the occasion are indelibly impressed upon our memories"

In 1921 Dr Castle married Kathleen, daughter of Mr and Mrs Charles D Seligman He leaves a son and a daughter

The late Dr Neil Maclay—The death took place suddenly on June 21st, at Bamburgh, of Dr Neil Maclay, of Newcastle-on-Tyne, at the age of 53 Dr Maclay had gone to Bamburgh for a short holiday He studied at the University of Glasgow and qualified M B and C M in 1895 For many years he had practised as a throat, nose, and ear specialist in Newcastle, where he was hon surgeon to the Throat and Ear Hospital, and aural surgeon to the Infectious Diseases Hospital He was also a trustee of the Throat and Ear Hospital, and was a past-president of the Newcastle Glasgow University Club Dr Maclay contributed numerous articles to medical journals He leaves a widow and one son

Treatment Centres for Venereal Disease—A schedule of centres approved by the Minister of Health (June, 1926) for the treatment of venereal diseases has been issued by the Ministry The days and hours of the clinics, and the facilities for irrigation treatment of gonorrhœa are detailed in the list, which supersedes that published in May, 1924

New Hospital at Barton-upon-Irwell—The Earl of Derby and Sir Thomas Robinson, M P, on July 2nd, laid the foundation-stones of the Poor-law Hospital at Davyhulme, near Manchester, to be erected by the guardians of the Barton-upon-Irwell Union, at a cost of over a quarter of a million pounds The hospital will have a maximum accommodation of 500 beds It will be known as the Park Hospital and will serve ten parishes with a population in the area of 170,000

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Dentists Bill

The Bill presented in the House of Commons by Mr **Albert Alexander**, and supported by Mr **Barnes**, Mr **Robert Morrison**, Mr **Thomas Henderson**, and Mr **William Hirst**, to amend the Dentists Act, 1921, provides in the first clause that nothing in Section 5 of the Dentists Act, 1921, shall operate to prevent the carrying on of the business of dentistry by a society registered under the Industrial and Provident Societies Act, 1893, or the Friendly Societies Act, 1896 (*a*) if the business of such society, so far as it relates to the business of dentistry, is under the control and management of a superintendent who is a duly registered dentist, whose name has been forwarded to the registrar appointed under the Dentists Act, 1921, to be entered by him in a register to be kept for that purpose, (*b*) if in every premises where such business is carried on, and is not personally conducted by the superintendent, such business is bona fide conducted by a manager or assistant who is a duly registered dentist, (*c*) if all the operating staff are registered dentists

HOUSE OF COMMONS

Wednesday, June 30th

Venereal Disease in the Navy

Mr **Basil Peto** asked the First Lord of the Admiralty whether the incidence of venereal disease in the Navy had increased or diminished in the last three years, and what was the general view of the Naval Medical Service as to the value of the preventive measures that had been employed —Mr **Bridgeman** replied For the years 1922, 1923, and 1924 (the latest for which figures are available) the statistics indicate a slow but steady decrease in the incidence of venereal diseases in the Royal Navy Various preventive measures are employed—moral, physical, and medical—and it is generally considered that these have contributed collectively to the reduction

Invaliding Procedure in the Navy

Mr **Hore-Belisha** asked the First Lord of the Admiralty what procedure was followed in the case of those men invalided from His Majesty's Navy who desired to question the decision of the medical officer, which deprived them of pension rights, and whether the medical officer's report, which was the basis of the complaint, was referred to and taken as evidence of the correctness of that report —Mr **Bridgeman** replied All representations made by the rating prior to the medical survey are carefully considered by the Board of Survey These and any further representations made by him or on his behalf subsequent to the invaliding are carefully investigated by the medical authorities at the Admiralty in conjunction with the rating's medical history and with reference to conditions of his service Any medical report which may be the basis of the complaint is referred to and taken as evidence subject to further investigations or other evidence

Margarine for Butter in Poor law Institution

Mr **Lansbury** asked the Minister of Health whether he consulted his medical advisers before recommending the West Ham board of guardians to substitute margarine for butter in the dietaries prescribed for patients in the institution at Whipps Cross, and whether he would lay on the table of the House any statement he had received from such advisers wherein it was stated that the dietetic value of margarine was equal to that of butter —Sir **Kingsley Wood** replied My right hon friend has not recommended the West Ham board of guardians to make the substitution suggested The dietary of this institution is supervised by the medical officer of the institution With regard to the dietetic value of margarine I may refer the hon Member to the special report on "Diet in Relation to Normal Nutrition," issued by my department in 1921

Feeding of Miners' Children

Sir **Harry Brittain** asked the Minister of Health what attention was being given to the feeding of miners' children affected by the coal stoppage, whether reports had been received from the different sections of the country involved, and if so, what was the nature of those reports —Mr **Neville Chamberlain** replied I am keeping in constant touch through my general inspectors with the areas affected by the coal stoppage, and in reporting to me they have, at my request, paid special attention to the condition of the children A large amount of assistance is being given by the supply of meals and other food, and there is no evidence of malnutrition of children.

THURSDAY, JULY 1ST

Death in Bedford Prison

Mr PETHICK-LAWRENCE asked the Home Secretary whether he had any further statement to make with regard to his action relating to the death of Mr Reginald Russell in Bedford prison on May 23rd —Sir W JOYNSON-HICKS replied I have now given directions that the engagement of the prison medical officer, which was suspended in the course of the inquiry, shall be terminated, and that the governor, who has reached pensionable age, shall be required to retire from the service and be relieved from duty forthwith. The chief officer who has been on probation will be transferred to another prison in his former rank of principal officer, and the hospital officer will be reprimanded

New Factories Bill

Lord HENRY CAVENDISH-BENTINCK asked the Home Secretary whether he proposed under the new Factories Bill to make provision for the better regulation of offices and of underground workrooms —Sir W JOYNSON-HICKS replied · I would ask the noble lord to await the issue of the Bill which I hope to introduce this month

Qualifications of Meat Inspectors

Mr HURD asked the Minister of Health what steps were being taken to ensure that inspectors responsible for meat imports had veterinary knowledge so that they might more effectively perform their duties —Mr NEVILLE CHAMBERLAIN replied I am advised that a veterinary qualification though desirable, is not essential for the examination of imported meat from the public health point of view

Motorists and Dangerous Driving

Colonel DAY asked the Home Secretary the number of motorists in England and Wales, excluding the Metropolitan police district, who had been fined for exceeding the speed limit and/or for driving to the danger of the public, the number acquitted and the number convicted for the 12 months to the last convenient date. and the gross amount of fines and the sentences imposed —Sir W JOYNSON-HICKS replied The particulars asked for are not available In the returns furnished by the police for the purpose of compiling the criminal statistics, cases of these offences are included with other offences under a general heading for offences by motorists

Syphilis and Gonorrhœa in the Navy

Dr VERNON DAVIES asked the First Lord of the Admiralty if he would state the incidence in the Navy at home and abroad of syphilis and gonorrhœa during the last three years for which statistics were available, and in how many of these cases were preventive measures adopted —Mr DAVIDSON (Parliamentary Secretary to the Admiralty) replied · The incidence in the Navy at home and abroad of syphilis and gonorrhœa during the years 1922, 1923, and 1924 (latest figures available), is as follows —

	Ratio per 1000 sick daily		
	1922	1923	1924
Syphilis (first record)	0·70	0·96	0·53
,, (latest record)	1·16	1·02	0·84
Gonorrhœa (acute)	3·17	2·89	2·68
,, (sequelæ)	1·28	1·29	1·23

He expressed regret that no statistics were available of the number of cases in which preventive measures were adopted

MONDAY, JULY 5TH

Venereal Disease among Civil Population

Dr. VERNON DAVIES asked the Minister of Health if he had any evidence showing a lessened incidence of venereal disease amongst the civil population of this country and, if so, had he formed any opinion as to the cause of this diminution.—Mr NEVILLE CHAMBERLAIN replied As my hon friend is no doubt aware, there is no compulsory notification of cases of venereal disease in this country I am, however, advised that the returns received from the treatment centres indicate that there has been a considerable reduction during the past five years in the incidence of these diseases, and particularly of syphilis, amongst the civilian population One of the objects of the centres is to render the patients non-infective with a view to preventing the spread of venereal diseases, and I am advised that this part of the work of the centres has contributed specially to the decline in the incidence of these diseases I may refer also to the fact that the recorded mortality from syphilis, and other conditions due to syphilis, has fallen considerably since the institution of special measures for the treatment of venereal diseases.

Colonial Medical and Sanitary Services

Mr HERBERT WILLIAMS asked the Secretary of State for the Colonies whether his department was organised solely on a regional basis or whether in addition to the regional organisation, there was a staff devoted to the study of the various problems of health, agriculture, veterinary services and geological survey —Mr AMERY replied. The Colonial Office is organised primarily on a regional basis There is also a general department, which is concerned with correspondence of a general and miscellaneous character The study of the various problems mentioned in the question is promoted by reference to various committees and expert advisers such as the Colonial Advisory Medical and Sanitary Committee the Colonial Survey Committee, &c I have also recently appointed a chief medical adviser to the Colonial Office, who will advise me on medical and sanitary problems arising in connexion with the colonies and protectorates

Local Authorities and Mental Defectives

Sir COOPER RAWSON asked the Minister of Health if he had received representations from local authorities with regard to the increase of mental defectives in the country and the increasing cost of maintaining and extending institutional treatment, the effect of which was usually unsatisfactory and ineffective and whether he had considered the desirability of introducing legislation for compulsory segregation or such other methods as might be considered necessary for preventing an increase in the number of cases —Sir KINGSLEY WOOD replied The answer to the first part of the question is in the affirmative, but my right hon. friend is not aware of evidence to indicate that the incidence of mental defect is increasing Though the cost of maintaining and extending institutional treatment is heavy my right hon friend cannot accept the suggestion that it is usually either unsatisfactory or ineffective. The Mental Deficiency Act of 1913 already provides machinery by which defectives can be segregated or placed under guardianship or supervision The absence of sufficient institutional accommodation is hampering the operation of the Act, and local authorities have been urged to make further provision.

Kingston Nursing Association

Mr PENNY asked the Minister of Health if he could give the name and qualifications of the medical officer appointed by his department to inquire into the administration of the Kingston Nursing Association, and whether any previous investigations had been carried out in regard to the association.—Sir KINGSLEY WOOD replied · The officer in question is a member of the medical staff of the Ministry of Health, but my right hon. friend does not think any useful purpose would be served by giving the officer's name. For the decisions based on the investigation of this officer, however, I may refer my hon friend to the Minister's letter to the chairman of the Association (see THE LANCET, p 103) of which I am sending him a copy The maternity home belonging to the Association had been inspected on two previous occasions by medical officers of my right hon. friend's department in 1921 and 1925

New Draft Milk and Dairies Order

Brigadier-General CLIFTON BROWN asked the Minister of Health whether he was issuing a new draft Milk and Dairies Order; if so, on what date was it proposed that the Order should come into operation, and when would copies of the Order be available —Sir KINGSLEY WOOD replied: Yes, Sir. The Order has now been settled and will come into operation on Oct 1st. Copies should be available in the course of a week or so

Naval Hospital at Hong-Kong

Mr PENNY asked the First Lord of the Admiralty whether he would consider the desirability of disposing of the naval hospital at Hong-Kong, in view of the offer from the Hong-Kong Government to place a special department of the new nursing home being erected there at our disposal.—Mr DAVIDSON replied I am not aware of any offer on the lines suggested by my hon. friend.

TUESDAY, JULY 6TH.

R A M C Increases of Pay

Sir FREDRIC WISE asked the Secretary of State for War what was the extra cost for certain increases in the rates of pay, retiring gratuities, &c., of the Army Medical Corps, Dental Corps, and Veterinary Corps —Sir L. WORTHINGTON-EVANS replied The extra cost is estimated at £76 000 per annum.

Death and Sickness Rate in Gold Coast

Lieut -Commander KENWORTHY asked the Secretary of State for the Colonies the death and sickness rate amongst the natives employed in the gold-mining industry of the Gold Coast Colony during the last complete year for which statistics are available —Mr ORMSBY-GORE replied. From figures which have been supplied to me by the officer administering the government of the Gold Coast it would appear that the death-rate per 1000 amongst all labour, surface and underground, in the gold mines in the Gold Coast is approximately 8 3 No reliable figures are available as to the sicknesss rates.

St. Robert Mello Library
S.M.S. MEDICAL COLLEGE
LIBRARY
138

WALTER FRANCIS RAPHAEL CASTLE, D S C, M D CAMB, M R C P LOND

BY the death of Dr Walter Castle, on July 1st, the medical profession loses a man who showed every promise of attaining to the front rank He died at the age of 34, and his medical career was interrupted for several years by the war, but in a comparatively short period of practice he had made himself an able dermatologist Educated at Wellington, Castle distinguished himself in all forms of sport and was head of his house He was for two years in the Eleven and in the Fifteen for three; whilst still a schoolboy he played for the Harlequins At school he was undefeated at every distance at swimming, and he won the silver medal for the Public Schools heavyweight boxing A damaged hand however, prevented his winning further distinction in sport when he went up to Trinity College, Cambridge, where he studied for medical degrees In 1913 he took the Natural Sciences Tripos (Part I) and went on to the London Hospital, where he made many friends His success as a student seemed assured, but the natural sequence of events was changed in the following year when the war broke out, and Castle became a surgeon-probationer in the Navy In 1916 he took the L M S S A and afterwards he was promoted surgeon serving first in the North Sea and then in the Baltic Whilst on duty with the Archangel Expedition he was awarded the Distinguished Service Cross for conspicuous gallantry After the war he settled down again to the medical career he had chosen, graduating in medicine at Cambridge in 1920 and proceeding to the M D degree in 1923 A year later he became M R C P Lond, and as dermatologist to the Queen's Hospital for Children, to the West End Hospital for Nervous Diseases, and to the Kensington, Fulham, and Chelsea General Hospital was gaining valuable experience which had already borne fruit in a number of original articles in medical journals "His patients," writes a colleague, "will remember him as a man of surpassing kindliness, who spared himself no trouble on their behalf, quick and just in judgment with the inestimable gift of 'being right' To his friends he will remain for all time the dearest, most open-hearted of men his kindly words, his cheery smile, his apt remark for the occasion are indelibly impressed upon our memories"

In 1921 Dr Castle married Kathleen, daughter of Mr and Mrs Charles D Seligman He leaves a son and a daughter

---

THE LATE DR NEIL MACLAY—The death took place suddenly on June 21st, at Bamburgh, of Dr Neil Maclay, of Newcastle-on-Tyne, at the age of 53 Dr Maclay had gone to Bamburgh for a short holiday He studied at the University of Glasgow and qualified M B and C M in 1895 For many years he had practised as a throat, nose, and ear specialist in Newcastle, where he was hon surgeon to the Throat and Ear Hospital, and aural surgeon to the Infectious Diseases Hospital He was also a trustee of the Throat and Ear Hospital, and was a past-president of the Newcastle Glasgow University Club Dr Maclay contributed numerous articles to medical journals He leaves a widow and one son

---

TREATMENT CENTRES FOR VENEREAL DISEASE—A schedule of centres approved by the Minister of Health (June, 1926) for the treatment of venereal diseases has been issued by the Ministry The days and hours of the clinics, and the facilities for irrigation treatment of gonorrhœa are detailed in the list, which supersedes that published in May, 1924

NEW HOSPITAL AT BARTON-UPON-IRWELL—The Earl of Derby and Sir Thomas Robinson, M P, on July 2nd, laid the foundation-stones of the Poor-law Hospital at Davyhulme, near Manchester, to be erected by the guardians of the Barton-upon-Irwell Union, at a cost of over a quarter of a million pounds The hospital will have a maximum accommodation of 500 beds It will be known as the Park Hospital and will serve ten parishes with a population in the area of 170,000

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Dentists Bill

THE Bill presented in the House of Commons by Mr ALBERT ALEXANDER, and supported by Mr BARNES, Mr ROBERT MORRISON, Mr THOMAS HENDERSON, and Mr WILLIAM HIRST, to amend the Dentists Act, 1921, provides in the first clause that nothing in Section 5 of the Dentists Act, 1921, shall operate to prevent the carrying on of the business of dentistry by a society registered under the Industrial and Provident Societies Act, 1893, or the Friendly Societies Act, 1896 (*a*) if the business of such society, so far as it relates to the business of dentistry, is under the control and management of a superintendent who is a duly registered dentist, whose name has been forwarded to the registrar appointed under the Dentists Act, 1921, to be entered by him in a register to be kept for that purpose, (*b*) if in every premises where such business is carried on, and is not personally conducted by the superintendent, such business is bona fide conducted by a manager or assistant who is a duly registered dentist, (*c*) if all the operating staff are registered dentists

HOUSE OF COMMONS

WEDNESDAY, JUNE 30TH

Venereal Disease in the Navy

Mr BASIL PETO asked the First Lord of the Admiralty whether the incidence of venereal disease in the Navy had increased or diminished in the last three years, and what was the general view of the Naval Medical Service as to the value of the preventive measures that had been employed.—Mr BRIDGEMAN replied For the years 1922, 1923, and 1924 (the latest for which figures are available) the statistics indicate a slow but steady decrease in the incidence of venereal diseases in the Royal Navy Various preventive measures are employed—moral, physical, and medical—and it is generally considered that these have contributed collectively to the reduction

Invaliding Procedure in the Navy

Mr HORE-BELISHA asked the First Lord of the Admiralty what procedure was followed in the case of those men invalided from His Majesty's Navy who desired to question the decision of the medical officer, which deprived them of pension rights and whether the medical officer's report, which was the basis of the complaint, was referred to and taken as evidence of the correctness of that report—Mr BRIDGEMAN replied All representations made by the rating prior to the medical survey are carefully considered by the Board of Survey These and any further representations made by him or on his behalf subsequent to the invaliding are carefully investigated by the medical authorities at the Admiralty in conjunction with the rating's medical history and with reference to conditions of his service Any medical report which may be the basis of the complaint is referred to and taken as evidence subject to further investigations or other evidence

Margarine for Butter in Poor-law Institution

Mr LANSBURY asked the Minister of Health whether he consulted his medical advisers before recommending the West Ham board of guardians to substitute margarine for butter in the dietaries prescribed for patients in the institution at Whipps Cross, and whether he would lay on the table of the House any statement he had received from such advisers wherein it was stated that the dietetic value of margarine was equal to that of butter—Sir KINGSLEY WOOD replied My right hon friend has not recommended the West Ham board of guardians to make the substitution suggested The dietary of this institution is supervised by the medical officer of the institution With regard to the dietetic value of margarine I may refer the hon Member to the special report on "Diet in Relation to Normal Nutrition," issued by my department in 1921

Feeding of Miners' Children

Sir HARRY BRITTAIN asked the Minister of Health what attention was being given to the feeding of miners' children affected by the coal stoppage, whether reports had been received from the different sections of the country involved, and if so, what was the nature of those reports—Mr NEVILLE CHAMBERLAIN replied: I am keeping in constant touch through my general inspectors with the areas affected by the coal stoppage, and in reporting to me they have, at my request, paid special attention to the condition of the children A large amount of assistance is being given by the supply of meals and other food, and there is no evidence of malnutrition of children.

THURSDAY, JULY 1ST

Death in Bedford Prison

Mr **PETHICK-LAWRENCE** asked the Home Secretary whether he had any further statement to make with regard to his action relating to the death of Mr Reginald Russell in Bedford prison on May 23rd —Sir W **JOYNSON-HICKS** replied I have now given directions that the engagement of the prison medical officer, which was suspended in the course of the inquiry, shall be terminated, and that the governor, who has reached pensionable age, shall be required to retire from the service and be relieved from duty forthwith The chief officer who has been on probation will be transferred to another prison in his former rank of principal officer, and the hospital officer will be reprimanded

New Factories Bill

Lord **HENRY CAVENDISH-BENTINCK** asked the Home Secretary whether he proposed under the new Factories Bill to make provision for the better regulation of offices and of underground workrooms —Sir W **JOYNSON-HICKS** replied I would ask the noble lord to await the issue of the Bill which I hope to introduce this month

Qualifications of Meat Inspectors

Mr **HURD** asked the Minister of Health what steps were being taken to ensure that inspectors responsible for meat imports had veterinary knowledge so that they might more effectively perform their duties —Mr **NEVILLE CHAMBERLAIN** replied I am advised that a veterinary qualification, though desirable, is not essential for the examination of imported meat from the public health point of view

Motorists and Dangerous Driving

Colonel **DAY** asked the Home Secretary the number of motorists in England and Wales, excluding the Metropolitan police district, who had been fined for exceeding the speed limit and/or for driving to the danger of the public, the number acquitted and the number convicted for the 12 months to the last convenient date, and the gross amount of fines and the sentences imposed —Sir W **JOYNSON-HICKS** replied The particulars asked for are not available In the returns furnished by the police for the purpose of compiling the criminal statistics, cases of these offences are included with other offences under a general heading for offences by motorists

Syphilis and Gonorrhœa in the Navy

Dr **VERNON DAVIES** asked the First Lord of the Admiralty if he would state the incidence in the Navy at home and abroad of syphilis and gonorrhœa during the last three years for which statistics were available, and in how many of these cases were preventive measures adopted —Mr **DAVIDSON** (Parliamentary Secretary to the Admiralty) replied The incidence in the Navy at home and abroad of syphilis and gonorrhœa during the years 1922, 1923, and 1924 (latest figures available), is as follows —

	Ratio per 1000 sick daily		
	1922	1923	1924
Syphilis (first record)	0 70	0 96	0 53
„ (latest record)	1 16	1 02	0 84
Gonorrhœa (acute)	3 17	2 89	2 68
„ (sequelæ)	1 28	1 29	1 23

He expressed regret that no statistics were available of the number of cases in which preventive measures were adopted

MONDAY, JULY 5TH

Venereal Disease among Civil Population

Dr **VERNON DAVIES** asked the Minister of Health if he had any evidence showing a lessened incidence of venereal disease amongst the civil population of this country, and, if so, had he formed any opinion as to the cause of this diminution —Mr **NEVILLE CHAMBERLAIN** replied As my hon. friend is no doubt aware, there is no compulsory notification of cases of venereal disease in this country I am, however, advised that the returns received from the treatment centres indicate that there has been a considerable reduction during the past five years in the incidence of these diseases, and particularly of syphilis, amongst the civilian population One of the objects of the centres is to render the patients non-infective with a view to preventing the spread of venereal diseases, and I am advised that this part of the work of the centres has contributed specially to the decline in the incidence of these diseases I may refer also to the fact that the recorded mortality from syphilis, and other conditions due to syphilis, has fallen considerably since the institution of special measures for the treatment of venereal diseases

Colonial Medical and Sanitary Services

Mr **HERBERT WILLIAMS** asked the Secretary of State for the Colonies whether his department was organised solely on a regional basis or whether, in addition to the regional organisation, there was a staff devoted to the study of the various problems of health, agriculture, veterinary services, and geological survey —Mr **AMERY** replied The Colonial Office is organised primarily on a regional basis There is also a general department, which is concerned with correspondence of a general and miscellaneous character The study of the various problems mentioned in the question is promoted by reference to various committees, and expert advisers such as the Colonial Advisory Medical and Sanitary Committee, the Colonial Survey Committee, &c I have also recently appointed a chief medical adviser to the Colonial Office, who will advise me on medical and sanitary problems arising in connexion with the colonies and protectorates

Local Authorities and Mental Defectives

Sir **COOPER RAWSON** asked the Minister of Health if he had received representations from local authorities with regard to the increase of mental defectives in the country and the increasing cost of maintaining and extending institutional treatment, the effect of which was usually unsatisfactory and ineffective and whether he had considered the desirability of introducing legislation for compulsory segregation or such other methods as might be considered necessary for preventing an increase in the number of cases —Sir **KINGSLEY WOOD** replied The answer to the first part of the question is in the affirmative, but my right hon friend is not aware of evidence to indicate that the incidence of mental defect is increasing Though the cost of maintaining and extending institutional treatment is heavy my right hon friend cannot accept the suggestion that it is usually either unsatisfactory or ineffective The Mental Deficiency Act of 1913 already provides machinery by which defectives can be segregated or placed under guardianship or supervision The absence of sufficient institutional accommodation is hampering the operation of the Act, and local authorities have been urged to make further provision

Kingston Nursing Association

Mr **PENNY** asked the Minister of Health if he could give the name and qualifications of the medical officer appointed by his department to inquire into the administration of the Kingston Nursing Association, and whether any previous investigations had been carried out in regard to the association —Sir **KINGSLEY WOOD** replied The officer in question is a member of the medical staff of the Ministry of Health, but my right hon friend does not think any useful purpose would be served by giving the officer's name For the decisions based on the investigation of this officer, however, I may refer my hon friend to the Minister's letter to the chairman of the Association (see THE LANCET, p 103) of which I am sending him a copy The maternity home belonging to the Association had been inspected on two previous occasions by medical officers of my right hon. friend's department in 1921 and 1925

New Draft Milk and Dairies Order

Brigadier-General **CLIFTON BROWN** asked the Minister of Health whether he was issuing a new draft Milk and Dairies Order, if so, on what date was it proposed that the Order should come into operation, and when would copies of the Order be available —Sir **KINGSLEY WOOD** replied Yes, Sir The Order has now been settled and will come into operation on Oct 1st Copies should be available in the course of a week or so

Naval Hospital at Hong-Kong

Mr **PENNY** asked the First Lord of the Admiralty whether he would consider the desirability of disposing of the naval hospital at Hong-Kong, in view of the offer from the Hong-Kong Government to place a special department of the new nursing home being erected there at our disposal —Mr **DAVIDSON** replied I am not aware of any offer on the lines suggested by my hon friend

TUESDAY, JULY 6TH

R A M C Increases of Pay

Sir **FREDRIC WISE** asked the Secretary of State for War what was the extra cost for certain increases in the rates of pay, retiring gratuities, &c, of the Army Medical Corps, Dental Corps, and Veterinary Corps —Sir L. **WORTHINGTON-EVANS** replied The extra cost is estimated at £76,000 per annum

Death and Sickness Rate in Gold Coast

Lieut -Commander **KENWORTHY** asked the Secretary of State for the Colonies the death and sickness rate amongst the natives employed in the gold-mining industry of the Gold Coast Colony during the last complete year for which statistics are available —Mr **ORMSBY-GORE** replied From figures which have been supplied to me by the officer administering the government of the Gold Coast, it would appear that the death-rate per 1000 amongst all labour, surface and underground, in the gold mines in the Gold Coast is approximately 8 3 No reliable figures are available as to the sicknesss rates

S.M.S. MEDICAL COLLEGE
LIBRARY

36

WALTER FRANCIS RAPHAEL CASTLE, D S C, M.D CAMB, M R C P LOND

BY the death of Dr Walter Castle, on July 1st, the medical profession loses a man who showed every promise of attaining to the front rank He died at the age of 34, and his medical career was interrupted for several years by the war, but in a comparatively short period of practice he had made himself an able dermatologist Educated at Wellington, Castle distinguished himself in all forms of sport and was head of his house He was for two years in the Eleven and in the Fifteen for three, whilst still a schoolboy he played for the Harlequins At school he was undefeated at every distance at swimming, and he won the silver medal for the Public Schools heavy-weight boxing A damaged hand, however, prevented his winning further distinction in sport when he went up to Trinity College, Cambridge, where he studied for medical degrees In 1913 he took the Natural Sciences Tripos (Part I) and went on to the London Hospital, where he made many friends His success as a student seemed assured, but the natural sequence of events was changed in the following year when the war broke out, and Castle became a surgeon-probationer in the Navy In 1916 he took the L M S S A and afterwards he was promoted surgeon serving first in the North Sea and then in the Baltic Whilst on duty with the Archangel Expedition he was awarded the Distinguished Service Cross for conspicuous gallantry After the war he settled down again to the medical career he had chosen, graduating in medicine at Cambridge in 1920 and proceeding to the M D degree in 1923 A year later he became M R C P Lond, and as dermatologist to the Queen's Hospital for Children, to the West End Hospital for Nervous Diseases, and to the Kensington, Fulham, and Chelsea General Hospital was gaining valuable experience which had already borne fruit in a number of original articles in medical journals "His patients," writes a colleague, "will remember him as a man of surpassing kindliness, who spared himself no trouble on their behalf, quick and just in judgment, with the inestimable gift of 'being right' To his friends he will remain for all time the dearest, most open-hearted of men his kindly words, his cheery smile, his apt remark for the occasion are indelibly impressed upon our memories"

In 1921 Dr Castle married Kathleen, daughter of Mr and Mrs Charles D Seligman. He leaves a son and a daughter

---

THE LATE DR NEIL MACLAY—The death took place suddenly on June 21st, at Bamburgh, of Dr Neil Maclay, of Newcastle-on-Tyne, at the age of 53 Dr Maclay had gone to Bamburgh for a short holiday He studied at the University of Glasgow and qualified M B and C M in 1895 For many years he had practised as a throat, nose, and ear specialist in Newcastle, where he was hon surgeon to the Throat and Ear Hospital, and aural surgeon to the Infectious Diseases Hospital He was also a trustee of the Throat and Ear Hospital, and was a past-president of the Newcastle Glasgow University Club Dr Maclay contributed numerous articles to medical journals He leaves a widow and one son

---

TREATMENT CENTRES FOR VENEREAL DISEASE—A schedule of centres approved by the Minister of Health (June, 1926) for the treatment of venereal diseases has been issued by the Ministry The days and hours of the clinics, and the facilities for irrigation treatment of gonorrhœa are detailed in the list, which supersedes that published in May, 1924

NEW HOSPITAL AT BARTON-UPON-IRWELL—The Earl of Derby and Sir Thomas Robinson, M P, on July 2nd, laid the foundation-stones of the Poor-law Hospital at Davyhulme, near Manchester, to be erected by the guardians of the Barton-upon-Irwell Union, at a cost of over a quarter of a million pounds The hospital will have a maximum accommodation of 500 beds It will be known as the Park Hospital and will serve ten parishes with a population in the area of 170,000

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Dentists Bill.

THE Bill presented in the House of Commons by Mr ALBERT ALEXANDER, and supported by Mr BARNES, Mr ROBERT MORRISON, Mr THOMAS HENDERSON, and Mr WILLIAM HIRST, to amend the Dentists Act, 1921, provides in the first clause that nothing in Section 5 of the Dentists Act, 1921, shall operate to prevent the carrying on of the business of dentistry by a society registered under the Industrial and Provident Societies Act, 1893, or the Friendly Societies Act, 1896 (*a*) if the business of such society, so far as it relates to the business of dentistry, is under the control and management of a superintendent who is a duly registered dentist, whose name has been forwarded to the registrar appointed under the Dentists Act, 1921, to be entered by him in a register to be kept for that purpose, (*b*) if in every premises where such business is carried on, and is not personally conducted by the superintendent such business is bona fide conducted by a manager or assistant who is a duly registered dentist, (*c*) if all the operating staff are registered dentists

HOUSE OF COMMONS

WEDNESDAY, JUNE 30TH

Venereal Disease in the Navy

Mr BASIL PETO asked the First Lord of the Admiralty whether the incidence of venereal disease in the Navy had increased or diminished in the last three years, and what was the general view of the Naval Medical Service as to the value of the preventive measures that had been employed.—Mr BRIDGEMAN replied For the years 1922, 1923, and 1924 (the latest for which figures are available) the statistics indicate a slow but steady decrease in the incidence of venereal diseases in the Royal Navy Various preventive measures are employed—moral, physical, and medical—and it is generally considered that these have contributed collectively to the reduction

Invaliding Procedure in the Navy

Mr HORE-BELISHA asked the First Lord of the Admiralty what procedure was followed in the case of those men invalided from His Majesty's Navy who desired to question the decision of the medical officer, which deprived them of pension rights, and whether the medical officer's report, which was the basis of the complaint, was referred to and taken as evidence of the correctness of that report—Mr BRIDGEMAN replied All representations made by the rating prior to the medical survey are carefully considered by the Board of Survey These and any further representations made by him or on his behalf subsequent to the invaliding are carefully investigated by the medical authorities at the Admiralty in conjunction with the rating's medical history and with reference to conditions of his service Any medical report which may be the basis of the complaint is referred to and taken as evidence subject to further investigations or other evidence

Margarine for Butter in Poor-law Institution

Mr LANSBURY asked the Minister of Health whether he consulted his medical advisers before recommending the West Ham board of guardians to substitute margarine for butter in the dietaries prescribed for patients in the institution at Whipps Cross, and whether he would lay on the table of the House any statement he had received from such advisers wherein it was stated that the dietetic value of margarine was equal to that of butter—Sir KINGSLEY WOOD replied My right hon friend has not recommended the West Ham board of guardians to make the substitution suggested. The dietary of this institution is supervised by the medical officer of the institution With regard to the dietetic value of margarine I may refer the hon Member to the special report on "Diet in Relation to Normal Nutrition," issued by my department in 1921

Feeding of Miners' Children

Sir HARRY BRITTAIN asked the Minister of Health what attention was being given to the feeding of miners' children affected by the coal stoppage, whether reports had been received from the different sections of the country involved, and if so, what was the nature of those reports—Mr NEVILLE CHAMBERLAIN replied I am keeping in constant touch through my general inspectors with the areas affected by the coal stoppage, and in reporting to me they have, at my request, paid special attention to the condition of the children A large amount of assistance is being given by the supply of meals and other food, and there is no evidence of malnutrition of children.

THURSDAY, JULY 1ST

Death in Bedford Prison

Mr PETHICK-LAWRENCE asked the Home Secretary whether he had any further statement to make with regard to his action relating to the death of Mr Reginald Russell in Bedford prison on May 23rd —Sir W JOYNSON-HICKS replied I have now given directions that the engagement of the prison medical officer, which was suspended in the course of the inquiry, shall be terminated, and that the governor, who has reached pensionable age, shall be required to retire from the service and be relieved from duty forthwith The chief officer who has been on probation will be transferred to another prison in his former rank of principal officer, and the hospital officer will be reprimanded

New Factories Bill

Lord HENRY CAVENDISH-BENTINCK asked the Home Secretary whether he proposed under the new Factories Bill to make provision for the better regulation of offices and of underground workrooms —Sir W JOYNSON-HICKS replied I would ask the noble lord to await the issue of the Bill which I hope to introduce this month

Qualifications of Meat Inspectors

Mr HURD asked the Minister of Health what steps were being taken to ensure that inspectors responsible for meat imports had veterinary knowledge so that they might more effectively perform their duties —Mr NEVILLE CHAMBERLAIN replied I am advised that a veterinary qualification, though desirable, is not essential for the examination of imported meat from the public health point of view

Motorists and Dangerous Driving

Colonel DAY asked the Home Secretary the number of motorists in England and Wales, excluding the Metropolitan police district, who had been fined for exceeding the speed limit and/or for driving to the danger of the public, the number acquitted and the number convicted for the 12 months to the last convenient date, and the gross amount of fines and the sentences imposed —Sir W JOYNSON-HICKS replied The particulars asked for are not available In the returns furnished by the police for the purpose of compiling the criminal statistics, cases of these offences are included with other offences under a general heading for offences by motorists

Syphilis and Gonorrhœa in the Navy

Dr VERNON DAVIES asked the First Lord of the Admiralty if he would state the incidence in the Navy at home and abroad of syphilis and gonorrhœa during the last three years for which statistics were available, and in how many of these cases were preventive measures adopted —Mr DAVIDSON (Parliamentary Secretary to the Admiralty) replied The incidence in the Navy at home and abroad of syphilis and gonorrhœa during the years 1922, 1923, and 1924 (latest figures available), is as follows —

	Ratio per 1000 sick daily		
	1922	1923	1924
Syphilis (first record)	0 70	0 96	0 53
„ (latest record)	1 16	1 02	0 84
Gonorrhœa (acute)	3 17	2 89	2 68
„ (sequelæ)	1 28	1 29	1 23

He expressed regret that no statistics were available of the number of cases in which preventive measures were adopted

MONDAY, JULY 5TH

Venereal Disease among Civil Population

Dr VERNON DAVIES asked the Minister of Health if he had any evidence showing a lessened incidence of venereal disease amongst the civil population of this country, and, if so, had he formed any opinion as to the cause of this diminution —Mr NEVILLE CHAMBERLAIN replied As my hon friend is no doubt aware, there is no compulsory notification of cases of venereal disease in this country I am, however, advised that the returns received from the treatment centres indicate that there has been a considerable reduction during the past five years in the incidence of these diseases, and particularly of syphilis, amongst the civilian population One of the objects of the centres is to render the patients non-infective with a view to preventing the spread of venereal diseases, and I am advised that this part of the work of the centres has contributed specially to the decline in the incidence of these diseases I may refer also to the fact that the recorded mortality from syphilis, and other conditions due to syphilis, has fallen considerably since the institution of special measures for the treatment of venereal diseases

Colonial Medical and Sanitary Services

Mr HERBERT WILLIAMS asked the Secretary of State for the Colonies whether his department was organised solely on a regional basis or whether, in addition to the regional organisation, there was a staff devoted to the study of the various problems of health, agriculture, veterinary services, and geological survey —Mr AMERY replied The Colonial Office is organised primarily on a regional basis There is also a general department, which is concerned with correspondence of a general and miscellaneous character The study of the various problems mentioned in the question is promoted by reference to various committees, and expert advisers such as the Colonial Advisory Medical and Sanitary Committee, the Colonial Survey Committee, &c I have also recently appointed a chief medical adviser to the Colonial Office, who will advise me on medical and sanitary problems arising in connexion with the colonies and protectorates

Local Authorities and Mental Defectives

Sir COOPER RAWSON asked the Minister of Health if he had received representations from local authorities with regard to the increase of mental defectives in the country and the increasing cost of maintaining and extending institutional treatment, the effect of which was usually unsatisfactory and ineffective, and whether he had considered the desirability of introducing legislation for compulsory segregation or such other methods as might be considered necessary for preventing an increase in the number of cases —Sir KINGSLEY WOOD replied The answer to the first part of the question is in the affirmative, but my right hon friend is not aware of evidence to indicate that the incidence of mental defect is increasing Though the cost of maintaining and extending institutional treatment is heavy my right hon friend cannot accept the suggestion that it is usually either unsatisfactory or ineffective The Mental Deficiency Act of 1913 already provides machinery by which defectives can be segregated or placed under guardianship or supervision The absence of sufficient institutional accommodation is hampering the operation of the Act, and local authorities have been urged to make further provision

Kingston Nursing Association

Mr PENNY asked the Minister of Health if he could give the name and qualifications of the medical officer appointed by his department to inquire into the administration of the Kingston Nursing Association, and whether any previous investigations had been carried out in regard to the association —Sir KINGSLEY WOOD replied The officer in question is a member of the medical staff of the Ministry of Health, but my right hon friend does not think any useful purpose would be served by giving the officer's name For the decisions based on the investigation of this officer, however, I may refer my hon friend to the Minister's letter to the chairman of the Association (see THE LANCET, p 103) of which I am sending him a copy The maternity home belonging to the Association had been inspected on two previous occasions by medical officers of my right hon friend's department in 1921 and 1925

New Draft Milk and Dairies Order

Brigadier-General CLIFTON BROWN asked the Minister of Health whether he was issuing a new draft Milk and Dairies Order, if so, on what date was it proposed that the Order should come into operation, and when would copies of the Order be available —Sir KINGSLEY WOOD replied Yes, Sir. The Order has now been settled and will come into operation on Oct 1st Copies should be available in the course of a week or so

Naval Hospital at Hong-Kong

Mr PENNY asked the First Lord of the Admiralty whether he would consider the desirability of disposing of the naval hospital at Hong-Kong, in view of the offer from the Hong-Kong Government to place a special department of the new nursing home being erected there at our disposal —Mr DAVIDSON replied I am not aware of any offer on the lines suggested by my hon. friend

TUESDAY, JULY 6TH

R A M C Increases of Pay

Sir FREDRIC WISE asked the Secretary of State for War what was the extra cost for certain increases in the rates of pay, retiring gratuities, &c, of the Army Medical Corps, Dental Corps, and Veterinary Corps —Sir L WORTHINGTON-EVANS replied The extra cost is estimated at £76,000 per annum

Death and Sickness Rate in Gold Coast

Lieut -Commander KENWORTHY asked the Secretary of State for the Colonies the death and sickness rate amongst the natives employed in the gold-mining industry of the Gold Coast Colony during the last complete year for which statistics are available —Mr ORMSBY-GORE replied From figures which have been supplied to me by the officer administering the government of the Gold Coast, it would appear that the death-rate per 1000 amongst all labour, surface and underground, in the gold mines in the Gold Coast is approximately 8 3 No reliable figures are available as to the sicknesss rates

S.M.S. MEDICAL COLLEGE LIBRARY

736

Medical News.

UNIVERSITY OF CAMBRIDGE —At congregations held on June 26th and 29th the following degrees were conferred —

M D—F A Phillipps F H Young, C H Whittle, F B Smith, and J M Smith
M Ch—T M Thomas
M B and B Ch—N T Glynn, C C Halliwell, K Fletcher-Barrett, and L P Marshall
B Ch—A C Copley, J B Ellison, F W Roques, H M Woodman, J A S Brown, and H B Trumper

At the third examination for medical and surgical degrees held recently the following candidates were examined and approved —

Part I, Surgery, Midwifery, and Gynæcology—J R Armstrong, B Blaxill, R D W Butler, G D G Cameron, H M Elliott, R W B Ellis, T I Evans, R M Gilchrist, E J Greenwood G J Gross, M J Harker, L J Haydon, A J Johnson, F W Law, D F Lawson, R Marnham, R W L May, E D Moir, J W Munro, J Morris, C G E Plumstead, D S Tait, G F Taylor, R J Vince, F H A Walker, V Wigglesworth, R W Windle

Part II, Principles and Practice of Physic, Pathology, and Pharmacology—B E Ahrens, G L Alexander, J O W Bland, C K Colwill, W F Cooper, R K Debenham, T S Dewey, H V Dicks J Dockray, A B Eddowes, J B Ellison, T F Fox, H F Griffiths, J H Hannan, H J Heathcote, G G Holmes, I A Jackson, D McI Johnson S Levy Simpson, W W McLean, R H Metcalfe, R D Milford, H P Nelson, H W Nicholson, F B Parsons, W Richards, L A Richardson, F W Roques, K G Salmon G Simon, R E Smith, A W Spence, R S Starkey, B C Tate, H B Trumper V B Wigglesworth, J G Wigley, H J Wilson, F G Winterton, A T Worthington, H R Youngman

UNIVERSITY OF GLASGOW —The degree of Bachelor of Medicine and Bachelor of Surgery has been conferred on Eric G. Oastler (with commendation)

UNIVERSITY OF SHEFFIELD —At the undermentioned examinations held recently in the Faculty of Medicine the following candidates were successful —

M D—Annie Clark
Final M B, Ch B Examination—James H Blakelock, James H Fairclough, Aziz Isaac, and John D Young

UNIVERSITY OF LEEDS —At a congregation held on July 3rd the following degrees were conferred —

M D—Arthur L Taylor (with distinction), David R Allison, and Philip Rosenbloom
Ch M—George Armitage
M B, Ch B—Frederick K Beaumont, William D Bedford, and Stanley J Hartfall (with second class honours), Arthur Barratt, William H Carr, Joseph E Erdheim, Denzil Heap, Cai C Holm, Emily E Johnson, Alec Katz, Nathan Newman, Leonard B Pawson, Max Perlman, Malcolm S Scott, Sam Silverman, John E Teal, Arthur C Welch, John V Whitaker, and Eric W L White

UNIVERSITY OF BIRMINGHAM —At a congregation held on July 3rd the following degrees were conferred —

DEGREE OF DOCTOR OF MEDICINE

Gladys M Evans and Victor G Williams

DEGREES OF BACHELOR OF MEDICINE AND BACHELOR OF SURGERY

Marjorie E Crump, Athol F Downie, Margaret L A Galbraith, Louis Glass, Joseph G Green, Joan E Greener, Gilbert S Hall, David Humphreys, Roberta I Hutchinson, Marie E Jackson, Allan J Lea, John H Marshall, Cecil A Mather, Bernard L S Murtagh, Albert V Neale, Hugh S H O'Conor, Dorothy E A Reader, Niel S Robinson, Gilbert de Neville U Somers, Wilfred Summers, Percy Symons, Alexander C R Walton, John D H Wearing, and Nellie Wilkes

ROYAL COLLEGE OF SURGEONS OF ENGLAND —The annual meeting of Fellows of the College to elect four members of the Council was held on Thursday, July 1st, the President, Sir John Bland-Sutton, being in the chair There were 12 candidates for the four vacancies The President declared the following elected Mr Ernest W Hey Groves with 532 votes, Mr George Grey Turner with 426 votes, Mr Vincent [illegible] days and with 398 votes, and Mr Victor Bonney with gation treatment of gu Fellows voted det person the list, which supersedes that publis [illegible] May, 1924 of

NEW HOSPITAL AT BARTON-UPON-IRWELL —Tlan
Earl of Derby and S [illegible] as Robinson, M P, on July 2nd,
laid the fou [illegible] the Poor-law Hospital an
[illegible] ected by the guardians,
Davyh [illegible] t of over a quarter,
of [illegible] have a maximum
[illegible] own as the Park

WILLIAM GIBSON RESEARCH SCHOLARSHIP FOR MEDICAL WOMEN —The Council of the Royal Society of Medicine has awarded this scholarship to Miss Alice Bloomfield, who will hold it for two years

MENTAL HOSPITALS ASSOCIATION —The eighth annual meeting of this Association will be held in the Council Chamber of the Guildhall, London, on Wednesday, July 14th, at 11 A M

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY —A complimentary dinner was given to the President of the London and Counties Medical Protection Society, Sir John Rose Bradford on June 29th, at the Grand Hotel to celebrate his recent election to the presidency of the Royal College of Physicians of London Dr C M Fegen, Chairman of Council, occupied the chair and was supported by the vice presidents and members of Council, including the legal officers of the society

INTERNATIONAL POST-GRADUATE COURSE AT KARLSBAD —A course in medicine, with special reference to balneology, will be held at Karlsbad from Sept 12th-18th. Amongst well-known medical men from many countries who are to give lectures will be Prof George Barger, of Edinburgh, who will speak on the Chemistry of the Hormones Foreign doctors attending the course will receive special facilities from the Czecho Slovakian government and from the municipality of Karlsbad Further information may be had from the secretary of the course, Dr Edgar Ganz, Karlsbad

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION —The presidential address of this Association will be delivered on Tuesday July 13th, at 3 P M., by Lieut -Colonel J R Lord, C B E, at the house of the B M A., Tavistock square, W C, the subject being the Clinical Study of Mental Disorders On Thursday, July 15th, at 3 P.M., the Maudsley lecture will be delivered by Prof G M Robertson, President of the Royal College of Physicians of Edinburgh, who in the course of his address will survey the problems presented in the endeavour to prevent insanity On the same evening the annual dinner of the Association will take place at 7 15 P M in the Edward VII. Rooms, Victoria Hotel, London, W C

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION —Mr Rocyn-Jones will give a clinical demonstration in surgery at the Royal National Orthopædic Hospital, on Monday, July 12th, at 2 P M., and Mr Griffith will give a demonstration in ophthalmology at the Royal Eye Hospital on Wednesday, July 14th, at 3 P M. These will be open to all members of the medical profession without fee A post-graduate vacation course will be held from July 19th to 31st at the North-East London Post-Graduate College (Prince of Wales's General Hospital, Tottenham, N 15), the course is especially intended for medical men and women in active practice It will consist of morning demonstrations, each day from 10 30 A M to 12 45 P M., on modern clinical and laboratory methods included under the name of side-room work, demonstrations of groups of selected cases from 2 to 2 45 P M each day and from 2 45 P M. onwards of general hospital work, in-patient and out patient clinics, operation, and demonstration in the special department At 4 30 P M daily there will be a clinical lecture, the opening lecture of the first week will be given by Dr T W Eden on Antenatal Care as it Affects the Child in utero, and that of the second week by Lieut-Colonel L W Harrison on the Diagnosis and Treatment of Syphilis, will be illustrated by a cinematograph demonstration Visits will be made to a fever hospital and a mental hospital on Saturday mornings The names of those wishing to attend should be sent in, if possible, by July 16th There will be a late afternoon course (from 5 P M) at the West End Hospital for Nervous Diseases from July 19th to August 12th. Lectures and demonstrations on selected cases will be given in the out-patient department, 73, Welbeck-street, London W, and there will be a pathological demonstration at the in-patient department, Gloucester-gate, N W, on Monday, July 19th Practical courses in obstetrics and child welfare are to be held throughout the year at the City of London Maternity Hospital The courses will last one week and the fee is £2 2*s* Practical courses in anæsthetics can be arranged at any time From August 9th to 14th there will be an intensive course at the Brompton Hospital, from August 16th to 28th an all-day course in diseases of children at the Queen's Hospital, and from August 23rd to Sept 7th an all day course in medicine, surgery, and the specialities at the Queen Mary's Hospital Copies of all syllabuses, of the general course programme, and of the *Post-Graduate Medical Journal*, may be had on application to the Secretary of the Fellowship at 1, Wimpole street, London,

Royal Hospital Morningside—A luncheon will e given by the Chairman and Managers of the institution t Vogrie on Thursday, July 22nd, in celebration of the nauguration of the new nursing home

St Bartholomew's Hospital War Memorial—This memorial which takes the form of an archway under he Great Hall connecting the square and the school, was nveiled by the Prince of Wales on July 8th

The late Lieut -Colonel Lionel Pisani F R C S I M S (Retd)—After a short illness Colonel Pisani died on June 22nd in his sixty-fourth year He was a student at the Charing Cross Hospital, qualified in 1886 and a month later passed into the I M S being placed first on the list of candidates On arriving in India he was appointed to the guides and saw service on the frontier From 1890 to 1909 he was in charge of civil districts in the United Provinces He planned, equipped, and had charge of the Government Hospital at Moradabad where, in addition to general surgical operations, about 200 cataract extractions were performed annually Leaving India for family reasons in 1909, he determined to devote himself to ophthalmology, and with this aim and in spite of his large experience in operative work he entered Moorfields Hospital as a junior assistant, and in due course became chief clinical assistant In 1911 he was appointed ophthalmic surgeon to the Metropolitan Hospital, and later consulting ophthalmologist to the Metropolitan Asylums Board, in this capacity visiting the asylums at Watford and the schools at Banstead Pisani was a man of untiring energy apart from vacation absences he never missed a day's attendance at hospital, and he visited the Watford Asylum the day before he took to his bed

Prize-giving at the London Hospital—On June 28th Mr Neville Chamberlain, Minister of Health presented prizes to the students of the London Hospital Medical College Prof William Wright Dean of the College, said that during the year 1925–26, 582 students had been in attendance, 103 of whom had taken medical or dental degrees or diplomas By resignation the hospital had lost the services of Dr Russell Andrews, Mr James Sherren, and Dr E W Clapham, who in their several ways were representative of the London Hospital, and imbued with its finest traditions Those who had been elected to the staff during the year were Mr W Morris and Mr Geoffrey Carte as assistant aural surgeons Dr A Maitland-Jones as director of the new department of the diseases of children, Dr W J O'Donovan as assistant physician in the dermatological department, Mr Victor Lack as assistant physician in the obstetric department, Mr A C Perry and Mr H W B Cairns as assistant surgeons, Mr A G Allen as dental surgeon, and Mr Stuart Thompson as assistant anæsthetist After mention of the various endowments received by the hospital during a memorable year, Prof Wright referred to the appointment of Dr S P Bedson, Dr Howard Florey, and Dr L Hewitt as workers under the Freedom Research Fund, and concluded by reminding his audience of the quite extraordinary opportunities offered by the London Hospital to students of medicine now that 100 junior appointments were open to recently qualified men and about £100,000 had been made available for research The facilities for giving a broad, thorough, and modern education, both theoretical and practical, to undergraduates and postgraduates alike were, he considered, greater than those offered by any similar institution in the country Mr Neville Chamberlain having presented the prizes referred to the possible careers open to the student, emphasising the claims of preventive medicine From the point of view of a Minister of Health, he said, it was almost impossible to lay too much stress upon the need for continual research The organisation of medicine in this country was, unfortunately, far from perfect, but it was the task of the Minister to try to adjust defects in the machinery In this task he asked the coöperation of his hearers Lord Knutsford in moving a vote of thanks to Mr Chamberlain, said that the duty of the hospital did not end when it simply cured the sick who came for help , part of its duty was to discover the causes of the sickness Unfortunately, at the London Hospital there was a list of over 1100 people waiting for admission, and until recently the lack of funds had prevented adequate endowment of research Lord Dawson of Penn seconding the vote of thanks, said that the changes coming over the practice of medicine were likely to be wide and deep The centre of gravity was drifting away from disease and towards health The doctor of the future would study early disturbance of function, and it seemed inevitable that there would be a large development in what might be called industrial medicine People would be studied chiefly in relation to their work and its environment, with the result that practice would diminish in the surgery and the home This would involve an increase of clinics and hospitals and the primary hospitals of the future would play an important part in every local community, where they would be closely associated with the work of the general practitioner

Biochemical Society—At the meeting of this society to be held in the Department of Biochemistry at Oxford at 2 30 P M to-day, Saturday July 10th there will be biochemical demonstrations and a number of original communications will be read.

Andover War Memorial Hospital—On June 30th Field-Marshal Viscount Allenby opened the hospital erected as part of the war memorial at Andover Hampshire The building supersedes the old cottage hospital and has been put up at a cost of £16 000 There is accommodation for 24 patients and the capacity can easily be increased later, and there is also a well-equipped operating theatre Dr E A Farr chairman of the hospital building committee was able to announce that the hospital opened practically free of debt. An informal visit to the hospital was recently paid by the Prince of Wales

The King at Papworth—The King last week visited the Tuberculosis Colony at Papworth near Cambridge, and before leaving, His Majesty told Dr P C Varrier-Jones, the medical director that the colony was "the most perfect scheme that he had ever seen" A tour of the industrial side of the colony to occupy an hour had been mapped out but the King was so much interested in all that he saw that he spent two hours in the works. He bought a large leather cabin trunk and was presented with a pigskin suit-case by the workers

Larger Northern Hospitals—Lord Darlington has laid the foundation-stone of a new War Memorial Hospital at Darlington The total cost will be £185,000, of which about one-third has yet to be raised—Lady Sutherland has laid the foundation-stone of a new wing of the Beckett Hospital at Barnsley, which is estimated to cost £25 000 of which only one-half is yet available. The hospital has a waiting-list of 200, and the present accommodation is equivalent to no more than half a bed per 1000 of the population, which is growing rapidly.—The newly-completed wing of the Lloyd Hospital at Bridlington has been opened by Lady Cunliffe-Lister, the wife of the President of the Board of Trade The hospital was established on a small scale in 1868 by Miss Lloyd, Sir P Cunliffe-Lister's great-aunt The new wing contains 20 beds in four wards

Kingston District Nursing Association—The Minister of Health has addressed a letter to the Chairman of the Kingston District Nursing Association in regard to the cases of septic infection which have occurred recently among patients attended by nurses on the staff of this Association, and have been the subject of questions in Parliament He states that the facts elicited by the inquiry indicate that there was grave laxity on the part of the superintendent in the administration of the maternity home and of the extern midwifery practice She apparently failed to realise the risk of permitting the same nurse to have access to infected and non-infected patients and she even allowed a nurse who was herself suffering from septic infection to remain on duty in spite of her manifest unfitness to continue to attend maternity patients He adds that there can be little doubt that this nurse acted as a carrier of virulent infection from one patient to another and, although the ultimate responsibility for permitting this must devolve upon the superintendent the nurse herself cannot be exonerated from blame It is only fair to the superintendent to add, says the letter that she suspected infection in a patient attended by this nurse although the medical practitioner in charge of the case appears to have failed to diagnose the condition or to recognise the patient as a source of infection The Minister considers that no useful purpose would be served by reviewing in detail the incidents of the outbreak but he is compelled to recognise that the negligence of the staff has contributed in large measure to the calamities which were the occasion of this inquiry Moreover he cannot escape the impression that the medical care of more than one of the cases does not seem, as far as the evidence shows to have been in accordance with the principles of sound midwifery practice It is understood that the maternity home has been closed temporarily, and that the district midwifery practice is in abeyance for the time being The Minister considers that the committee would be well advised, when maternity work is resumed, not only to replace the superintendent and the nurse directly concerned with the recent infected cases but in view of the laxity in administration revealed by the inquiry to appoint an entirely new midwifery staff He trusts that the committee will not be unduly discouraged by what has happened, and that the valuable public service rendered by the Association will not be allowed to lapse He suggests however that it might be advisable for the committee to consider affiliation of their Association with the Surrey County Nursing Association

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street, W
TUESDAY, WEDNESDAY and THURSDAY July 13th–15th—ANÆSTHETICS Visit of American and Canadian Anæsthetists Tuesday, 10 A M Papers by Prof J S Haldane, Mr F P Dunhill, and Dr J Blomfield Thursday 10 A M American Session DINNER On Wednesday a Complimentary Dinner will be given by the Section of Anæsthetics to the visitors and their wives Tickets, inclusive of wine 25s each

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street, London, W
MONDAY, July 12th, to SATURDAY, July 17th—Special demonstration in clinical surgery at the Royal National Orthopædic Hospital, 234, Great Portland street, W on Monday at 2 P M, by Mr Rocyn Jones Special demonstration in clinical ophthalmology at the Royal Eye Hospital Southwark on Wednesday, at 3 P M by Mr Griffith—HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars, S E Afternoon course in Dermatology consisting of instruction in the Out-Patient Department (selected cases by Mr Haldin Davis)—ROYAL EYE HOSPITAL, Southwark S E A series of demonstrations on the diagnosis and treatment of Diseases of the Eye will be given by members of the staff from Monday to Friday, inclusive, at 3 P M Further information from the Secretary of the Fellowship of Medicine

NORTH-EAST LONDON POST GRADUATE COLLEGE Prince of Wales's General Hospital, Tottenham, N
MONDAY July 12th—10 A M, Surgical Out patients Mr W E Tanner 10 30 A M, Gynæcological Operations Mr A E Giles Throat, Nose and Ear Operations Mr W Ibbotson 2 P M, Medical Surgical, and Gynæcological Clinics, Operations 6 30 P M, Venereal Department
TUESDAY—2 P M, Medical Surgical, Throat, Nose and Ear Clinics, Operations 3 P M Demonstration of cases Illustrating Types of Mental Diseases Dr J K C Laing at the Colney Hatch Mental Hospital, New Southgate, N
WEDNESDAY—10 30 A M Surgical Operations Mr E Gillespie 2 P M, Medical, Eye, and Skin Clinics, Operations 5 30 P M, Venereal Department
THURSDAY, July 1st—10 30 A M, Dental Out patients Mr E S Pierrepont 2 P M, Medical, Surgical, and Throat, Nose and Ear Clinics, Operations 5 P M, Operations
FRIDAY—10 30 A M Eye Operations Mr N Fleming 2 P M, Surgical, Medical, and Children Clinics Operations 3 P M Dr L R Yealland Method of Electro Diagnosis 6 30 P M, Venereal Department

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL Gray's Inn road, W C
FRIDAY, July 16th—4 P M, Mr Archer Ryland Demonstration of Museum Specimens

CANCER HOSPITAL, Fulham road, S W
WEDNESDAY, July 14th—4 30 P M, Dr Archibald Leitch Recent Advances in Cancer Research
FRIDAY—4 30 P M, Dr Stanley Wyard Carcinoma of the Stomach

THE LONDON SCHOOL OF DERMATOLOGY, 49, Leicester square, W C
TUESDAY, July 13th—5 P M, Dr H W Barber Alopecia Areata and Vitiligo
THURSDAY—5 P M, Dr A M H Gray The Sarcoids and Lupus Pernio

Appointments.

BROWNE, F J, M D Aberd, F R C S Edin, has been appointed to the Chair of Obstetric Medicine in the University of London

Vacancies.

For further information refer to the advertisement columns

Barnstaple, North Devon Infirmary—H S £150
Blackburn Union—Res Asst M O £200
Buxton, Derbyshire, Devonshire Hospital—Asst H P £150
Cambridge, Addenbrooke's Hospital—Cas Officer £130
City of London Hospital for Diseases of the Heart, &c—Two H Phys £100 each
Durham County Council—Asst Welfare M O £600
Essex Administrative County—Orthopædic Surgeon £3 3s per session
Evelina Hospital for Children, Southwark—House Surg At rate of £120 Also Hon Dental Surg
Gloucestershire Royal Infirmary, Gloucester—Asst H S £150
Hospital for Consumption and Diseases of the Chest Brompton, S W—Res M O £600 Also Pathologist £750
Ipswich County Borough—Asst M O H, &c £600
Manchester, Ancoats Hospital—Res M O Also H P At rate of £150 and £100 respectively
Manchester, St Mary's Hospitals—Two H S's Each at rate of £50
Manchester University—Lecturer in Experimental Physiology
Maudsley Hospital Denmark Hill, S.E—Asst M O £440
Metropolitan Hospital Fulham—Tuber Officer and Asst. M.O.H. £750
Royal Northern Hospital, London, N—Asst Surg O £75
Rotherham Hospital—Jun H S £150.
St Albans and Mid Herts Hospital—Res O M. £150
St Bartholomew's Hospital and Medical College—Clinical Pathologist and Lecturer
St Helen's County Borough Asst M O £600 Also Asst M O H (Tuberculosis) £450
St Paul's Hospital for Skin Diseases—Res M O £250
Seychelles Government—Asst M O R 6500 per annum
Sheffield Royal Infirmary—Ophth H Surg and H P £80 each
Staffordshire County Council—Bacteriologist. £10 10s per week.
Walthamstow Wanstead, and Leyton Children's General Hospital Res H S £100
West End Hospital for Nervous Diseases—Hon Phys and Hon Surg
West London Hospital, Hammersmith road, W—Res Asst S. £200
Wolverhampton and Staffordshire Hospital—H S At rate of £150

Births, Marriages, and Deaths.

BIRTHS.

BALL—On June 29th, at Hampstead, the wife of Dr Norman D Ball, of a daughter
CHAPMAN—On June 29th, at Wingmore Lodge, Wokingham, Berks, the wife of Dr E F Chapman, of a son
FAWSSETT—On July 1st, at Clarence House, Rhyl North Wales, the wife of R Shirley Fawssett, M R C S, L R C P, of a daughter
GARDNER—On July 3rd, at Old Steine, Brighton, the wife of Dr F Gardner, of a son
REES—On July 3rd, at the Quay House, Swanage, the wife of Dr W A Rees, of a daughter
RYAN—On June 26th, at Welbeck street, the wife of J F Ryan, M B, of a daughter

MARRIAGES.

COOK—STOWELL—On July 1st, at Manchester Cathedral, the Rev Frank Cook M A, Hiroshima, Japan, to Enid Florence Stowell, M B Ch B, D P H, Abbey Hey
ELLIS—DEANE—On July 1st, at the Parish Church Alverstoke, Lieut Colonel W F Ellis O B E, late R A M C, of Tangier, to Julia Grace Hawtrey, youngest daughter of the late Ralph Hawtrey Deane, of Eastcote, Middlesex, and Mrs Hawtrey Deane, of Gerrards Cross

DEATHS.

BROOKS—On July 3rd, at his residence, Gold Hill, Chalfont St Peter, Charles Brooks, M R C S, L R C P, J P
CASTLE—On July 1st suddenly, of heart failure, at Upper Berkeley street, W, Walter F R Castle, D S C, M D, M R C P, in his 35th year
EDWARDS—On June 25th at Cheltenham, George Frederick Edwards, M D, late of Bexley, Kent aged 74
HOGG—On July 4th, at his home, Ernest Henry Hogg M R C S, L R C P, of Belmont House, Thrapstone, aged 51
LAYCOCK—On May 24th, at Melbourne, suddenly, George Lockwood Laycock, M B, C M
MOIR—On June 29th, at Ness bank, Inverness, John Munro Moir, M D
SMITH—On June 30th, at St John's road, Putney, James Smith, M A, M B, M D, F R C S
THOMSON—On July 2nd, at Coates crescent, Edinburgh, John Thomson, M D, F R C P E., LL D, F R C P (Hon) Lond, aged 69

N B—A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

THE LANCET SUBSCRIPTION RATES

		£	s	d
INLAND	One Year	£2	2	0
	Six Months	1	1	0
	Three Months	0	10	6
ABROAD	One Year	2	10	0
	Six Months	1	5	0
	Three Months	0	12	6

Subscriptions not paid in advance are charged out at the published price of 1s per copy, plus postage Cheques and P O's (crossed "Westminster Bank, Ltd, Covent Garden Branch") should be made payable to THE MANAGER, THE LANCET Offices, 423, Strand, London, W C 2

Notes, Comments, and Abstracts.

PUBLIC HEALTH IN CHINA AND THE BOXER INDEMNITY

BY SURGEON-GENERAL S. H. CHUAN,
MINISTRY OF WAR, PEKING

As gestures of goodwill, different nations in the past few years have either remitted to China, or decided to use for China's benefit, the unpaid portions of their Boxer Indemnity Funds. Such funds have been assigned to various worthy causes. The United States of America to education and culture; France to the stabilisation of finances; Holland to Yellow River conservancy; and Japan to library and research laboratory. It is needless to say that China deeply appreciates such generous deeds, and that funds so used will not only benefit China and the nations concerned, but will also result in advancing further the cause of international peace and brotherhood.

Remission or Allocation of Indemnity

It augurs well for the future international relations in the Far East to know that Great Britain has recently decided also to take similar action regarding the balance of her Boxer Indemnity. It is significant to note that so much importance is placed on the best use of the funds that a commission, headed by such a distinguished statesman as Viscount Willingdon, and assisted by British and Chinese possessing the confidence of this country, has been studying the local needs and conditions, gathering at first hand all necessary information which will enable the Statutory Committee to render its final decision on "the best use of the indemnity funds for the mutual interests" of Great Britain and China.

During the past year more than a few proposals have been made either to the British Government or to the Willingdon Delegation, concerning the allocation of the British Boxer Indemnity. There is no doubt that all these proposals have been made by parties bearing in mind only the needs and welfare of China, and that they are all worthy of careful and favourable consideration. It is, therefore, with due respect for, and full appreciation of the value of the other proposals that I wish to write a few lines in favour of the proposal suggesting the allocation of at least a part of the British Boxer Indemnity Funds to the promotion of public health in China.

It seems to me that in deciding on the best use of the said funds, these factors should be of primary importance:—the need of the country, the range of benefit that the proposal will yield, its feasibility and permanency, and the remitting nation's fitness in promoting the consequent scheme.

China's Crying Needs

China certainly has many needs. But all will readily agree that the lack of an adequate and efficient public health service is one of the crying needs, if not *the* crying need, of China to-day. One does not have to go far in order to be convinced of this; the health of the people, the general sanitary conditions, the high infantile mortality and the recurring epidemics are sufficient to prove to the Chinese themselves how dire the need is. It is true that health conditions in the different foreign concessions are much better, and that Western missionaries have helped to initiate certain needed sanitary reforms in and around their stations. During recent years the Chinese Government has also undertaken to improve the living conditions in the large cities. But these efforts, worthy as they are and made under such unfavourable conditions, amount to almost nothing when we take into consideration the vastness of the country and its tremendous population. The need still remains great.

Indemnity funds used in the promotion of public health will not only meet the crying need in China, but will also affect the greatest number of people. Improved health conditions in China do not affect the Chinese alone although the Chinese form one-fifth of the world's population. Besides the Chinese, there are also thousands of foreigners residing in various parts of the country whose lives and properties will certainly receive the full benefit. Foreign trade in the country will be stimulated which means more foreign population in China. Moreover, the backwardness of China's health conditions has often been the cause of her sons and daughters being unwelcome to foreign countries, sometimes leading to unpleasant international relations and regulations. The periodic epidemics have frequently and seriously affected trade coming into and going out of the country on account of the quarantine regulations. Better health conditions in China will, therefore, benefit the whole world in more ways than one.

The feasibility of the few major proposals have often been questioned. Many doubt if those proposals are capable of being carried out and, if carried out, no one can guarantee that they would not be misused by the politicians and militarists who are and will be dominating this country for some years to come. Then it will simply mean the creation of more troubles for the people, plunging the country into deeper misery. The work of promoting public health is, however, primarily humanitarian in nature. The work can easily be organised in such a way and with such a personnel that political and military interference can be avoided. Certainly, public health promotion, thus organised and conducted, can never be used by politicians and militarists as a weapon to injure the people and the country. Under the present abnormal conditions in China, which are sure to continue for some time, this proposal does seem to be the most feasible.

Permanency of any proposal should certainly be one of the deciding factors. The funds available are limited in amount and cannot form a perpetual source of income. If not judiciously used, they may soon be exhausted, rendering it impossible to continue the work, whatever it may be. Should it come to that, this would be quite a calamity indeed. However, in promoting public health measures in China, the work can be so carried on that its permanency will be assured. For example, part of the money might go to defray the expenses in training the necessary personnel in the medical schools of good standing in this country; part of it might go into the expenditure of general administrative purposes; part of it might be spent in the actual work of promotion, such as the giving of public health demonstrations, work of research, and subsidies and loans to those agencies, either Government or private, whose efforts along the line of public health deserve help and encouragement; and last, but not least, an adequate part of the fund could be reserved as a sinking fund, which would enable the work to go on indefinitely.

A Public Health Ministry

As to Great Britain's fitness in promoting public health in China, none will question her qualifications. She is the pioneer in placing public health definitely on a governmental basis by the establishment of a Ministry of Public Health. Her efforts and experiences in improving living conditions in her several colonies make her an expert along these lines. Her medical representatives in China in the past half a century have always taken a prominent part in helping China to solve her health problems. With her wide experience and deep interest in the work of public health, it is only fitting, yea even imperative, for her to assist China in instituting a modern and efficient public health service. And Great Britain is pre-eminently fitted to do it.

In these days of agitation against British imperialism, boycott against British goods, and popular outcry against "the British domination," it is most urgent for Great Britain to do something to show unequivocally to the Chinese her true spirit of the Samaritan. The best way, it seems, is for her to take a prominent and active part in promoting public health in China. As already indicated, the work of public health is primarily humanitarian in nature. It aims at the relieving of the sufferings of the people which cannot fail to touch the hearts and win the goodwill of the masses. Once the people's heart is won, all material benefits from trade, business, industries, and what not will naturally come to her.

If we come to consider the sources from which the Boxer Indemnities are collected, it is almost obligatory for the authorities concerned to use the funds in such a way that the resulting benefits will spread all over the country. No plan can be justifiable if its benefit is restricted to only a small area of the country, and if only a small proportion of population are directly affected. For it is the entire population of China who are the contributors to the Boxer Indemnity chest, not a particular section nor a portion of the population of the country. It is true that a well-planned scheme, properly carried out, will eventually benefit indirectly the whole country. Since all Chinese are contributors to the Boxer Indemnity Funds, such funds, when remitted to China, ought to be used in such a way that it will affect the whole country directly and as soon as possible. The promotion of public health in China is precisely the plan that has already been pointed out in the foregoing paragraphs.

Finally, it may not sound too exaggerated to say that, of all the professions, the medical profession, by the very nature of its training and work, contains the least number of men whose aim of life is purely for personal gains. So much can certainly be said about the properly trained modern medical man in China whose technical training and personal character is uniformly high. Given for the purpose of promoting public health in China and entrusted to such a body of men, both Chinese and foreign, there is no doubt that every penny of the funds will be well spent, and that the work to be established will be honestly and efficiently carried on.

Mutual Benefit

In conclusion, one important phase of this problem in spending the funds which has already been pointed out by different authorities and leading papers, may be considered The word "mutual," contained in the resolution of the British Government concerning the use of her Boxer Indemnity may give the impression that, after all, the funds are to be spent mainly for the British interests in China, which evidently is not the sole motive that prompted the British Government to perform such an unselfish deed to China In the final decision on how the funds are to be used, we may with all true friends of Britain reasonably hope, that not only the words will show Britain's real unselfish spirit behind the act, but that the nature of the controlling personnel and organisation will also prove to all that the funds are to be spent for and by the Chinese with expert British advice and support only Funds so used and controlled, although entirely for China's benefit, will, as already pointed out, inevitably result in Britain's benefit, too So let it be a free gift to the recipient, and let whatever fall to the giver come as a matter of course

Viewed, then, from all angles the allocation of at least a portion of the British Boxer Indemnity for the promotion of public health in China is the best, wisest, and most feasible way for Great Britain to render an everlasting service to China in the latter's days of trial and turmoil The leading medical associations have jointly made such a proposal to Lord Willingdon's Commission Following that, they have presented to the same delegation a tentative plan, and later on a detailed plan, embodying all phases for the carrying out of their proposal All these go to show that members, both foreign and Chinese, of those associations are public spirited, serious-minded, and thoroughly earnest Let us sincerely hope that a proposal of so much value, supported by such enthusiastic spirit and united effort, will have the primary claim on the attention of the Statutory Committee, before the final decision is reached

ROWLAND HILL AND VACCINATION

Christ Church, Westminster Bridge-road, which celebrated its jubilee from July 4th–6th, is a perpetuation of the work of the Rev Rowland Hill at the famous Surrey Chapel in Blackfriars-road, where for 50 years he drew crowded congregations of all classes Amongst Hill's many interests was vaccination, and he was a staunch friend of Dr Jenner Frequently after his sermon—and he is said to have preached 23,000 of them—he would say, "I am ready to vaccinate to-morrow morning as many children as you choose, if you wish them to escape that horrid disease, small-pox you will bring them" At the Old Surrey Chapel he established what would to-day be called a vaccination clinic and he must have vaccinated 10,000 people

Hill was buried under the pulpit at Surrey Chapel, but when, under Dr Newman Hall the congregation moved to Christ Church 50 years ago, his body was removed to the new church by special permission It still lies under the old pulpit that stands to-day beneath the Lincoln Tower This tower, largely built with American money, commemorates Dr Newman Hall's championship of the North during the American Civil War Christ Church, Westminster Bridge-road, is also associated with David Livingstone, who was a friend of Hall's, and a vestry is named after him, which contains, besides Rowland Hill's relics, two cases of Central African insects presented to the church by Livingstone

GUARDIANSHIP SOCIETY

THIS society, which has its headquarters at Brighton, arranges for the care of the subnormal in body or mind and boards out suitable cases under supervision and guardianship It has been in existence for 13 years During 1925 514 cases were dealt with, which was an increase of 23 per cent, and the expenditure was £13,482, as against £10,417 in 1924 There has been an increase of 100 per cent over the previous year in the number of patients received on licence from certified institutions The society continues to do good work at its cottage farm at Dungates, Horeham Road, and at Beadles Cottage, Cowbeach, both in Sussex, and in coöperation with the Brighton Corporation and the Mental Hospital it has now formed a mental after-care committee

AN ARMY SANITATION HANDBOOK

"SANITARY measures must be, firstly, *understood*, secondly, *believed in*, thirdly, *practised* by every officer, non-commissioned officer and man" These are the fundamental principles of the "Army Manual of Sanitation"[1] which is designed to explain sanitation, and especially army sanitation, to regimental officers and men, as it very well does The soldier's health is good unless it is upset and so the handbook tells him what to avoid, and in detail what arrangements the army makes to help him to keep down flies, to get clean water and food, to breathe pure air, and to avoid infection It also tells him what will happen if he neglects its instructions, putting prominently before him its plea for the persistent personal practice of prophylactic precautions, and assuring him that if he and his mates get ill, it will be largely through their own carelessness Moderate tobacco smoking is described as probably beneficial, and alcohol, "though not a necessity," is not condemned The remarks on disease vectors are excellent, but surely the fact that lice are "now" known to carry disease has not made personal cleanliness more important "than it was formerly," but only more important than it was formerly thought This book is very good and very cheap, laymen could read it with pleasure and profit

EXPERIMENTAL OPOTHERAPY IN FOWLS

IN the *Semana Medica* (April 22nd, 1926) Dr Pablo Heredia describes some experiments in which he fed healthy male chickens on varying quantities of bovine testicular extract and observed the effect on growth and the development of secondary sexual characters

The chickens were taken in pairs, one in each pair being a control, and the birds were as nearly alike as possible, each pair being taken from the same brood The results were the same in all cases The untreated bird developed better than the other, and on post-mortem examination the testicles of the birds fed with extract showed some congestion and degeneration of cells, the results being roughly in proportion to the amount given

The author concludes that so far as these experiments go, they show (1) that opotherapy is incapable of exciting glandular action, (2) that it supplements the function of the gland treated, (3) that it inhibits the glandular secretion when its action is prolonged and may produce glandular atrophy Possibly it has some toxic action He admits that these conclusions are only provisional and that much more work is needed to make them certain, in any case they only relate to the effects observed on glands that are primarily healthy and in the developing stage, and have no bearing on morbid conditions They do, however, suggest that testicular extract from one animal has a specific effect on the testes of another and on the secondary processes connected with them, and it is interesting that this should be true when the animals are so distantly related as bulls to chickens

THE CANTAB IN 1826 [1]

IT has occurred to Mr Teichman that, owing to the great social changes which have taken place in the life of the undergraduate at Cambridge during the past 100 years, some account of that young man in the 'twenties would be interesting He has therefore, compiled a modest little book illustrating mainly the sporting side of undergraduate life, but including interesting chapters on other phases A small bibliography shows the principal sources of the compilation, and explains also a feeling which many Cambridge men will have on reading the book—namely, that the revolution in manners and outlook has occurred largely at the end of the century under consideration For, allowing for minor differences, much that is described as occurring 100 years ago also occurred 50 and even 40 years ago, the episodes were not identical, but the spirit behind them had persisted and the traditions, leading to the similar occurrences, were going strong This can be recognised in the amusing chapters entitled "The Boating Man," and "The Sporting Man" At the same time it can be seen that the nature of the fast man's excesses had changed considerably between Georgian and mid-Victorian times, in sympathy with improved standards of conduct and an alteration for the better in social opinions This evolution rather than revolution of manners comes out the more clearly because the author, as he acknowledges, while professing in his title to deal with Cambridge 100 years ago, has been lured forward into the 'forties by some of the literature which he has consulted The chapter entitled "Town and Gown" is not descriptive of anything that has been seen for more than 50 years, but readers of *Verdant Green*, whose adventures took place at Oxford, will recognise that at one time there was a real feud between the university undergraduates and a certain type of citizen, boasting Rogue Riderhood's appellation of "waterside character" We doubt if any one alive can recollect the existence of this feud as having any real basis, though traces of it could be found 40 years ago, while sentiments exactly opposite now prevail between townsmen and gownsmen

---

[1] London H M Stationery Office 1926 Pp 134 6*d*

[1] The Cambridge Undergraduate 100 Years Ago Compiled with extracts and illustrations from contemporary sources By Oskar Teichman D S O, M C, M A Cambridge W. Heffer and Sons 1926 Pp 105

Victor Horsley Memorial Lecture

ON THE

INSULATION OF THE NERVOUS SYSTEM

Delivered at the House of the British Medical Association on July 9th, 1926,

BY WILFRED TROTTER, M S LOND , F R C S ENG ,

SURGEON, UNIVERSITY COLLEGE HOSPITAL

WITHIN a few days it will be exactly ten years since Victor Horsley died The circumstances of his death, however lamentable they may seem to us who lost him, were not perhaps, very different from what he himself might have wished He was at work in the direct service of his country ; he was using his whole strength in the relief of suffering, while his mind and body kept unabated their astonishing and characteristic vigour In commemorating this great man our attention is attracted to three separate aspects of his life We think of him as a physiologist and as a surgical pioneer, and we think of the personality which lay behind and informed these and all the activities of his crowded years

His work for science and for surgery has long been incorporated with the general body of knowledge and has its lasting place For his personality there is no such lodgment and those in whose memory it lives so vividly are already, after the passage of even ten years, a heavily reduced company I therefore gratefully accept this chance to make my small record of a man who, in my knowledge of men, was unique in this, that he combined an inflexible belief in his own standards and a truly apostolic zeal in all public affairs, with a disposition that was in its essence boyish and simple and in every private relation easy and mild and kind

METHODS OF INVESTIGATION IN NEUROLOGY.

The pioneer work of Horsley in the surgery of the central nervous system has had, and must continue to have, remote and secondary effects upon the development of neurology Whenever a region of the body has been made accessible to surgery, a new insight into its pathology has resulted from the fresh experience that has been acquired of morbid processes in the living and especially of the earlier stages of disease This has been abundantly shown in the case of the abdomen and in the case of the thorax In that of the central nervous system it is, perhaps, as yet less obvious, but it is already unmistakable and will become increasingly so as experience accumulates

While most of us would no doubt agree that important practical knowledge is to be acquired in this way, there are probably few who look to it with much hope for the discovery of principles of general scope and fundamental significance As a possible source of any wide expansion of neurological theory it is just and natural to look to laboratory methods and the study of animals rather than to methods of the bedside and to the study of man himself in his reactions to injury and disease In the familiar and not always philosophically made comparison between the experimental and clinical methods, it is usually, however, overlooked that the latter has of necessity a virtue which is in some degree its special possession The student whose material is man is drastically handicapped by the limited extent to which experiment is open to him He must take his problems as he finds them and deny himself the help of almost all the preliminary simplifications which are the essence of the laboratory worker s advantage At the same time however the conditions of his work impose upon him a knowledge of his material at once so intimate and so wide as to constitute a situation probably unique in the whole field of science When we consider the intensity of watchfulness which the quite ordinary practice of neural surgery calls for and obtains it must be obvious that the behaviour of the human brain in the various circumstances of injury and disease is far better known than that of any other animal. Indeed one of the characteristic difficulties of the clinician comes from this very abundance of the stuff of observation, and he is likely to be overwhelmed by its bulk and rendered inattentive by its familiarity, losing amongst details his sense for larger groupings, and amidst the everyday his eye for the significant Nevertheless, the history of science shows that one important source of general ideas has been just this very circumstance of a close intimacy with a large range of observed facts

The familiarity with the behaviour of the central nervous system that has been possible since it has been accessible to surgical exploration and treatment, is capable of reacting in an important way on our attitud to neurological theory

THE ABSTRACT METHOD IN NEUROLOGY

There are few departments in biological science in which what we may call abstract methods of thought are more naturally and inevitably used than they are in neurology By abstract methods I mean methods in which the single or grouped items of experience are for convenience of thought represented by abstracted summaries of themselves or symbols which have a handiness for working on in the mind that the raw undigested facts cannot possess The discovery of the uses of abstraction was an event of fundamental importance in the evolution of science, and in the early Greek natural philosophers we can see with what exultation was welcomed the extension it gave to the powers of the mind Perfectly legitimate and indeed indispensable as the method is, it is obviously not applicable to all material of inquiry with equal ease and safety With what certainty and precision the qualities of number, space, and motion allow of abstraction is seen in the noble achievements of mathematics, physics, and astronomy achievements which through their most recent extensions in atomic and in stellar physics have finally established the overwhelming prestige of the method and its effective leadership in science

When, however, we make living matter and living organisms the subject of study, we find, though we can by no means dispense with the use of abstraction it is far less effective in application and has disadvantages which it does not seem to possess in the inorganic world In biological inquiry an abstract conception, though professedly no more than a convenient summary of experience and constantly subject to the censorship of facts, is apt to acquire a quasi-vitality of its own through which it loses its immediate dependence on experience and comes to *dominate* instead of serving The danger arises not so much from the extreme cases of conceptions which easily show as flagrantly inconsistent with facts but from ideas primarily good and sound which have been endowed with a prestige that in their very nature they could not deserve That an over-valuation of the abstract conception as an implement of research can deceive even the very elect could be shown by many eminent examples The biological writings of Herbert Spencer are perhaps, as good an instance as comes readily to mind, and it is easy to trace in them how this very weakness has led within a few years to their greatly diminished influence. To find so distinguished a man in a state of reprobation may well make humble people look anxiously to their own doctrines and indeed which of us for example, can ask himself without a qualm what is the *exact* meaning he attaches to the abstract conception of evolution which has dominated the biological world for half a century

When we turn to neurology, we find the currency and influence of abstract conceptions very great as for example, in the theory of aphasia in Hughlings Jackson s interpretation of cerebral functions, in Monakow s doctrine of diaschisis and so forth All these are doubtless in their essence and originally, good and valuable conceptions It is another matter, however, how far their function as professed summaries of experience is kept distinct from their charm as mere intellectual patterns It is thus peculiarly necessary for neurology to submit itself to the discipline of frequent returns to the comparatively primitive and clumsy method of direct and concrete thinking Such efforts should, I think, be guided by two principles The first is the obvious one that a constant and docile reference to experience is indispensable The second is, perhaps, less obvious and is less simple to state, it accepts the free use of hypothesis as essential to neurological progress, but it enjoins, that in drawing up our necessarily more or less abstract conceptions of the nature and working of the nervous system, we should incline to the use of ideas of a definitely biological type and should, as far as possible, avoid concepts that in their very nature can have no direct resemblance to what actually happens in the body In giving to our neurological ideas this concrete and realistic tone we shall always depend to a great extent on an intimate familiarity with the appearances and behaviour of the actual nervous tissues The knowledge of this kind we possess to-day may well be regarded as having in great part grown out of Horsley's work

The surgical neurologist is perhaps fortunately placed for considering the nervous system in an attitude of mind at once general and concrete, while he lacks the special knowledge of the anatomist, the physiologist, and the pathologist he is also free from their special preoccupations, while the behaviour of the nervous tissues in injury and disease is a matter of familiar knowledge it is prevented from becoming commonplace by the narrow margin of safety within which he works and the serious consequences that follow when it is exceeded Thus is almost forced on him the development of views which, whatever they may lack in the way of abstruse detail will, at any rate, always tend to be strictly realistic

INJURIES TO THE LIMITING STRUCTURES OF THE NERVOUS SYSTEM

In illustration of this general point of view I propose to call attention to a small group of facts which, while they are of more or less common knowledge, are perhaps more especially within the observation of the surgeon They are concerned with the responses of the nervous system to certain injuries

Division of a Nerve—It is a very old observation that when a mixed peripheral nerve is cut its central end becomes swollen into a bulbous mass of dense fibrous tissue It seems sometimes to be thought that this is only an occasional result of a nerve section, and is especially to be looked for when persistent pain has followed the injury This is, of course, not the fact The bulbous end is the invariable and inevitable result of a nerve section to which it is the necessary and, so to say, physiological response When we inquire into the exact nature of this so-called amputation neuroma we find that in immediate consequence of the section the nerve-fibres ramify and grow out from the cut end so that there issues from this a veritable spray of fine naked axis cylinders The result of this invasion is to call forth an energetic response from the adjacent non-neural tissue leading to the formation of a peculiarly dense fibrous material that resists the spread of the nerve fibrils and finally encloses them in an impenetrable capsule Within this limiting substance the growth of axis cylinders continues, but since there is no exit it can result only in the formation of an intricate and aimlessly convoluted network

Breaches of the Spinal Theca—It occasionally happens, usually, perhaps, in connexion with the avulsion of a spinal nerve, that a subcutaneous laceration of the spinal dura occurs More commonly the surgeon has an opportunity of studying the effect of breaches of the theca in cases where a laminectomy with incision of the membranes has to be followed by a second similar operation after some weeks or months We find then that wherever the cerebro spinal fluid has been able to escape into the tissues it has been everywhere walled off by a dense impervious membrane so that, according to the extent to which the fluid has made its way, there will be a more or less complicated series of cyst-like spaces communicating with the intrathecal cavity It is the wall of these cystic extensions of the theca that is of interest, for it shows all the characters of the normal dura It is of a dense fibrous substance, its inner surface is smooth and glistening, and its outer surface, instead of merging with the surrounding tissues like a scar, is easily separable from them along a well marked line of cleavage

Regeneration of the Cerebral Dura—It is not uncommon for a second cerebral operation to be necessary in a case in which the dura mater has already been opened or removed If the second operation is done after an interval of about six weeks or more it will be found that the gap, however large, that was left in the dura at the first operation has been closed by the formation of a new membrane having all the characters of normal dura as above described Among such characters the most striking, and perhaps the most conclusive of the nature of the new membrane, is its differentiation from the overlying scalp, so that the latter can be stripped away from it with ease and without bleeding It is interesting to note that at one time a great deal of surgical ingenuity was expended on evolving a plastic surgery of the dura in which gaps were closed by the insertion of fascial grafts Such grafts were always remarkably successful because a new dura would have formed quite naturally and equally well without them

Here we have a group of three well-defined facts established by countless observations and capable of confirmation at any time They bring evidence from different parts of the nervous system disclosing even to superficial consideration a clear common tendency The conclusion to which all point is that breaches of the normal coverings of the nervous tissues allowing contact between the latter and other tissues of the body result of necessity in energetic local reactions The obvious function of such reactive processes is to re establish the normal discontinuity between neural and somatic tissues and to break the contact that has caused the disturbance

We have met then, with a mechanism of a definitely physiological type which may well prove to be concerned with the very nature of the nervous system Our next inquiry will naturally be what is the immediate agent of the reaction we are concerned with In the case of the divided nerve it seems clear that the escaping naked axis cylinder is the actual irritant substance, in the case of the spinal theca it is evident that the cerebro-spinal fluid is the effective agent, in the case of the cerebral dura it is probable that in ordinary conditions with an intact arachnoid, fluid exuding through this is the excitant, though the contact of the brain itself is doubtless also effective It is seen then, that there is a common property possessed by naked nerve-fibres, by cerebro-spinal fluid, and almost certainly by the brain substance itself, which enables these to set up in the somatic tissues an energetic reaction the tendency of which is to insulate the one from the other There is evidence that the neural side of the contact while effective as an irritant, does not contribute to the newly-formed tissue which, whether in the form of the fibromatous material of the bulbous nerve or in that of the extemporised dura is of purely non-neural origin and though obviously a highly specialised material and no mere scar

FUNCTIONAL EFFECTS OF BREACHES IN INSULATION

When we see such well-defined mechanisms for the sealing of breaches in neural insulation we naturally should expect to find such breaches to be of great functional importance and capable of causing serious disturbance in the tissues unnaturally brought into contact There is, in fact evidence that some effect on function is produced, but it is not to the mere prevention of this that we can look to explain the actual existence of these mechanisms themselves; that seems to depend, as we shall see, on some far more fundamental causation. The chief evidence of disturbed function is seen in the case of the divided nerve. Here there are symptoms suggesting persistent excitation of the cut end. These are always present from the first, but they vary greatly in intensity. The sensation of the presence of the limb after an amputation is universal, and it always lasts for several weeks. Not uncommonly it is painful, and then it tends to be more persistent and may last for years. The facts suggest that the exposed nerve-fibres of the stump are excited by contact with the tissues, and that in the bulbous end the stimulation effect gradually dies down until a state of equilibrium is established in which the new tissue sealing off the nerve end is practically as inert towards the nerve as is its normal sheath.

It is natural to suppose that, after a wound of the brain which allowed a scar of non-neural origin to come into close contact with the brain substance, a state of excitation might be set up. The frequency of traumatic epilepsy in cases of direct scarring of the brain is perhaps suggestive, but I know of no evidence that allows us to take the case beyond a mere suspicion.

On the somatic side of a breach of neural insulation there is no disturbance of function beyond the mere reaction already described. It is indeed characteristic of this that it is always and only strictly local. There is nothing in the way even of a diffuse or spreading fibrosis, the new tissue, whether it be an amputation neuroma or a new segment of dura, and although it is of somatic origin, becomes sharply differentiated from the tissues it is derived from and can be separated from them easily without cutting. We see therefore that although breaches of neural insulation are immediately dealt with by energetic, effective, and highly specialised mechanisms, the actual disturbances of function produced by such breaches do not seem to be very important.

INSULATORY ARRANGEMENTS IN THE NORMAL NERVOUS SYSTEM.

If the evidence I have cited bears the meaning I have given it, and we can regard as of high importance to the body the maintenance of neural insulation, then we can look for confirmation in normal structure and expect to find dispositions in relation to the nervous system which are insulatory in function. From the nature of the reaction we have seen to be set up by breaches of insulation we may infer that the influence against which insulatory mechanisms are provided is chemical in kind, and this inference may serve as a guiding principle in the search.

Insulation of the Peripheral Nerves.—Beginning our survey with the peripheral nerves we may at once dismiss from consideration the medullary sheath, which, whatever its physical insulatory function may be, is clearly not in question as a chemical insulant, since non-medullated nerves lie as peacefully and as inert in the tissues as the medullated. The case is different, however, with the neurilemma. Here we have a sheath common to all nerves outside the central axis and continuous without a break from spinal cord or brain to end-organ. The motor nerve-fibre is clothed from within the central nervous system to the muscle-fibre, where the neurilemma completes the sealing off of unnatural contacts by becoming continuous with the sarcolemma itself. The sensory fibres are similarly clothed throughout their length; at their peripheral termination they enter end-organs, all of which throughout a great variety of structure show—with one suggestive exception—so marked an encapsulatory arrangement that one cannot but think that here the need for insulation must be especially vital. The one sensory nerve-fibre which is known to terminate in an end-organ which is not of a strongly capsular type is the fibre that serves the sense of pain. This fibre ends in a free arborisation in the tissue to which it is distributed, and this terminal part is uncovered by neurilemma. It cannot but strike us as significant, though I shall not take up the point further at the moment, that this anomaly of a sensory fibre making naked contact with the somatic tissues should be a character of the fibre concerned with pain, a form of sensibility that in itself is so profoundly anomalous.

The view that the neurilemma is the chemically insulating structure we are looking for is confirmed by the fact that within the central nervous system, where insulation is otherwise provided, it is defective or altogether absent. A point further suggestive of the importance of insulation in the peripheral nerves is the evidence we have that there is an upward drainage along their trunks, so that the products of their metabolism are probably kept from contact with surrounding tissues and are conveyed into the central theca.

Insulation of the Central Nervous System.—When we turn to the central nervous system we find that the method of individual insulation no longer prevails, but that the whole mass of the central axis is protected as one unit. Plainly, of course, it is the meninges which are chiefly concerned. Of these we have already seen that the dura has so important a function that accidental defects in it are repaired with very remarkable rapidity and completeness. The *mechanically protective* function of the dura which doubtless has its importance can scarcely be regarded as explaining its peculiarly impervious texture, its double endothelial surface, and the marked line of cleavage that separates it even when newly formed from the surrounding tissues. All these, however, acquire meaning when they are regarded as evidence of its *chemically insulatory* capacity. Effective as the dura doubtless is in its way, it deals only with one relatively small part of the problem of insulation. If we are right in supposing that all neuro-somatic contacts are inadmissible, and that the blood and blood-vessels belong to the somatic side of the frontier, the nutrition of so large a bulk of nervous tissue as the central nervous system must involve dispositions altogether unique in the body, and we should expect in regarding the circulatory mechanisms of the part from this point of view to meet with features of a very special kind.

The cerebro-spinal fluid and its circulation, the existence and disposition of the multiple membranes of the brain, and the absence of a recognisable lymphatic system in the ordinary sense of the term, constitute a picture which is unique and has admittedly defied thorough explanation. Let us consider it in relation to the avoidance of undue contact between neural and non-neural elements.

THE CEREBRO-SPINAL FLUID.

Let me briefly review the strange facts of the physiology of the cerebro-spinal fluid as they are now known. The cerebro-spinal fluid is an extremely dilute secretion profusely poured out by the choroid plexuses of the cerebral ventricles. It flows through the central cavities of the brain and issues therefrom through the roof of the fourth ventricle into the subarachnoid space. Through this so-called space, which has rather the structure of a cellular spongework, it courses partly into the spinal canal, but chiefly upwards and forwards over the brain to escape into the venous circulation through the arachnoid villi that project into the various lateral extensions of the superior longitudinal sinus. As is well known, any obstruction to the flow in any part of this intricate course downwards within the brain and upwards outside of it inevitably leads to an accumulation of the fluid and to hydrocephalus. Such obstructions are easily produced and common. The cerebro-spinal fluid with its circulation, whatever function it may be there to perform, shows itself thus to constitute a weak spot in the cerebral organisation that as it were invites pathological attack. That the cerebral apparatus should contain an arrangement in some ways so seriously disadvantageous suggests that the mechanism *must* have some deep functional significance that is indispensable to the physiology of the body.

There is no lymphatic system in the ordinary sense in the brain or spinal cord and no flow outwards through the cerebro-spinal envelopes of anything corresponding with lymph occurs anywhere. It seems clear that products of nervous metabolism find their way into the cerebro-spinal fluid in the subarachnoid space; there is, in fact, strong clinical evidence that this fluid has a definite toxicity for the rest of the body, for when it is liberated into the tissues high fever is apt to occur during the short period before absorption is arrested by the inevitable reaction in the tissues that produces encystment. It is thought that metabolic products reach the cerebro-spinal fluid along the so-called perivascular lymphatics. These remarkable structures are tubular extensions of the subarachnoid space which accompany and enclose the vessels that penetrate the brain to their finest ramifications. The interpretation of their meaning has long been regarded as a great difficulty, but if we accept the view that somatic structures like the blood-vessels cannot be admitted to direct contact with the nervous tissues it is natural to regard the perivascular lymphatics as mechanisms to insulate the blood-vessels from this contact. It may be assumed from what we know of the nourishment of tissues in general that there is some kind of leakage from the cerebral tissues comparable with lymph as found everywhere else and presumably of a not dissimilar concentration. This fluid will find its way to the subarachnoid space presumably by the perivascular channels. The disposal of such a material may well be regarded as an exacting task. It is impregnated with products of nerve metabolism and is an eminently "neural" fluid capable of producing energetic reactions in any somatic tissue it meets. Thus there can be no question of its entering the blood stream in the relatively high concentrations that are satisfactory for lymph, and Nature meets the case by providing for it being heavily diluted before it is allowed to join the somatic blood in the cranial sinuses.

The most characteristic feature of the cerebro-spinal fluid as it exudes from the choroid plexuses is its remarkably low solid content. It is by far the most watery secretion produced by the normal body, and one might almost say it is an attempt by Nature to secrete pure water. It contains a small amount of the diffusible substances of the blood, but practically nothing else. So strong is the tendency to keep the fluid watery that the choroid plexuses have a truly astonishing impenetrability to drugs and other foreign substances circulating in the blood. Even the bile-pigments in cases of jaundice fail to find a passage. This fluid, practically amounting to nothing but water, is secreted in large quantities; on rare occasions I have had the experience of seeing as the result of accident what was, perhaps, a large fraction of the total secretion of cerebro-spinal fluid discharged on the surface. The amount of fluid escaping has been very large and the consequent inanition correspondingly profound. The normal function of this great flow of water we may suppose with some confidence to be to flush through the whole subarachnoid space and to dilute the products of cerebral metabolism to such a degree that the resulting fluid can be safely admitted to the general blood stream. This view gets some confirmation from the evidence we have that the fluid in the subarachnoid space has a larger solid content than the fluid in the ventricles.

It is interesting to reflect that the source of this mysterious secretion which has given so much difficulty to the chemical physiologist may turn out to be no more abstruse a thing than Nature's nearest approach in the animal body to a spring of plain water; if this should be so it may also remind us of the small and amusing coincidence that one part at any rate of the tortuous channel through which the fluid runs—the *aqueduct of Sylvius*—has since the very early days of anatomy borne a singularly exact and appropriate name.

In our review of certain aspects of the nervous system we have found reason to regard as of fundamental importance the preservation of an impenetrable barrier between the whole of the nervous system and the rest of the body. This barrier we have seen to be made up of a number of highly special structures and mechanisms. Its function is, on the whole, to prevent contact between the neural and the non-neural, but is also in certain places to permit it. These places are only two: first, where the motor nerve-end comes into contact with the muscle-fibre, and secondly, where the naked arborisation of the pain nerve meets the tissue in which it is distributed. The nervous system is thus kept apart from the body, as we may say, in order that when the two are permitted to meet the reaction shall be the more energetic. It is in fact, then, of the very essence of nervous tissue that it should be different from the other tissues so that it can irritate and be irritated by them. This necessity for a certain "strangeness" of the nervous system may possibly throw some light on its curious embryology. The origin of the nervous system as an epiblastic tube originating on the surface of the body and then sinking into its substance has been investigated chiefly from the morphological point of view, and great ingenuity and research have been expended on it. It may be worth suggesting, however, that the problem has also a functional side, and that the epiblastic origin of an organ that is ultimately to be deeply embedded in mesoblastic tissues possibly has the function of contributing its strangeness and, therefore, its effectiveness to the nervous system as a whole. This quasi-hostility between neural and somatic, between brain and body, is a suggestive and perhaps a disturbing thought, but we shall not attempt here to follow it out.

Neural Insulation in Pathology

It is more convenient at the moment to consider certain pathological evidence that has some bearing on the conclusions we have already reached. That the central nervous system differs from other organs in having a certain inaccessibility has long been recognised in connexion with syphilis. The difference between the strictly extraneural mesoblastic infection of the meningeal gumma on the one hand, and the intraneural parenchymatous infection of general paralysis on the other, shows that the frontier between the two regions is as sharply marked pathologically as it is physiologically. Moreover, the relative inefficacy of antisyphilitic treatment in the parenchymatous infection reminds us that the frontier is also impassable for many drugs.

The dura and arachnoid are in some sense intermediate tissues for they show a certain tolerance for both neural and non-neural contacts, the arachnoid having slightly greater affinities for the former, and the dura perhaps for the latter. That they are, however, fundamentally non-neural in their behaviour, and probably also in their nature, is suggested strongly by their relations to certain tumours. The glioma is probably the one truly neural tumour that affects the central nervous system. Although it behaves within the brain as a malignant infiltrating growth, its spread is restrained by the neuro-somatic barrier, so that while in exceptional cases it may affect the meninges and skull by pressure atrophy it can never invade them or extend to the tissues of the body. On the other hand, the so-called "dural endothelioma" which is relatively so common as a growth involving arachnoid and dura, frequently shows the power to infiltrate the skull and overlying parts as a malignant neoplasm; but although it may press deeply into the brain it never invades it, being restrained as effectively in the one direction as is the neural glioma in the other. The behaviour of these two tumours has long been familiar, but seems always to have been accepted as very much a matter of course. It is perhaps more reasonable to regard it as one of the most significant anomalies in the whole of pathology.

Our final pathological illustration takes us back to the peripheral nerve. We have already seen that this is the only part of the nervous system where a breach of insulation produces immediate and definite disturbance of function The neurilemma seems fortunately, however, to be an exceedingly effective barrier between neural and somatic tissues There is clinical evidence that a relatively slight subcutaneous injury can lead to the formation of a neuro-fibroma presumably through damage to the neurilemma, but this is a rare event of little practical importance, and failing gross injury the insulatory mechanism is wholly satisfactory That this is the result of effective restraint rather than inertia on the side of the nervous system is perhaps shown by that fortunately rare complaint multiple neuro-fibromatosis or Recklinghausen's disease In this condition it has been shown that every fibromatous formation, localised or diffuse, contains nerve-fibrils which presumably by their irritant qualities have given rise to the fibrosis much as might a foreign body or a micro-organism of highly attenuated virulence. It seems clear that it is the presence on a large scale of nerve-fibrils outside their normal insulating sheath which is the proximate cause of the morbid state. It may be doubted whether the neural leakage is a primary manifestation or is due to an essential weakness or collapse of the insulating function of the neurilemma. Whether the failure of this sheath is primary or secondary, absolute or relative, no one who has seen a severe case of the disease can doubt that any general collapse of the peripheral insulatory mechanism makes the life of its unfortunate subject almost insupportable.

INSULATION AND THE PHYSIOLOGY OF PAIN

I have already called attention to the remarkable fact that there is one kind of sensory fibre which ends in a free arborisation in naked contact with the tissues. Our last task in dealing with the insulation of the nervous system is to examine a little more in detail the striking anomaly that in their end-organs the pain fibres make this unique exception to the rule that sensory fibres are insulated up to and including their end-organs

This anatomical uniqueness of the pain fibre in its end-organ is matched by the uniqueness of the physiological characters of pain sensibility, and it is very natural that we should desire to correlate these two anomalies Pain sensibility is remarkable in three respects, first in the quality of the sensation itself, secondly in its threshold of sensitiveness, and thirdly in the nature of its appropriate stimuli. (*a*) The *sensation of pain* is peculiar in that it has a sudden and as it were explosive way of bursting into consciousness, in that it calls urgently and often irresistibly for some kind of motor response, and in that it is in its very nature distracting so as to be incompatible with quiet contemplation or steady judgment (*b*) The *threshold for pain* stimuli is remarkably high, so that in comparison with other forms of common sensibility the stimulus has to be relatively energetic to call forth the characteristic sensation (*c*) The stimuli that call forth pain sensations are remarkable for being very miscellaneous In every other kind of sensibility but pain, the normal response is to a single well-defined physical change—pressure is evoked by weight, touch by movement, cold by loss of heat, warmth by access of heat The ordinary stimulants of pain, on the other hand, such as pressure, pin-pricks, cold, heat, and the electric current make up a thoroughly odd class the members of which show no common character They are all capable of producing the characteristic sensation before, and usually long before, an intensity of stimulation is reached that can be shown to be harmful. That many of the stimuli would be harmful in greater intensities can scarcely therefore be regarded as forming a common physical basis, but must rather be explained as merely a consequence of the normally high threshold

When we consider these peculiarities we can hardly regard them as those of a highly differentiated mechanism, but rather as those of one relatively crude All sensibility may well have been of this kind in organisms to which the distracting explosive qualities of the sensation would be no detriment. If we look upon the peculiarities of pain as an evidence of crudity rather than of differentiation it is relatively easy to correlate them with the uninsulated end-organ of the pain fibre which we must regard as less differentiated and cruder than the complex end-organs of the other fibres Pain sensibility would thus owe its special character to being the function of a nerve-fibre of a peculiar kind, which while relatively insensitive responds in an exaggerated way when its threshold is reached. Presumably these characters are to be associated with the uninsulated end-organ, and we may suspect that it is this lack of insulation which gives to the fibre its characteristic features of blunt sensitivity and emphatic response

We possess a possible source of further light on this problem in the phenomena that accompany the recovery of function in sensory nerves after division and immediate suture It is well known that this process as observed under experimental conditions in the human subject by at least three independent groups of investigators, is accompanied by remarkable modifications in all forms of sensibility. It is impossible to refer to these modifications in detail, but it gives them in a broadly approximate way—and I speak from actual personal experience of them—to say that they are generally in the direction of the peculiarities shown by normal pain; in other words, the modified sensations compared with the normal are more explosive and more urgent, they have a higher threshold, and they call for some kind of motor response. The explanation of these and the other modifications that are to be observed during recovery of sensory nerves has differed with different investigators. It is far too much a matter of detail to discuss these differing hypotheses here, but there is one criticism to be offered of some that is relevant to the general attitude we have tried to support This criticism is that there has been a tendency to approach the problem in too abstract a way. It has been assumed that the question is one of the mere return of functions that are present in the normal and in the form in which they are then present, modifications in the character of sensation being ascribed to such factors as the order of return and the rate of return of different functions, and the modification in character of one form of sensibility to the presence or absence of another This is to assume that the processes and incidents of regeneration itself have nothing to say to the problem; and that the struggle between the advancing nerve-fibres and the reaction they arouse from the line of suture onwards can be ignored To take it for granted that the naked growing fibres can pass through this difficult and prolonged ordeal without any alteration in their function. and to limit the problem in this way to strictly and exclusively neural factors seems to me a method less concrete and practical than the case demands

An alternative hypothesis. which is at any rate more comprehensive and more simple. can however, be put forward The general tendency of all forms of sensation yielded by a regenerating nerve to develop a certain resemblance to pain reminds us that regenerating fibres resemble pain fibres in a lack of complete insulation It is probable, therefore. that imperfect insulation tends to render all fibres less sensitive than normal but more apt when effectually stimulated to respond in an exaggerated explosive way With the advance of regeneration the fibres serving touch heat, and cold become once more connected with end-organs, and then their insulation by the junction of the neurilemma with the capsule of the end-organ can be completed. The completely insulated fibre, having lost its temporary resemblance to the pain fibre, becomes once more sensitive to the finer stimuli and ceases to yield exaggerated responses

The process of regeneration thus seems capable of causing a regression of function in all kinds of nerve-fibres to a cruder type that in the normal is represented only by pain This regression occurs because during regeneration insulation must necessarily be defective. According to this hypothesis normal pain and the sensibility of regenerating nerves give us an insight into the ancestry of common sensation Primitive sensibility of all kinds we may suppose to have been like pain in us, it had a relatively high threshold, but it was effective because its sensations were urgent and explosive and, of course (also like pain in us), were exactly localised Among such sensations fine discrimination was plainly impossible With the development of the completely insulated nerve and end-organ, the fibres thus equipped became capable of yielding sensation to finer and to specialised stimuli, and of a quality no longer explosive but able to be submitted to discrimination, at the same time the large number of pain nerves remained in their primitive state to warn the body of strong stimuli by urgent sensations, among which there was no power and no need for discrimination because their function was to excite immediate response

The great and manifest difference between the vertebrate and the invertebrate nervous systems is that the former is centralised and the latter is scattered throughout the body The facts I have quoted and the inferences I have drawn suggest the hypothesis that side by side with centralisation and rendering it possible, insulation also must have proceeded Insulation, on the one hand, must have been made increasingly necessary by the growing differentiation of neural from somatic tissues, and, on the other hand, must have helped to sharpen this very difference It is not, therefore, surprising that a function so fundamental is not only recognisable in the structure and behaviour of the normal nervous system, but is also evidently at work in morbid processes and constitutes at once a help and a limitation to the work of the surgeon

---

FURTHER OBSERVATIONS ON IMMUNITY IN RELATION TO TRANSPLANTABLE MALIGNANT TUMOURS.

By THOMAS LUMSDEN, M D. ABERD

(From the Department of Experimental Pathology, Lister Institute)

THE conclusions arrived at and reported in previous communications in THE LANCET[1] have been confirmed and extended The further experiments described below were mostly designed towards supplying an answer to the following questions —

(A) What is the nature of the antibodies which can be demonstrated to exist in the serum of an animal (e g, rabbit sheep, horse) which has been repeatedly inoculated with tumour cells from another species (e g, mouse, rat, man) ?

(B) When by treating one of two coexisting tumours both are caused to disappear, may we conclude that products absorbed from the regressing treated tumour effect the cure of the untreated tumour by giving rise to antibodies in the host's blood or tissues ?

(C) When an animal has been rendered resistant to a particular tumour wherein does its immunity consist ?

The methods employed in these investigations were (except where detailed below) those described in the papers above referred to

Antiserum Treatment in Vivo

To 50 rats bearing a J R[2] sarcoma of each hind foot, varying in size from a green pea to a haricot bean treatment was applied as follows —

In 38 rats 0 9 c cm of anti J R S serum was injected in three doses of 0 3 c cm each the circulation in the foot being coincidentally shut off by constriction at the ankle for 2–3 hours In all of these animals the tumour of the treated foot disappeared rapidly, while in 37, about 7–10 days later, regression began also in the untreated foot and went on to complete cure In one rat, probably because the treated tumour was too severely constricted, the untreated tumour grew progressively The fact that in these cases the untreated tumour only begins to absorb from 7–10 days after the cure of the treated tumour, indicates that the regression is not spontaneous but is due to treatment This view is corroborated by the fact that of the 50 control untreated animals only in five did the tumours regress Fig 1 shows the condition of the tumours in the last 24 controls when the experiment ended, it will be noticed that in all except two of these, progressive tumours have developed In 12 rats of this series of 50, cure was effected without constriction by means of repeated inoculations of antiserum into and around the tumour Of this dozen animals, in six the antiserum used was one made against mouse carcinoma (M_{63}) Even in these 12 rats it is possible that part at least of the curative effect was due to interference with the vascular supply, for not infrequently hæmorrhages occur into the tumour after the antiserum has been injected

In a previous paper[3] it was reported that after cure of their feet in the above way rats were found to be absolutely immune to the tumour concerned It is now possible to state that this immunity is of long duration A test inoculation was given to 50 rats six months after their recovery. Of these, only two developed progressive tumours, the other 48 were still completely resistant to a sarcoma which grew rapidly in all of 12 normal animals inoculated with identical material at the same time It must here be reiterated that *striking results can only be obtained by using a tumour of great virulence and in its most active phase*, otherwise so many of the control tumours might regress as to lessen the cogency of the experiment

In a large number of animals the attempt was made to cause the disappearance of tumours of each flank in the above way The results were not very satisfactory The tumours grow so rapidly as to cause death in three or at most four weeks Thus the untreated tumour attains enormous proportions before the regression of the treated tumour can influence its growth, by which time the defence mechanism of the animal appears to have broken down completely In the last 20 animals a second tumour was inoculated a week later than the tumour which it was intended to treat Of these animals, in six regression of the treated tumour was followed by absorption of the untreated tumour and the animals were thereafter found to be immune, in ten the attempt to cure the larger tumour failed and both tumours grew progressively, while in four rats the treated tumour was so severely constricted that it separated after a day or two and no effect was produced on the smaller untreated tumour *It appears that in order to effect cure and evoke immunity gradual regression of the treated tumour is essential*

Attenuation

Many attempts were made to attenuate J R S cells (by heat by cold, by autolysis, and by treating the cells in vitro with antiserum, &c), so that when inoculated into a tumour-bearing animal an effect comparable with that produced by gradual regression of one of two tumours should be obtained These attempts were unsuccessful Frequently attenuation was not carried far enough and a fresh tumour arose at the spot where the attenuated cells were injected Even when this did not happen not only was it found impracticable to cure an animal in this way, but the attempt to produce immunity to a subsequent test inoculation also failed The only successful experiment, inconclusive on account of the small number of animals used, was one in which J R S fragments coated with agar were injected into three rats bearing a tumour and into three healthy rats No curative effect was noticed but the three healthy rats were found two weeks later to be immune, while three control rats of similar breed, given a test inoculation with the same material, all developed progressive tumours This modification, suggested by Dr P Bruce White, will be repeated, using a larger number of rats

---

[1] THE LANCET, July 12th, 1924, and Feb 21st and Sept 12th, 1925

[2] J R S is an abbreviation for Jensen's rat sarcoma M_{63} for the mouse carcinoma, so named by the Imperial Cancer Research Laboratory

[3] THE LANCET, Sept 12th, 1925

A. *Nature of Antibodies Demonstrable in Heterologous Antisera*

In the attempt to elucidate this point a very large number of experiments have been made.

The following antisera have been produced and tested on many different tissues growing in vitro Anti-J R S from 6 rabbits, anti-J R S from 1 sheep, anti-J R.S from 1 horse, anti-human-cancer from a sheep, anti-rat-kidney from 1 rabbit, anti-rat-tissues generally from 1 rabbit, anti-rat-tissues (except kidney) from 1 rabbit, anti-M_{63} from 6 rabbits, anti-M_{63} from 9 rats Twelve rats which had been cured of two foot tumours and were thereafter immune have been "hyper immunised" by injecting into them 1 c cm. of minced J R S subcutaneously or intraperitoneally each week for 2–3 months

In all cases before beginning to make an antiserum from a heterologous animal its serum should be tested in vitro on the normal and tumour tissues of the species from which the antigen is to be taken. This is advisable, because it will be found that the sera of many rabbits, for instance, normally have a lethal effect on rat or mouse tissues and tumours When this is so an antiserum from such a rabbit will kill tumour cells in vitro, but may not do so with any great specificity

The method used in testing these sera was to culture on the same coverslip two fragments of tumour (with or without normal tissues) in separate drops of normal serum On the first, second, or third day, when growth was well established, one of these drops was replaced by antiserum and the other by an appropriate normal serum for control In this way all the conditions, except the sera to be tested, were alike

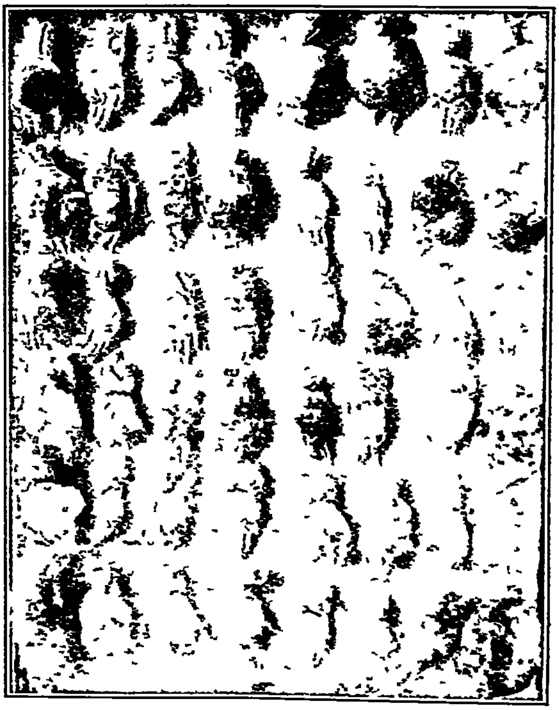
When anti-M_{63} serum from a rat is thus tested it is found to kill mouse cancer cells rapidly They never move again after the antiserum has reached them and in 10–20 minutes the other changes characteristic of chromatolytic death [3] appear [4] The normal mouse tissues (heart, kidney, salivary gland, spleen) are much less, if at all, damaged This antiserum has no lethal effect on J R S cells, in vitro, but if an anti-M_{63} serum, made from a rabbit, is applied to a culture of J R S and normal rat tissues the tumour cells are rapidly killed, while the normal tissues survive but grow less vigorously than the controls in normal rabbit serum Conversely, if an anti-J R S serum is applied to M_{63} cells and normal mouse tissues, the malignant cells die rapidly, the normal tissues survive This interchangeability of certain anti-malignant sera might mean that we are dealing with (1) anti-malignant antibodies, (2) anti-mouse-rat group immune bodies, or (3) both of these may be present Since the anti-M_{63} serum from a rat does not kill J R S cells while anti-M_{63} serum from a rabbit does, we may infer that the latter serum is lethal to sarcoma cells by virtue of the anti-rat bodies which it contains

The following results shed further light on the question —

1 *Antisera to Normal Rat Tissues* —Such antisera, if made from a wide range of rat tissues and organs, kill all normal and malignant cells of both rats and mice, but even to such sera the malignant are definitely more susceptible than the normal tissues When, however, an antiserum is made to a particular organ alone, the antibodies to the antigenic organ may attain so high a titre that if, say, anti-rat-kidney serum is applied to a culture of rat sarcoma or mouse cancer, and rat or mouse heart and kidney, the malignant cells, though they show signs of damage even more rapidly than the kidney carpet, sometimes recover while the renal cells never do so. The heart muscle cells continue to grow and show mitotic division in an appropriate dilution (1 in 4) of such a serum (Fig 2)

This special lability of the cancer cell to antibodies is all the more striking since to every other agency which has been tested by me the malignant cells (especially M_{63}) are more resistant than normal cells Thus, after growth is well established, a culture of M_{63} will survive, even if it is not re-fed, for three weeks. Under these conditions the normal tissues die after a week or ten days To ultra-violet rays,[5] radium (γ rays), bacterial infection, &c , mouse cancer cells are much more resistant than the normal tissue cells when cultured in serum

FIG 1



Photograph of specimen jar containing both hind feet of 24 control rats inoculated with Jensen's rat sarcoma Progressive tumours have developed in all save two feet The figure shows that when a virulent strain of tumour is employed spontaneous regression does not take place, except in a very few instances

2 When an anti-J R S serum from a sheep is absorbed with normal rat tissues it still proves fatal to J.R S cells in vitro The absorbed serum is non-toxic to normal rat tissues The dying sarcoma cells do not, however, in this case show all the typical signs of chromatolytic death

3 Perhaps the most specifically anti-malignant of all the sera tested is the antiserum obtained from a sheep which has been repeatedly inoculated with human mammary cancer and human breast tissue. When this is applied to mouse cancer cells cultured in vitro it kills them in exactly the same way as anti-M_{63} serum does, and almost if not quite as quickly They are dead within 5–10 minutes This human cancer antiserum is entirely non-toxic to mouse heart and kidney and even mouse skin, spleen, and salivary gland survive its application The reaction is so exceedingly specific that where cancer cells have invaded (as they frequently do) a growing carpet of normal cells they are picked out and killed instantly, while the surrounding normal

---

[4] When a culture has been killed by antiserum it may be set aside at room temperature for weeks or months without any further changes occurring in it apart from those characteristic of chromatolytic death which appeared within the first few hours after application of the antiserum. No autolytic disintegration takes place The cells appear to be fixed just as if any ordinary fixative had been made use of Whether this is due solely to the chromatolysis, or results from destruction of ferments normally present in the cells has not been ascertained This point will be further investigated It is possible that ferments may be an essential factor in living antigens I have at any rate some evidence that dead are less effective than living tumour cells as antigens

[5] Moppet The Lancet, May 1st, 1926

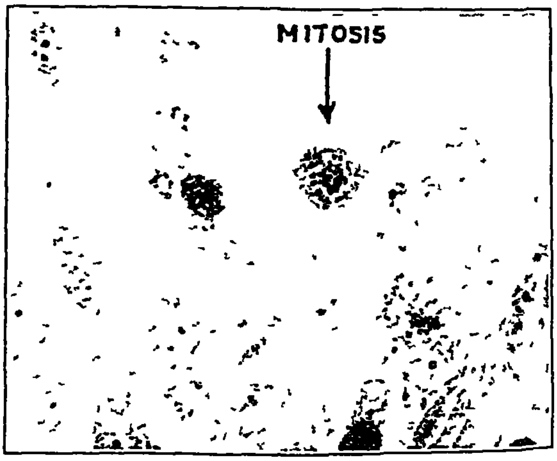
tissue cells are uninjured and continue to show mitotic division (Figs 3 and 4) The serum of this sheep tested before it was injected with human cancer was quite a satisfactory medium. Mouse cancer cells grew well in it

There has been considerable difficulty in obtaining human cancer in a condition which admits of its culture, hence it cannot at present be stated whether anti-M_{63} serum kills human cancer cells in vitro or not If it does it should contain no anti-human elements, and so should be an excellent reagent with which to attempt the treatment of cancer in man

All these rapid cytolytic effects of antisera require the presence of complement, and the addition of a little fresh normal serum reactivates certain antisera which have been kept in the cold room for over a year and which, without this addition, appeared to have lost much of their potency When no complement is supplied the antisera may still cause agglutination of the tumour cells in vitro and generally, though not invariably, the clumped cells gradually die in some 6–24 hours [6]

The point cannot yet be regarded as proved, but certain in vitro observations do suggest that cancer cells may have to a limited extent some power to acclimatise themselves to repeated applications of antisera and to other adverse conditions Although in vitro the anti-human-cancer serum would appear to be an ideal cure for mouse cancer, it does not act as such when injected into the tail vein of a cancerous mouse Large and increasing doses can be given in this way, 0 5 and later 1 c cm of the serum does not kill a 30-gr mouse When such a dose is given daily there is definite delay in the enlargement of the tumour, but if after a week the treatment is discontinued the cancer resumes its normal rate of growth. Whether more prolonged treatment will produce cure will be tried as soon as a further supply of serum can be obtained

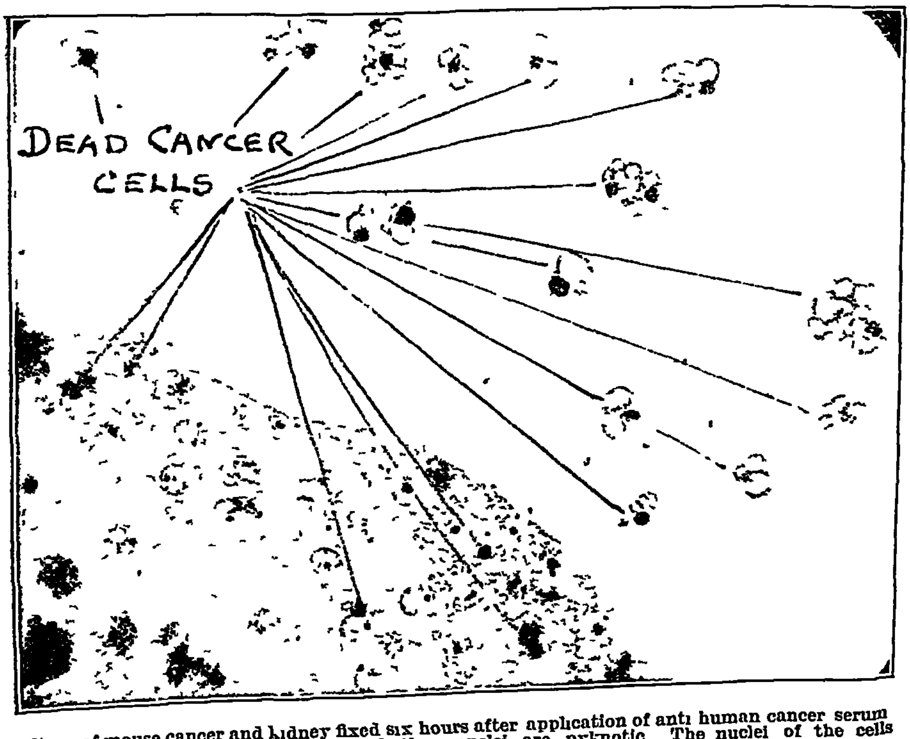
FIG 2



Carpet of rat heart muscle cells growing freely in anti rat kidney serum which had killed an adjacent culture of kidney cells in a few minutes The specimen was fixed 24 hours after application of the antiserum (× 500 Hæmatoxylin.)

The fact that a mouse which is rendered ill by a first dose of 0 5 c cm. is unaffected by twice that dose a day or two days later may indicate that the mouse has some mechanism by which it gets rid of, fixes, or neutralises the antiserum, and this may to some extent account for the disappointing result of treatment by intravenous injection It seems doubtful if the antibodies reach the living cancer cells, and if some means can be invented which will ensure this the effects of in vivo treatment should more nearly correspond with the striking in vitro results.

FIG 3



Culture of mouse cancer and kidney fixed six hours after application of anti human cancer serum The cancer cells are all dead and their nuclei are pyknotic The nuclei of the cells composing the kidney carpet stain normally (× 500 Hæmatoxylin and Sudan)

B *Production of Antibodies in Blood or Tissus of Host*

When it was observed that two coexisting tumours both regressed, although only one was treated, it appeared possible that products absorbed from the treated tumour gave rise to antibodies in the host which caused the subsequent absorption of the untreated tumour To determine whether this was so, the serum of immune and later of "hyper-immunised" rats was applied to J R S cells cultured in vitro The J R S cells, so fed continued to grow as freely as ever, even when abundance of complement was certainly present There being thus no evidence of antibodies in the serum an extract of many of the tissues of a "hyper-immunised" rat was then added to the rat's serum, but without the least damage to the cultured J.R S cells Yet the rat from which these fluids had been taken was completely resistant to J R S in any part of its body. It was clear, therefore, that there must be some fundamental difference between this "homologous" immunity of an animal to a tumour of its own species and the "heterologous" immunity evoked in a different species—e g., by injecting J.R S cells into a rabbit, sheep, or horse

---

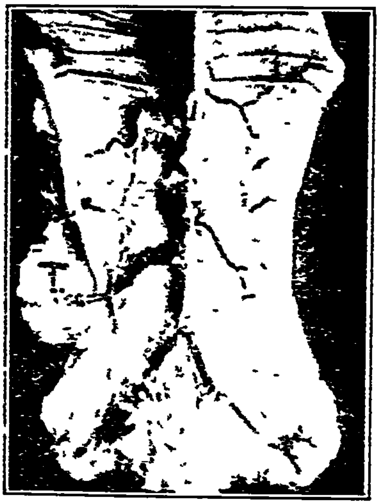
[6] The reactivation of old or heated sera by the addition of complement is not invariable Thus it was found that when a freshly prepared anti human cancer serum, which killed M_{63} cells in vitro very rapidly, was heated to 56° C for two hours, it had thereafter no deleterious effect on a culture of mouse cancer cells, and the addition of complement did not restore its activity against these cells We may conclude that in this case heating destroyed some other heat labile factor besides complement It had been noticed as the result of many previous observations that while old reactivated anti M_{63} sera were still very toxic to mouse cancer cells, they had lost much of their specificity It appears that, while mouse rat group antibodies are stable, specifically anti malignant bodies are labile to heat, and lose their activity rapidly (10–12 days) even when kept at 0° C This may explain some of the disappointing results obtained with anti cancer sera, and may have a wide application to bacterial and other antisera

To test the matter yet further, fragments of the spleen testis, or salivary gland from such hyper-immunised rats were grown in the same drop of serum with a fragment of J R S Both fragments grew as usual, the normal and malignant cells intermingling without apparent harm to either This occurred even when the fragments were grown in the serum of the hyper-immunised rat To make certain that such an occurrence could not take place in vivo J R S fragments were injected into the testes of anæsthetised "hyper-immune" rats, but (as in all other situations) no tumour resulted. Probably in such instances no stroma is supplied as was pointed out long ago by Bashford, Murray, and Cramer* and others In the case of the recovery from an untreated tumour, however, subsequent to absorption after treatment of another coexisting growth stroma must have already been present, so that possibly some other factor is involved as well as the mere refusal to form a stroma Dr. P. Bruce White kindly examined the serum of such a hyper-immunised rat by means of the precipitin reaction and also by complement-fixation tests: by neither method did he find any evidence of anti-J.R S. immune bodies in the serum.

C Possibility of a Nervous Factor in Immunity

Since no evidence indicating the nature of its immunity could be found in the blood or tissues of a "hyper-immunised" rat the possibility of its resistance being of nervous origin was considered, for a change in some nervous reactivity of the animal might explain the universal distribution of the immunity It is noteworthy that not only the veins leaving a tumour but also the arteries going to it are enlarged. Now this increase of the arteries before they have reached the tumour area strongly suggests that some nerve-reflex is at work and that it is in response to some stimulus initiated and maintained by the implanted tumour that the arteries going to the area become enlarged and possibly also that a stroma is produced (Fig 5)

FIG 5



Right Left

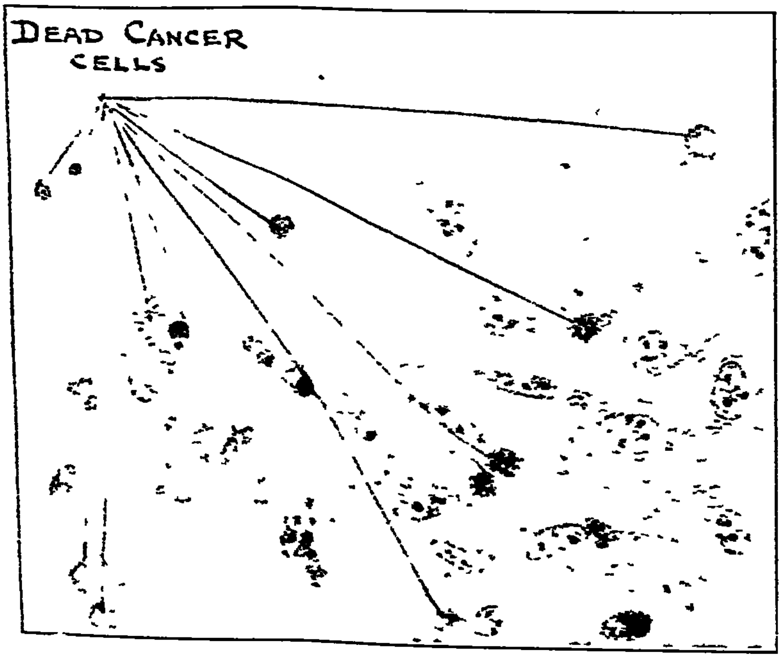
Photograph showing the enormous enlargement of the arteries on the right (tumour bearing) side The tumour (T), which formed about one-fourth of the weight of the rat has been almost entirely removed. The arteries have been injected.

In 40 rats an attempt was made to get some evidence on this point A J R. sarcoma was implanted in the sole of each hind foot of each rat and the sciatic and femoral nerves on one side were severed in some cases before, in others after the implantation. If anything the tumours grew rather more rapidly on the anæsthetised foot It would appear, then, that if any nerve impulse is effective in the way suggested above it does not pass by the ordinary somatic nerves It is impossible in so small animals to denude the arteries going to a tumour but further experiments on this question are contemplated.

Discussion.

There are two ways in which tumour antisera appear to be non-specific. (*a*) They may be non-specific to the animal from which the antigenic tumour was taken. Antiserum made in a sheep by inoculating it with human mammary carcinoma kills mouse cancer (M_{63}) cells in vitro almost instantly, while it does not kill rat or mouse normal tissues (*b*) Antisera may be non-specific to the particular antigenic tumour Any antiserum to J.R S made from a rabbit or sheep kills in vitro M_{63} almost as rapidly as J R S and, conversely, anti-M_{63} from a rabbit kills J R S cells

FIG 4



Culture of mouse cancer and heart muscle to which anti human-cancer serum has been applied. All cancer cells were killed in 10 minutes. Not a single heart cell was damaged and the heart fragment was beating actively when the specimen was fixed 24 hours after the antiserum was applied The heart cell nuclei stain normally. The cancer cells show complete chromatolysis (× 500 Hematoxylin and sudan) rapidly This may be due to the presence of anti-mouse-rat group antibodies, a supposition favoured by the facts that anti-M_{63} serum from a rat does not kill J R S cells in vitro, and that anti-rat antibodies made by inoculating a rabbit with normal rat tissues kills both J R S and M_{63} cells even more rapidly than they kill the normal tissues

---

* Third Scientific Rep Imp. Canc Res Fund, p. 355

The indication from the above observations is that when a carcinoma is injected into a heterologous animal it calls forth at least two varieties of antibodies (*a*) Anti-carcinoma antibodies, (*b*) antibodies to the group of animals from which the antigenic cancer was taken It would appear to be by means of (*a*) that anti-human cancer serum kills M_{63}, and by antibodies of type (*b*) that all rabbit antisera (made to rat or mouse tumours) kill when of high titre any variety of tumour cells from rats or mice, whether they are carcinomatous or sarcomatous Malignant cells appear to have a special lability to antibodies of almost any sort, for, as mentioned above, they are even more susceptible to a pure anti-rat serum than the antigenic rat normal tissues themselves Where, however, a single organ—e g , kidney—is used as an antigen, so high a concentration of specifically anti-kidney antibodies may be obtained that the kidney cells are even more certainly killed than the cancer cells when a diluted (1 in 3 or 1 in 4) serum is used The general impression got from application of 22 different antisera to somewhere between 400 and 500 cultures is clearly that both (*a*) and (*b*) group of antibodies are present in an antiserum made by inoculating into a heterologous animal any tumour as an antigen

The absence of antibodies in the serum and tissues of a " hyper-immunised " rat answers in the negative the second question set out at the beginning of this paper.

The mechanism of acquired immunity to a homologous tumour is still obscure, but there is reason to hold that it is not brought about by means of antibodies, such as are found in the serum of an animal into which heterologous tumour cells have been injected

The possibility that acquired immunity consists in the desensitisation of some nervous mechanism cannot entirely be ruled out, but no experimental evidence in favour of this hypothesis has been found

The negative results sometimes obtained in the treatment of flank tumours, attenuation and neurotomy do not, by any means, exhaust the possibilities, and further experiments will be made by varied methods and with different antisera

Conclusions

1 It is confirmed (50 cases) that when a rat bears a J R sarcoma on each hind foot, the cure of one by injection of antiserum is invariably followed by the regression of the other untreated tumour The results obtained when attempting to repeat this experiment with two tumours of the flank were much less satisfactory, for reasons explained above

2 A rat cured as above is absolutely immune to J R S , and test inoculations do not produce tumours, yet sarcoma cells grow freely in vitro in the serum of such a rat, even when by repeated weekly injections the animal has been " hyper-immunised "

3. If the tissues (spleen, testis, salivary gland) of such a hyper-immunised rat are cultured in the same drop of this rat's serum as a fragment of sarcoma, both normal and malignant cells flourish and intermingle without apparent harm to either There is thus no evidence that the immunity of such a rat is due to a humoral or general tissue reaction The immunity does not appear to be due to any reflex by way of the somatic nerves Attempts to obtain curative or immunising effects by inoculation of attenuated tumour cells failed, with the possible exception that fresh sarcoma cells coated with agar at 44° C may have a protective influence

4 Malignant cells were found to be more susceptible than any of the normal tissue cells to each of the antisera tested (except to anti-rat-kidney serum) The serum of many normal rabbits was found to be lethal to cancer cells, and only to a lesser degree injurious to normal mouse tissues

5 Anti-J R S serum kills M_{63} cells rapidly in vitro, and conversely anti-M_{63} serum from a rabbit kills J R S cells

6 Heterologous antisera made by injecting mouse or rat malignant cells into a rabbit or sheep contain antibodies which are anti malignant but also others which are anti-mouse-rat group These two varieties of antibodies act as adjuvants in causing the death of malignant cells in vitro

7 The rapidly cytolytic antisera require complement in order to produce their effects While addition of a little fresh serum reactivates certain sera more than one year old which had per se lost much of their potency, it does not restore their specific affinity for cancer cells The anti-malignant-cell element in antisera appears to be almost as labile as complement Anti-rat-mouse group antibodies, on the other hand, are very stable

8 An antiserum made to rat kidney alone is more toxic in vitro to rat kidney than to any other tissue on which it was tested

9 An antiserum made by inoculating human mammary cancer into a sheep kills M_{63} cells in vitro practically instantaneously It is non-toxic to mouse heart or kidney, and has little, if any, deleterious effect on mouse salivary gland or skin This serum damages J R S cells but not normal rat tissues in vitro

10 This anti-human cancer serum can be injected intravenously into mice in massive doses—e g , one-fiftieth of the body-weight—without serious damage At second and subsequent inoculations mice can tolerate twice this dose

My grateful thanks are due to Prof C J Martin, F R S , for allowing me the privilege of working at the Lister Institute and for his advice and encouragement I am also much indebted to Miss A C Kohn-Speyer, B A , a voluntary worker, for her skilful help She has recently done most of the practical work involved in the tissue culture experiments Specimens of human cancer have kindly been supplied to me by the Middlesex Hospital surgical staff through the good offices of Prof S Russ, by Sir Crisp English, K C B , Mr G H Fagge, Mr W H Ogilvie, and Mr Max Page Mr Sampson Handley has kindly sent me specimens from private as well as hospital cases Finally, I must express my gratitude to the British Empire Cancer Campaign, whose grant has made it possible for me to devote my whole time to cancer research The Campaign has also most cordially assisted me in every other way in its power

Note —Since the above was written, the serum of a rabbit which had for another purpose been inoculated by a colleague repeatedly with the spermatozoa of a higher mammal, has been tested upon mouse cancer cells and normal tissues The antiserum kills mouse cancer cells typically and rapidly, it is less deleterious to mouse kidney, and does not damage fibroblasts or heart muscle cells This observation opens up a wide field for future investigation It appears to indicate that cancer cells are specifically labile to antisera made against certain heterologous toti-potential cells It is proposed to try whether an antiserum made against normal mycetozoal cells would act in the above way and also whether by inoculating a cancerous animal with some such primitive cellular antigen or with some heterologous cancer, it could be made to produce antibodies which would incidentally destroy the cancer cells growing in it

---

Manchester Hospital Saturday Fund —The local hospitals have benefited this year to the extent of £13,573 from the Manchester and Salford Saturday and Convalescent Homes Fund Since its inauguration the fund has distributed £112,377

PSYCHIC TRAUMAS

(MENTAL ACCIDENTS*)

BY ALBERT E DAVIS, F R C S EDIN, L R C P,
HON PHYSICIAN, LIVERPOOL PSYCHOTHERAPEUTIC CLINIC

THE public, the medical profession, and many psychologists are apt to look upon every strange mode of thinking, such as phobias, obsessions, &c, as abnormal, and the word abnormal has come to be regarded as synonymous with diseased. We have been forced to take heredity and environment into our calculations, but have we up to the present taken chance or accidental causation into consideration sufficiently? I maintain we have not. We have gone far afield, and have dug very deeply, down to the infantile and the prenatal, in our psychological explorations, whilst in many cases overlooking the obvious. In dealing with physical ailments this attitude does not obtain, we are ready to consider either accidental or pathological causation, and this paper is a plea for the adoption of a similar attitude in psychical dysfunction.

Why should we assume that a woman found wandering in a strange town at 3 A.M. with total loss of memory is mentally afflicted? May it not be that, owing to the conduct of a drunken, blackguardly husband her conscious mind has been strained beyond endurance and has passed into a state of recuperative oblivion? I had such a case recently.

Are tired and exhausted brain cells to be looked upon as diseased? If so, let us be consistent and classify tired muscles as diseased. The pronounced difference in the reaction of muscles to fatigue from the reactions of mind and nerve may to a great extent account for our general attitude. Tired muscles refuse to work until they are rested, tired minds and nerves, on the contrary, become distressingly active and hypersensitive until absolute exhaustion ends in trance or oblivion.

The peevishness and irritability of a tired child finds its counterpart in the peevishness and irritability of the nervously exhausted adult—the neurasthenic. During the late war the long-continued strain of unaccustomed, disagreeable, and frequently intolerable conditions of life in the trenches, together with repeated mental shocks in soldiers of sensitive temperament, caused in some instances a complete cessation of mental activity. They were found wandering aimlessly around without memory, knowledge, or thought. Exhausted nature had blotted out consciousness to give it rest. This is the sleep of utter exhaustion, and is a temporary condition which ought not to be confused with actual degeneration of the brain due to disease. The causes are accidental, not pathological. It may be claimed that such cases occur only in persons of unstable, nervous constitutions. I contest this. It may occur in healthy, highly sensitive nervous organisations.

Again, I can conceive of circumstances which would break down the power of resistance of any human being. I do not claim that trauma is the only cause, but I do claim that it is a frequent cause, and ought to be borne in mind when we are searching for the causes of phobias, obsessions, and alterations in conduct and thinking. I take measures to exclude accidental mental stresses before I assume disease, and the percentage of cases which one can trace to accidental circumstances is astonishing.

The therapeutic value of this attitude is frequently very marked. The encouraging effect on the patient of learning that his symptoms have resulted from accidental circumstances and not from mental defect is in itself sufficient to warrant the psychotherapist adopting this as a routine method. Cases of somnambulism or ambulatory automatism are due according to Prof Pierre Janet, to a dissociation of personality. He attributes this dissociation or splitting of the personality to a lowering of nervous tension, with exhaustion of the higher functions of the brain and a consequent retraction of the field of consciousness. The lowering of the tension may have been due to mental stress or emotional shock. I am in agreement with Janet on this part of his theory, but I join issue with him when he regards every dissociation, whether spontaneous or not, as evidence of hysteria.

Criticism of Freud's Determinism

Prof Sigmund Freud says the determining factor of dissociated memories is mental conflict brought about by incompatible desires, such as a wish which is unbearable or distasteful to the rest of the personality. The desire is too painful or obnoxious to be entertained in consciousness, and it is persistently repressed and pushed out of consciousness, so becoming dissociated or split off from the personality. He claims that such wishes invariably can be traced back to early or infantile sexualism. Now the object of my paper is to draw attention to the importance of chance or accidental circumstances in the production of phobias, obsessions, dissociations, and perhaps minor forms of delusions.

By chance I mean only such accidental circumstances as have given rise to intense mental emotion or stress. Right on the threshold I find myself opposed by Freud. He allows little or nothing for chance. His theory is one of rigid determinism. He and I are in agreement that in the mental sphere there is no effect without a cause. But there we separate. I maintain that emotion originated by external factors of sufficient intensity can produce a splitting off of a part of the personality, a part which pursues its own course independently of awareness and of the will. A chance occurrence to him is simply a convenient point round which we get the conflict between infantile sexual desires and the conscious Ego or personality. In order to support his theory that our thoughts, our reactions to circumstances, have been so rigidly determined for us beforehand that we are never free agents, he has dug down to the level of primitive instincts, and held up the infantile sexual as the determining force for the whole of our lives.

I also propose to dig down into the primitive and see if I cannot disclose a yet stronger instinct round which the play of feeling will account for dissociation without the necessity of accepting Freud's determinism. Whilst differing from Freud's theory of ultimate causation, I have the greatest admiration for his original and practical methods of unearthing hidden mental processes.

He approached the psyche from the aspect of disease, hysteria, and found by association of ideas that his mental analyses frequently led him into the childhood of the patient. At this earlier period of his work he had a more open mind, and he searched for traumas in the childhood age. He found that in several of his cases gross sexual bodily outrages had been inflicted on them, and that in others the outrages had been the witnessing of scenes so improper, or environment so sexual, as to inflict a permanent injury upon the child's future mental and moral outlook.

I have had many similar cases. Freud, speaking of this period of his work, says of himself and his colleague, J. Breuer, "We reached the conception that the hysterical symptoms are permanent results of psychic traumas, and that the amount of affect (feeling) belonging to them was pushed away from conscious elaboration by special determinations, thus forcing an abnormal road into bodily innervation."[1] He starts off with the theory of psychic trauma, but then experiences a check, he finds that many of these tales of seduction or outrage were simply hysterical fancies, and later still he finds these fancies had a purpose—they were to conceal early sexual perversion in the patient himself. He made hasty and too far-reaching conclusions from a mere handful of very morbid material. "My 13 cases of hysteria were throughout of the graver kind, they were all of long duration, and some of them had undergone a lengthy and unsuccessful asylum treatment."[2]

---

* A paper read before the Liverpool Psychological Society.

Freud, still approaching the subject by the morbid route, with an unconscious bias urging him to make the exception into the rule, surrounded by an atmosphere of hysterical (or insane) deception and, limiting himself to the study of hysteria, found his progress barred by this complication.

The "Traumatic" Element

He says: "The emphasis laid on the 'traumatic' element of the infantile sexual experience disappeared with this explanation, and it remained obvious that the infantile sexual activities (be they spontaneous or provoked) dictate the course of the later sexual life after maturity."[3] Personally, I fail to see anything obvious except his own obvious bias towards one single idea to cover the whole field of psychical disturbance. He will give up the traumatic theory, but holds on grimly to the sexual, and to support his theory digs deeply into the infantile and even into prenatal life.

But he is now faced by another difficulty. All infants are very much alike, and if some have, they all have, sexual wishes, so he builds up elaborate theories of a pleasure principle and a reality principle dating from or soon after the birth of the child, and going on in the unconscious and preconscious minds independently of consciousness. By the interactions of these principles the sexual tendencies of the infant may be sublimated, or refined later on into channels of useful and socially acceptable activities; this is the normal result. If these primitive wishes are not repressed they persist in adult life as sexual perversions. If they are repressed too much we get prudery and extreme bashfulness. If the strengths of the sexual wish and of the repression are about equal we get a nervous complaint. Freud maintains up to the present, "In a normal vita sexualis no neurosis is possible."[4] Some cases of neurosis undoubtedly have had an abnormal vita sexualis, but to make this theory universal is proof that the author is suffering from an unconscious sexual complex. He has become such a rigid determinist that he lays down the general law that nothing happening to a child after the age of 5 can cause a psychoneurosis in later life.[5]

If Freud had said, "In neurosis we may find an abnormal vita sexualis" I would have agreed with this, and there would have been no necessity for my bringing his theories into discussion. But when a scientist of his weight and position says, "In a normal vita sexualis no neurosis is possible," and he publicly discards the traumatic theory, it leaves me no other course than to challenge the correctness of his assertions if I am to obtain a hearing for my contention that accident plays a greater part in the production of neuroses than infantile sexual tendencies. In order to find an originating cause for neuroses Freud delved into the primitive and found one in the sexual instinct.

The Most Powerful Primitive Instinct

I propose to delve down there to ascertain if there is not another instinct there, complementary to Freud's, as a cause of neurosis and I find the instinct of self-preservation to be of greater moment and of greater intensity than that of reproduction. Without it the great part of animal life would become extinct. The "sine qua non" of the instinct of self-preservation is the instinct of fear.

If there were no fear—if man had no fear of the tiger, the rabbit no fear of the dog, the sparrow no fear of the cat, the animal world in time would consist solely of the carnivora, and the carnivora would walk into the sea and get drowned. Fear is a biological necessity which Freud appears to have overlooked.

How does an animal react to danger, or fear? In one of three ways—flight, fight, or fright. All of these reactions are mainly in the instinctive and emotional level. It may be through conscious perception that fear is roused, but once aroused, conscious thought and reason take a secondary place in the reactions. The sympathetic nervous system, which is intimately associated with emotion, assumes control. In the case of flight, through the action of the sympathetic, the animal's limbs are flushed with blood, and the whole of its potential energy is focused and directed to speed. The hunted hare has only one motive—to run as it never in its life ran before. I think it must be admitted that nervous fear of company may cause blushing in a young girl without inferring sexual wishes and repressions in her infantile and unconscious life. If flight is checked or is impossible the animal may seek safety in fight; a cornered rat will turn and fight man or cat. A man, if he cannot escape by flight, may turn and fight with the fury of a Berserker. In the remaining reaction, fright, the object is to escape by concealment. The rabbit crouches down trusting the dogs will overlook him; theirs is an actual paralysis of motion and of will. We find everyday expressions indicating a similar condition in humans: "He was paralysed by fear," "struck dumb by terror," "fear rooted him to the spot," &c.

Fear the Most Frequent Cause of Neurosis

I here make an emphatic declaration. The instinct of fear is the most frequent cause of neurosis, and the sexual instinct is a much less frequent cause.

Now let us return to the case I referred to earlier. This poor woman was subjected to repeated emotional stresses due to a drunken husband, continually on the alert for danger, strained beyond endurance, when a merciful provision of Nature blotted out her pain by unconsciousness, and the primary law of self-preservation drove her onwards in blind, instinctive flight. I decline to admit Janet's theory of hysteria or Freud's theory of infantile sexualism in this case. When we contemplate the terrible strain of life in the trenches during the late war, it is marvellous that so few men broke down and, obeying the law of Nature, found refuge in unconscious and instinctive flight.

Some psychologists would have us assume that the determinants of action are to be found in the subconscious, or in the unconscious. If so, what part does conscious reason play? Man without reasoned control is a child, or is insane. The prime function of reason is to restrict feeling, imagination, desire, conduct, within moderate limits. Reason can be partially or temporarily displaced by an overwhelming wave of emotion due to external factors, and if these are of sufficient intensity no inherent nor abnormal tendencies are necessary.

I endeavour to approach my cases from the standpoint of the normal, and in any departure from this I endeavour to keep an open mind as to causation—hereditary, constitutional, acquired disease, environmental, hysteria, sexual or traumatic. A good physician makes the diagnosis fit the patient, and not the patient fit the diagnosis.

Illustrative Cases

The following cases will, I think, bear out the views I have expressed:—

CASE 1.—A lady consulted me suffering from claustrophobia (dread of enclosed places) as one of her chief symptoms. The cause of claustrophobia is most frequently the dread of being taken suddenly ill and not being able to quickly get out of the train, church, or crowd, as the case may be. This second dread is frequently due to a third phobia, the fear of heart disease, and this is the phobia that has to be traced and treated. I put this before the patient, and to my surprise she denied any fear of heart trouble; she was afraid of actual vomiting. At 6 years of age she had been terrified by seeing a lady vomiting in church, she had nightmares of this, and refused to go again to church until forced to do so. The impression partly wore away, but never quite disappeared. At 10 years of age she was crushed in a circus crowd; this aroused a fear of suffocation and death. At 12 years of age she found herself in a crowd in a railway station; she experienced the same sensations and afterwards was unable to travel in a train or cab unless accompanied by a companion, and even then she suffered great mental distress. The symptoms were disproportionate to the alleged cause, and her mother supplied the missing clue. At 2 years of age she was suffocating with (?) whooping-cough, when her mother rushed to her and putting her finger down the child's throat pulled out a piece of flesh. Evidently this must have been diphtheritic membrane. The patient could then recall her feelings at the time, and they were similar to her later ones.

The relief of mind by bringing the repressed memories up into consciousness and quietly discussing them was immediate and marked The same day she sent her husband on to a café to wait there for her whilst she made a call, the first time in her married life of 12 years that she had offered to walk alone in the street. Within a few days she was travelling long distances alone in a taxi-cab

On her next interview she asked me if a certain widely-advertised remedy would cause heart disease if taken in excess, and confessed for the first time that prior to her marriage she had drunk a bottle of this preparation in one day, and hearing a day or two afterwards that a man had died from heart failure due to an overdose of this remedy, she had ever since had a secret fear of her heart being diseased This is interesting in view of her previous denial She had suppressed it from her people, had denied it to me, and had tried to repress it from her own consciousness, probably from a feeling of shame—a clear example of a mental conflict which was not sexual I showed her an analysis of this preparation—it was simply citric acid She was cured of all her phobias and has remained so

Freudians would claim such a case as a psychoneurosis due to sexual wishes being repressed in infantile life I am convinced she had a normal vita sexualis

CASE 2 —A young man consulted me for a rather unusual phobia His work necessitated him visiting in his neighbourhood and he was seriously hampered by an unreasoned terror of a certain 300 or 400 yards of the main road He indicated the exact spots where the panic started and where it ceased, and in order to avoid this he made wide detours In addition he had agoraphobia (dread of open spaces) This part of the road had no painful associations Did it differ materially from the rest of the road ? Yes it had walls and hedges on both sides and no shops nor houses This gave the clue He could not pass down any street with blank walls on both sides he was in terror of being alone and of falling or collapsing with no one looking out of windows or doors to see him fall

He gave the history of a discharging ear from 14 years of age. From 15 to 18 he could not walk steadily , he had to have people on both sides of him Evidently he had had middle-ear disease affecting the organs of balance, the semicircular canals At 30 years of age he was frequently falling , a right mastoid operation was then performed with success, restoring his perfect balance

The originating phobia had been a natural protective instinct to keep him out of danger It had persisted in the subconscious in the form of a habit for four years after its necessity had ceased By exercises and tests I satisfied him that he was definitely cured of his former instability and giddiness, and in a short time he freed himself from his phobias

Freudians say of a phobia " It symbolises certain unconscious wishes—ultimately wishes derived from the period of infantile sexuality—and makes manifest the fear with which such wishes would be regarded by the moral self of the patient if they became conscious "[6] The cause in this case is so obvious that I do not propose even to discuss an infantile sexual origin I have known such persistence of fear follow injuries to joints and such cases may account for some of the successes of bone-setters

CASE 3 —An interesting case was that of an old man who had a most distressing phobia of the slightest draught or current of air If he passed an open shed on the dock road and felt the least wind he became ill and was compelled to go home to bed If anyone passed him in a room it caused him to have hot flushes and " creepy tinglings " down his legs He had suffered from this for 17 months his people had lost patience with him, and he came to ask me if he was becoming insane

I obtained the following history One night on arriving home his people were out , he made himself a meal and then fell asleep in front of the fire Influenza was raging at the time and he was afraid of it He was awakened by a shivering fit and thought he had caught it During the following week he had three more shivering fits in the night time, and from then suffered from the phobia described A little further inquiry elicited the cause of the first rigor a cause he had never taken into account It was a cold night and the fire had gone out ! We must not look upon this as foolish that would be a hasty and superficial attitude. The old man was not fully awake when panic seized him and panic displaces reason

I did not spend months or years unearthing or imagining an infantile sexual conflict in this case—as a matter of fact I never mentioned sex to him I treated him by quiet discussion on 11 occasions, with light hypnosis to calm his nervous system, and he made a complete recovery On his later visits he vigorously fanned himself with a newspaper to reaccustom himself to draughts

CASE 4 —A lady was sent to me from an eye and ear infirmary as suffering from functional giddiness No organic disease was discoverable The fear of falling was so persistent she was afraid to go out alone. She improved under suggestion, but rather slowly, so I resorted to mental analysis Using Jung's word association tests I found an intense fear of water Water such as a park lake fascinated her, although she was horribly afraid of it She had no suicidal tendencies She strenuously denied being worried over some near friend or relative having to go to sea The reactions indicating this were very marked, and on my insisting she ultimately admitted that her husband frequently had to cross to Ireland, and on these occasions she sat up all night and could not sleep Her previous denial was an attempt to suppress an unbearable thought from her field of consciousness and to avoid discussing it with me

I obtained the following history from her, which she had apparently forgotten, and which she had never told her husband nor friends Suppression again, due probably to the painful nature of the memories At 10 years of age she was sent to live with her grandmother She was very unhappy there, so much so she told her parents she would drown herself in the well if they did not take her away She distinctly remembers really meaning to do so

At 17 years of age she was sitting on a camp stool on the beach at a seaside resort A passenger steamer, instead of slacking speed, came in at full speed and collided with the pier A huge wave from the backwash of the steamer surged up the beach The other people at the edge of the water ran for safety but she was paralysed with fright, and the wave washed her out into deep water She was only rescued from drowning at the last moment

The unearthing of these painful suppressed memories was immediately followed by a disappearance of all her symptoms I never broached the sexual question

CASE 5 —An engineer's labourer consulted me for rigidity of his spine He was unable to bend forwards and could not climb stairs owing to " tightness " of his legs He suffered very little pain On examination there was no marked tenderness of the spine, rotation was normal, flexion very much restricted Knee-jerks increased, no incoördination. Evidently a case of hysterical spine

The history was as follows Eight years previously an iron plate weighing 14 tons was swinging from a crane when the chain broke and the plate falling on his right arm crushed it, disabling him for six months At the end of that period he returned to light work, and for 7½ years he had been on light work through inability to bend his spine He was not malingering , there was no question of lawsuits or compensation in the matter He had been a saving man He had travelled a good distance stayed in Liverpool eight weeks, and paid my fees out of his own pocket in his anxiety to be cured

His back had not been injured and he was not shamming ; what, then was the most likely cause of his disablement ? Elsewhere[7] I have quoted several similar cases in which the cause proved to be suppressed fear It was the same with this patient , the cause was fear kept up by the instinct of self-preservation Some part of his mind outside the region of conscious awareness had formulated the idea that if he could not bend his back he would not again be exposed to such a danger It was a purely instinctive protective reaction Some confirmatory evidence of this is that bending was alone affected rotation of his spine and twisting of his body was normal Rigidity of the spine was merely a symptom, and to treat the symptom only by suggestion or any other method, would have been useless, as the originating fear would have found expression in some other symptom

The radical cure was to explain the cause to the patient to point out the intensity of the fear, and the advisability of removing the fear by ceasing to work under such risks in a shipbuilding yard He saw the logic of this advice and said he would take a proffered partnership in a motor business The result was most satisfactory , in a few weeks he could lace his boots, bend and lift weights quite normally, and was fit for full work under less risky conditions

Freudians would call this a psychoneurosis, a conversion hysteria Mitchell says—

" We have seen how, as a result of deprivation and regression of the libido earlier erotic activities of childhood are revived, by way of unconscious phantasies and come into conflict with the ego tendencies of the patient As a result of this conflict a compromise is effected and the repressing forces, as well as the unconscious wish pertaining to the phantasy, achieve some sort of satisfaction in the hysterical symptom which emerges The symptom is not, indeed, recognised by the patient as any form of satisfaction but rather as suffering and it is through the latter quality that the repressing forces are gratified—the symptom is an expression of the disapproval with which the personality meets the re-awakened infantile wishes."[8]

My object is not to criticise Freud's theories except where they clash with mine I leave the reader to judge which of the two theories comes nearer to the truth in this case

Summary.

In conclusion, as against Freud's dogmatic determinism, I advance my theories as to the causation of the great majority of neuroses 1 The unbearable idea or wish arises in consciousness and not in the unconscious nor in the infantile sexual 2 The unbearable idea is not repressed into the unconscious by an intra-psychic censor It is deliberately suppressed by conscious effort into the subconscious—into present unawareness—not deeper 3 When the complex is laid bare it is evident that the patient must have been aware of it at some period, if not throughout 4 The causes are therefore to be sought for in adult life, or in youth, rarely in childhood, and only exceptionally if ever, in infantile sexuality 5 The majority of neuroses are founded on moral or physical fear 6 The fear may be an instinctive protective reaction 7 The fears are frequently due to external causes (chance) and may be described as psychic traumas or mental accidents

References—1 Freud Prof S Selected Papers on Hysteria, p 187 2 Ibid, p 156 3 Ibid, p 189 4 Ibid, p 188 5 Jones, Ernest Papers on Psycho-Analysis, p 393 6 Mitchell, T W Psychology of Medicine, p 129 7 Davis, A E Hypnotism and Treatment by Suggestion 8 Mitchell, T W Psychology of Medicine, p 127

TORSION OF THE GALL-BLADDER

By G P B HUDDY, M S Lond F R C S Eng,
SURGEON, DUDLEY ROAD HOSPITAL, BIRMINGHAM

Torsion of the gall-bladder is a rare condition Irwin[1] in recording a case in the *British Journal of Surgery* in 1921 stated that as far as he could trace, his was the eighth recorded example In 1922 in the same journal Lett[2] drew attention to a case which he had recorded in The Lancet in 1909[3] and which had been overlooked Since Irwin's case others have been recorded by Frankau,[4] Jonas,[5] and Fifield[6] The following would appear to be the thirteenth case The fact that five have been recorded in comparatively recent years suggests that the rarity of the condition has been exaggerated

There are two important factors which predispose to torsion of the gall-bladder

1 *The Presence of a Mesentery*—This of itself is sufficient to permit of torsion of the gall-bladder, as in the case recorded by Frankau, in which the torsion had occurred on a mesentery which had a narrow gall-bladder attachment

2 *The Length of the Cystic Duct*—According to Brewer[7] the cystic duct varies in length from ½ to 2½ inches and Walton[8] states that it is normally about 1½ inches long If there is a long cystic duct together with a mesentery the gall-bladder may hang almost free from the liver edge Such a combination of factors increases the liability to torsion In the example recorded by Wendel[9] the duct was 3¼ inches in length

Report of Case

A woman aged 71, was admitted on Dec 30th, 1925, with an illness of 50 hours' duration The onset was sudden While sitting down she felt very ill and faint this was followed one hour later by the onset of pain which commenced in the epigastrium and radiated to the right abdomen, where it settled It was severe in character and "went through to the back" There had been no vomiting The bowels were open and there were no urinary symptoms

No history was elicited of any previous attacks of the same kind, but for 17 years she had suffered from "bilious attacks" which came on at monthly intervals and consisted of pain, beginning an hour after food, rising into the chest, and relieved by vomiting There was also a history of flatulence

On examination the temperature was 98° F and the pulse-rate 108 There was marked tenderness and rigidity of the right abdomen at the umbilical level A few days later a definite rounded lump was palpable at this same site, the swelling being dull on percussion and not appearing to move on respiration

With the history of epigastric pain radiating to the right abdomen and the presence of a swelling, a diagnosis of appendix abscess was made and, since the "abscess" was not resolving operation was decided upon, although the patient was old and her general condition poor

Operation was performed under general anæsthesia The abdomen was opened through a vertical incision and the rectus muscle was not retracted There was a well-shut-off lymph covered cavity containing a rounded swelling which proved to be a gall-bladder that had made one turn on its neck in an anti-clockwise direction The gall-bladder was removed with great ease as there was a narrow mesentery in the region of the neck and the gall-bladder was hanging from the liver edge As there was no raw area on the liver the abdomen was closed without drainage On examination the gall-bladder was congested but there were no stones The wound healed soundly

The case illustrates the main features of this rare condition—viz . (1) The failure of pre-operative diagnosis (2) The sex—all females (3) The condition arises particularly in people of advanced years, the two exceptions being those patients, aged 23 and 34 respectively, seen by Wendel and Irwin (4) The sudden onset (5) There is always a history of right-sided pain This may be associated with epigastric or general abdominal pain, as in the above case and those of Irwin, Frankau and Jonas Occasionally the pain may radiate to the back. (6) A swelling, either rounded or sausage-shaped, is usually present but in the early stages it may be masked by rigidity as in my case or it may be hidden by the liver Frankau s case affords such an example Whether it is mobile or not depends upon the extent of the adhesions A very interesting example is afforded by Wendel's case in whom in November, 1895, a cystic swelling was discovered which varied in position, and which in October, 1896, was found to be fixed (7) The operation is usually an easy one on account of the mobility of the gall-bladder and the length of the cystic duct, and so the prognosis is good except in so far as the patients are elderly (8) There may be a previous history of "bilious attacks" (9) Associated abnormalities may be present Wendel recorded a floating kidney, and in my case there were cysts in the liver An atypical feature of my case is the absence of vomiting, which is usually frequent or even incessant

References

1 Irwin, S T Brit Jour Surg, 1921, ix, 310
2 Lott, H Ibid 1922 ix, 464
3 Lett, H The Lancet, 1909, i 1099
4 Frankau C H S Brit Jour Surg, 1922, x, 301
5 Jonas H C Brit Med Jour, 1923, i, 1016
6 Fifield, L R Ibid, 1925, i, 920
7 Brewer, G E Ann of Surg, 1899, xxix, 721
8 Walton A J The Surgical Dyspepsias, London, 1923, p 452
9 Wendel, A V Ann of Surg, 1898, xxvii 119
See also Moynihan Sir B G A, and Upcott Medical Journal, Bristol, 1913, p 127

St Bartholomew's Hospital War Memorial—On July 8th the Prince of Wales unveiled the memorial to students of St Bartholomew's Hospital who fell during the war It takes the form of a new arched court leading from the Henry VIII gateway to the hospital square There are four panels bearing the names of 113 students, and around the court runs the inscription, "These gave their lives for King and Country, counting not the cost in defence of right" The Army, Navy, and Air Force Medical Services were represented at the ceremony by their directors and the City of London by the Lord Mayor and Sheriffs A short service was conducted by the Chaplain-General to the Forces, Dr A C E Jarvis, and a volume containing the names recorded in the memorial was presented to the Prince by Sir Anthony Bowlby

Clinical and Laboratory Notes.

SOME CASES OF LONG-STANDING DRUG ADDICTION

By STANFORD PARK, M.B , CH.B EDIN ,
RESIDENT MEDICAL SUPERINTENDENT BAY MOUNT, PAIGNTON, HOME FOR ALCOHOLISM, DRUG HABITS, AND NEURASTHENIA.

PHYSICIANS specialising in the treatment of drug cases felt considerable apprehension after the passing of the Dangerous Drugs Act, when elderly drug addicts of many years' standing began to seek their advise and present themselves for treatment Many of these patients were pathetic objects and when, eventually, their treatment was undertaken, it was always with the expectation of an anxious time

On one occasion a patient, aged 71, with an addiction of 30 gr of morphine daily for 40 years, presented himself for treatment He had put his affairs in order, had made his will, firmly expected to die under treatment and " leave his bones amongst us," as he expressed it, whereas, in reality, he left here after a few months to get married ! This is a specimen case, but consideration of a series of these cases demonstrates that these chronic subjects can be cured with less trouble and suffering than patients of half their age and with only a few years of addiction The cases also prove—a fact not always recognised—that a man can carry on his life's work and at the same time take considerable doses of morphine What is more remarkable still they prove that a man may hide his failing from his nearest relations and friends—even his wife

The three examples which follow are typical of the elderly cases which the Dangerous Drugs Act has caused to come for treatment

CASE 1 —This was a professional man, 65 years of age. In his younger days he had achieved some degree of success, and all his life he had been a keen sportsman, fond of shooting fishing, and hunting He had first taken morphine 35 years before to relieve the pain of a hunting injury, and except for a few periods after treatment he had continued the habit taking from 5 to 20 gr at various periods On admission he was taking from 8 to 10 gr daily He had also taken alcohol to excess off and on all his life When this patient arrived for treatment he had been without his drug for 20 hours and was in a state of collapse He was put on a graduated dose of morphine and soon recovered from the collapse He then underwent the usual course of treatment His appetite was poor and he felt the characteristic withdrawal weakness considerably, but he only stayed in bed two whole days at the time of complete withdrawal He had chronic bronchitis and this and the cough and expectoration bothered him at night

He soon began to recover and within a fortnight of withdrawal he went with his male nurse eight miles by car and fished in the River Dart for several hours When he left he was active and cheerful and looked quite ten years younger than on admission

CASE 2 —A retired clergyman, aged 74 years, who had been taking morphine continuously for over 40 years It had been given to him first for neuritis in his feet, and he had continued to take it without any intermission He had carried on his work as a clergyman all this time and had been rector of his parish for many years Neither his wife nor anyone else had had the slightest suspicion of his habit His average daily dose appeared to be about 7 gr The patient was practically an abstainer and the question of alcohol did not enter into the case This patient preferred to stay in his room generally in bed during the withdrawal period, and he complained very little of anything and showed no marked symptoms until at the point of complete withdrawal he complained of pains in his feet and he said they were the same kind of pains as those for which he had been given morphine 40 years previously Various remedies were tried and after about a week the pains subsided and did not return This patient suffered a good deal from nasal catarrh but otherwise was remarkably well He gradually regained strength and at the end of 12 weeks was driving his car

CASE 3 —This was a professional man 71 years of age and still carrying on his profession who had taken morphine for 40 years He first took it to try its effects after observing the comfort it gave to one of his patients He had taken it without any break for over 40 years His average daily dose was 30 gr , taken in two doses of about 15 gr each, morning and evening In addition to this since the death of his wife some years ago, he had taken a bottle of whisky daily In this case also neither his wife nor his friends suspected the habit On admission he was in fairly good health, but his blood pressure was 220, and his pulse at times intermittent He also had a large umbilical hernia caused by straining due to constipation. As is my practice in cases of double addiction the alcohol was first of all reduced and gradually discontinued and then the morphine was also gradually reduced to 2 gr daily without any unpleasant symptoms Then one morning, about 1 A.M., he had a heart attack and his pulse became very irregular and fluttering, and he was very nervous and frightened But after an injection of morphine his heart calmed down and he was asleep in 20 minutes and had no return of the cardiac irregularity during his stay. At the actual withdrawal stage he felt disinclined for exertion and stayed in bed for three days, but he had no withdrawal symptoms except the feeling of weakness and some burning sensations in his intestines Five days after withdrawal he was told he had not had any morphine for five days, and from then onwards he progressed steadily and showed much mental exaltation and lightness of spirits He delighted in his " freedom from bondage," as he expressed it, and was most grateful to everyone concerned. He left here after a 12-weeks' stay and he looked and said he felt 15 years younger than when he came His blood pressure had fallen to 180 and his heart gave him no trouble He has since written me that he has continued to get stronger and the last news of him was that he had married again

Compared with younger patients, these old men did remarkably well, and their suffering was slight

There is another aspect of this question which may not have received sufficient consideration from the authorities, if it has had any at all. and that is the effect of treatment on these old patients' moral and emotional natures After a man has lived in an artificial world of his own making for 30 or 40 years, with all his senses dulled, there are bound to be unexpected and even undesirable manifestations when at last he emerges from his tomb and his whole nervous system is alert and hypersensitive to every impression and stimulus The conduct of all three of these patients was such as to give grounds for anxiety for they might easily be involved in legal proceedings

OBSERVATIONS ON A CASE OF ACHOLURIC ICTERUS

By GEOFFREY HADFIELD M D , M R C P LOND ,
AND
T F. HEWER
(*From the Pathological Department General Hospital, Bristol*)

Prof Barcroft's address on the functions of the spleen, published in a recent number of THE LANCET, prompts us to submit the following account of a case of acholuric icterus in which the blood of the splenic vein was examined immediately after splenectomy

The patient, a man of 29, was known to have an enlarged spleen at the age of 12 When seen at the age of 26 the spleen reached to the level of the umbilicus he was jaundiced but bile pigment was absent from the urine The blood showed a leucocytosis of 18,800, accounted for by an absolute increase in lymphocytes There was an excess of urobilin in the urine and of bilirubin in the blood plasma Since then he has been troubled with epigastric pain and considerable drowsiness and states that his jaundice, though liable to considerable fluctuation in intensity, is increasing slightly No family history of jaundice or splenomegaly was obtained. An examination made a few days before splenectomy showed —Blood Red cells, 4 352,000 per c mm. Hæmoglobin, 75 per cent. , C I , 0 86 White cells, 19,700 , increase due to lymphocytosis Moderate micro-anisocytosis and slight polychromatophilia of red cells Blood fragility. Maximum resistance, 0 6 per cent , minimum resistance, 0 44 per cent. Van den Bergh reaction Positive, indirect ½ unit Blood spectrum normal. No serum auto agglutinins found Lævulose tolerance test normal Urine moderate excess of urobilin, no unaltered bile pigment After splenectomy the blood aspirated from the splenic vein showed maximum resistance 0 75 per cent minimum resistance 0 45 per cent Van den Bergh reaction positive, indirect, 2 units.

The spleen weighed 1 lb 7 oz, was 7¾ in in length, and histologically showed the usual reticulo-endothelial proliferation, engorged sinuses, and red cell phagocytosis

Orahovats has demonstrated that, in a normal animal, the red cells of the blood in the spleen pulp are more vulnerable to the lytic action of hypotonic saline and less vulnerable to that of saponin than are the red cells in the general circulation This result was obtained in the blood leaving by the vein after ligature of the splenic artery and stimulation of the splenic nerve By this manœuvre red cells were obtained direct from the spleen pulp, cells merely passing through the organ and escaping, its "filter-bed" being eliminated Prof Barcroft inclines to the view that this increased fragility is not acquired during the sojourn of the cells in the spleen pulp, but that cells which are fragile from some unknown physiological cause are retained by the spleen acting as a differential filter

In the case we report, the cells of the blood aspirated from the splenic vein were more fragile than the abnormally fragile cells of the general circulation It is not unlikely that the blood we obtained came from the spleen pulp, for ligature of the pedicle would probably be sufficient stimulus to the splenic nerve, and the delay between ligature and removal would allow sufficient time, for the splenic sinuses to deplete themselves It is obvious that such a result as we obtained in a diseased organ might very easily have been misconstrued if the fundamental physiological facts regarding normal fragility had not been available

---

ACUTE INTUSSUSCEPTION IN AN ADULT

By F W WIDGERY, F R C S ENG,
SENIOR RESIDENT MEDICAL OFFICER, BRISTOL GENERAL HOSPITAL

THE case below is thought worthy of record because of the unusual occurrence of the acute condition in the adult Furthermore, it illustrates the extraordinary power possessed by some individuals of recovery from the moribund state

Mrs D, aged 43, was admitted to the Bristol General Hospital at 10 30 P M on March 13th, 1926, with a history of four days' severe and continuous abdominal pain and vomiting, of sudden onset Her previous history was of no account

The condition on admission was as follows Her expression was anxious, she vomited small quantities of brown fluid frequently and was in great pain The tongue was dry and furred The abdomen was flat, the pain being most severe in the region of the umbilicus There was no rigidity Palpation, however, revealed forcible contraction of the intestine, accompanied by borborygmi, although no visible peristalsis was present Temperature, pulse, and respiration normal

I made a diagnosis of acute small intestine obstruction of unknown origin I opened the abdomen about one hour after admission Some coils of rather distended small intestine first appeared A movable lump was felt about 2 inches below the umbilicus When drawn into the wound it proved to be an ileo-ileal intussusception The mass was easily reduced, but a considerable length of gut was obviously gangrenous owing to thrombosis of the mesenteric vessels It was found necessary to resect 5 feet of the ileum and to do an end-to-end anastomosis

For 48 hours after the operation the patient's condition was desperate, the pulse being quite uncountable and only just perceptible Two intravenous saline injections of 2 pints each were given Eserin and turpentine enemata were begun immediately and continued four-hourly The colour of the vomiting changed from brown to biliary, the bowels began to act, and the patient's condition gradually improved

Convalescence was complicated by a troublesome *Bacillus coli* infection of the wound together with thrombosis of the left internal saphenous vein She was discharged on April 24th The bowels were then acting regularly and have done so up to June 28th The wound is now healed and the swelling of the leg has subsided The interior of the apex of the intussusception showed a gangrenous, adenomatous polyp, about the size of a cherry

I am indebted to Mr J Lacy Firth, into whose ward the patient was admitted, for permission to publish this case

Medical Societies.

PATHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

A MEETING of this Society was held in Marischal College, Aberdeen, on July 9th and 10th, Prof T SHENNAN and J CRUICKSHANK in the chair

T DALLING (London) said that lamb dysentery could be produced by feeding lambs with cultures of *coli* from infected animals plus cultures of *Cl Welchii* or with larger doses of *welchii* alone In large scale field experiments, mostly in the border counties, very satisfactory protection was obtained (*a*) by immunising the pregnant ewes with *coli* vaccine along with *welchii* toxin-antitoxin mixtures, or (*b*) by dosing new-born lambs with *coli* and *welchii* antisera —J W McLEOD (Leeds) described an anaerobic bacillus similar to Pfeiffer's organism obtained from blood and cerebro-spinal fluid which produced amounts of hydrogen peroxide demonstrable by the usual cadmium-iodide starch and titanium reagents —C H BROWNING, J B COHEN, S ELLINGWORTH, and R GUBRANSEN (Glasgow and Leeds) gave an account of the trypanocidal activity of a new series of aminostyryl and aminoanil quinoline compounds Though unsuitable for intravenous injection they gave remarkable curative results with *T brucei* in the acute disease in mice and the chronic infection in rabbits They have much less effect in vitro —A E BOYCOTT and C PRICE-JONES (London) found that Gaertner's bacillus fed to rats in adequate doses penetrated to the spleen in all cases in two or three days and was then slowly got rid of, only about 15 per cent of animals remaining infected after two months The majority of animals develop agglutinins *B pyocyaneus* and *B typhosus* fail to get a lodgment in the spleen when fed in the same way —J A ARKWRIGHT (London) showed that vaccines made from the smooth form of paratyphoid A were more efficient than those prepared from the rough variety.—J C KERRIN and J CRUICKSHANK (Aberdeen) described four small epidemics of dysentery in Aberdeen, mostly in children, due to Sonne's dysentery bacillus which appears to be identical with *B coli anaerogenes* —C H WHITTLE (Cambridge) had found the inulin fermentation of pneumococci an unreliable character —J GORDON (Leeds) improves media for the growth of the gonococcus by the addition of taurine —P HARTLEY (London) noted that when nearly neutral mixtures of diphtheria toxin and antitoxin are made in the manner of Ramon the precipitates produced are very small in bulk, contain about 0 5 per cent of the original nitrogen, and are mostly composed of magnesium hydrogen phosphate, the actual antigen cannot constitute more than 10 per cent of the whole precipitate and must be present in a high state of purity Its antigenic value is preserved if it is diluted for injection with saline, but considerably deteriorated if broth meat extracts or carbolic are used —R A O'BRIEN (London) pointed out that the minute amount of toxin in a Schick test injection can act as an immunising antigen in animals and children —J McINTOSH and S L. BAKER (London) had obtained very variable results in experiments on the filterability of the Rous tumour Passage seemed to raise the infectivity considerably but differences in the physical condition of the tumour and in the viscosity of the extracts made differences which could not be controlled Digesting with acid trypsin gave a more active filtrate —A LEITCH (London) had also had much difficulty in transferring "mouse sarcoma 37" by cell-free filtrates Drying killed the tumour —T J MACKIE and E N McDERMOTT (Edinburgh) described the spirillum they had obtained from a case of rat-bite fever, in the rat the organism passes in the tears to the nose and mouth and is so inoculated by the teeth —J O W BARRATT (London), from an analysis of the mode of action of hirudin, concluded that it acted on thrombin

—F EARLAM and E E GLYNN (Liverpool) pointed out that the maximum incidence of post-operative pulmonary thrombosis was about the tenth day and they had found that the blood platelets begin to increase directly after an operation and reach their maximum at the same time, the coagulation time is diminished proportionately to the increase in platelets —K EDGECOMBE and E E GLYNN (Liverpool) said that in blood transfusion the effect of the recipient's serum on the donor's cells was not the only test of importance, some donors might have such a high agglutinating titre that their serum, even when diluted in the blood of the recipient, might agglutinate his cells The only safe procedure was to cross-agglutinate the cells and serum of the recipient and the proposed donor —J MARNOCH and T SHENNAN (Aberdeen) discussed thrombo-angeitis obliterans —A LYALL (Aberdeen) dealt with the protein ratio in relation to the acidosis of diabetes —J S DUNN and C J POLSON (Manchester) in experiments on uric acid nephritis found that very large doses of urate intravenously were excreted in the kidneys, passed down the tubules, and then by concentration and acidification was precipitated in the ascending limb of Henle's loop where they caused necrosis of the epithelium The urea retention observed is due to urea leaking back from the glomerular filtrate through the damaged epithelium No chronic results were obtained by the repeated exhibition of smaller doses —G S WILLIAMSON and I H PEARSE (London) urged that the "intercellular channels" between the epithelial cells of the thyroid alveoli were cells joining their microcapillary system to the general reticulo-endothelial apparatus of the organ —G LENTHAL CHEATLE (London) demonstrated the various forms and modes of origin of the extra- and intra-elastica fibro-adenomata of the breast He also showed how acquired adhesions in bursæ arose by the organisation of strands of lymph —A W DOWNIE and J CRUICKSHANK (Aberdeen) had planted stones, lead shot, gall-stones, glass beats, &c, in the gall-bladders of guinea-pigs and had failed to convince themselves that the epithelial growth which was obtained in some instances was malignant in nature —D LEITCH exhibited some of his own specimens and reaffirmed his conviction that they demonstrated cancer —J MARNOCH (Aberdeen) showed a leiomyoma of the stomach from a man of 57 with a five years' history of intermittent vomiting and hæmorrhage from an ulcer on the mucosal surface —E F FINCH and H H GLEAVE (Sheffield) described a case of osteoclastoma (myeloid sarcoma) of the femur with a known history of eight years, after the leg was finally amputated recurrence occurred in the stump and the patient died with pulmonary metastases of the typical histological structure —M J STEWART (Leeds), from an analysis of stomach material removed at operation in some 300 patients, concluded that about 9 per cent of chronic gastric ulcers show cancer and that about 10 per cent of cancers show old ulceration The most important criterion of chronic ulceration is destruction of the muscular coat Misplaced epithelium and heterotopias have misled many observers into unjustified diagnoses of cancer —J S YOUNG and S V TELFER (Glasgow) described a case of renal calculus with epithelioma infiltrating into the kidney —T SHENNAN (Aberdeen) discussed a series of tumours of lung and mediastinum and laid stress on the difficulty of distinguishing between the sarcomata and carcinomata —S McDONALD (Newcastle) showed how it was possible to make a histological diagnosis of pneumonia in a body exhumed many weeks after burial —N D BALL (London) showed an epithelial tumour growing on the spleen of a rabbit which looked like appendix tissue —J P McGOWAN (Aberdeen) various conditions of comparative blood pathology, H J PARISH (London) coccal forms of the diphtheria bacillus, S C DYKE (Wolverhampton) a bony tumour of the breast, D F CAPPELL (Glasgow) a dissecting aneurysm of the aorta, a retroperitoneal ganglionic neuroma and partial necrosis of liver with tumour formation, J M BEATTIE (Liverpool) specimens of experimental foot-and-mouth disease; E E GLYNN (Liverpool) a case of ? sprue and some exceptionally large biliary tuberculous abscesses, T SHENNAN (Aberdeen) various pathological specimens and some useful post-mortem instruments, methods of storing slides, dehydrating alcohol, &c, and C H. USHER (Glasgow) some eye preparations

---

ROYAL SOCIETY OF MEDICINE.

SECTION OF ANÆSTHETICS

THE first of two morning sessions of this section, which have been arranged as a welcome to visitors from the United States and Canada, was held on July 13th. Dr F E SHIPWAY, President of the Section, took the chair

The PRESIDENT, in welcoming the Transatlantic visitors, alluded to the various discoveries made in the domain of anæsthetics by workers in the States

The Physiology of Respiration in Relation to Anæsthesia

Prof J S HALDANE read a paper on Some Bearings of the Physiology of Respiration on the Administration of Anæsthetics The anæsthetic administered, he said, acted on the whole central nervous system, and modified the mechanism of various physiological processes, unless these effects were controlled they might be harmful, even dangerous When the anæsthetic was pushed, the lips were apt to lose their bright red colour and to become bluish, though there was no cessation, nor even marked diminution, of breathing. This change of colour indicated that the blood was not being fully oxygenated in the lungs Another symptom of defective oxygenation was Cheyne-Stokes breathing Anomalous effects could be explained by assuming that the oxygen percentages in the different alveoli varied considerably, as alveoli with oxygen content considerably lower than normal might be unable to saturate the blood beyond a lower degree than normal, and the depth of breathing became much diminished But the irregular distribution of air in the alveoli did not interfere with the amount of CO_2 in the mixed arterial blood When in the alveolar air 14 per cent of oxygen was present, the blood was nearly saturated—i e, it reached 97 per cent of saturation If for any reason breathing became shallower, even if it were of increased frequency, symptoms of want of oxygen were produced, the shallow breathing having merely accentuated the differences existing owing to variations in different alveoli Prof Haldane described various experiments made on himself While lying in bed he was able, he said, regularly to cause Cheyne-Stokes breathing by raising his breathing rate from 7 to 20 per minute

When pushed to full anæsthesia anæsthetics caused diminution in the vigour of the patient's responses to respiratory stimuli and so there was diminished oxygenation of the blood It was apt to be concluded that the continuance of breathing during anæsthesia showed that there was no sign of stoppage, and blueness of lips was likely to be attributed to defective heart rather than to the defective breathing, which caused it The importance of maintaining the normal degree of oxygenation of the arterial blood was generally not fully grasped, if it was kept appreciably below normal in the ordinary person, headaches and general depression gradually asserted themselves and persisted long after exposure to oxygen-lack had ended This he considered, caused some damage—not necessarily gross—of the central nervous system, some alteration in its molecular structure Yet there might be no evident danger actually during anæsthesia, the effects being manifest after anæsthesia was over An easy way to avoid them was by adding a small amount of CO_2 to the inspired air, as that was a natural stimulant to breathing A good method was

The spleen weighed 1 lb 7 oz , was 7¾ in in length, and histologically showed the usual reticulo-endothelial proliferation, engorged sinuses, and red cell phagocytosis

Orahovats has demonstrated that, in a normal animal, the red cells of the blood in the spleen pulp are more vulnerable to the lytic action of hypotonic saline and less vulnerable to that of saponin than are the red cells in the general circulation This result was obtained in the blood leaving by the vein after ligature of the splenic artery and stimulation of the splenic nerve By this manœuvre red cells were obtained direct from the spleen pulp, cells merely passing through the organ and escaping, its " filter-bed " being eliminated Prof Barcroft inclines to the view that this increased fragility is not acquired during the sojourn of the cells in the spleen pulp, but that cells which are fragile from some unknown physiological cause are retained by the spleen acting as a differential filter

In the case we report, the cells of the blood aspirated from the splenic vein were more fragile than the abnormally fragile cells of the general circulation It is not unlikely that the blood we obtained came from the spleen pulp, for ligature of the pedicle would probably be sufficient stimulus to the splenic nerve, and the delay between ligature and removal would allow sufficient time, for the splenic sinuses to deplete themselves It is obvious that such a result as we obtained in a diseased organ might very easily have been misconstrued if the fundamental physiological facts regarding normal fragility had not been available

ACUTE INTUSSUSCEPTION IN AN ADULT

By F W Widgery, F R C S Eng ,

SENIOR RESIDENT MEDICAL OFFICER, BRISTOL GENERAL HOSPITAL.

The case below is thought worthy of record because of the unusual occurrence of the acute condition in the adult Furthermore, it illustrates the extraordinary power possessed by some individuals of recovery from the moribund state

Mrs D , aged 43, was admitted to the Bristol General Hospital at 10 30 P M on March 13th, 1926, with a history of four days' severe and continuous abdominal pain and vomiting, of sudden onset Her previous history was of no account

The condition on admission was as follows Her expression was anxious , she vomited small quantities of brown fluid frequently and was in great pain The tongue was dry and furred The abdomen was flat, the pain being most severe in the region of the umbilicus There was no rigidity Palpation, however, revealed forcible contraction of the intestine, accompanied by borborygmi, although no visible peristalsis was present Temperature, pulse, and respiration normal

I made a diagnosis of acute small intestine obstruction of unknown origin I opened the abdomen about one hour after admission Some coils of rather distended small intestine first appeared A movable lump was felt about 2 inches below the umbilicus When drawn into the wound it proved to be an ileo-ileal intussusception The mass was easily reduced, but a considerable length of gut was obviously gangrenous owing to thrombosis of the mesenteric vessels It was found necessary to resect 5 feet of the ileum and to do an end-to-end anastomosis

For 48 hours after the operation the patient's condition was desperate, the pulse being quite uncountable and only just perceptible Two intravenous saline injections of 2 pints each were given Eserin and turpentine enemata were begun immediately and continued four-hourly The colour of the vomiting changed from brown to biliary, the bowels began to act, and the patient's condition gradually improved

Convalescence was complicated by a troublesome *Bacillus coli* infection of the wound together with thrombosis of the left internal saphenous vein She was discharged on April 24th The bowels were then acting regularly and have done so up to June 28th The wound is now healed and the swelling of the leg has subsided The interior of the apex of the intussusception showed a gangrenous, adenomatous polyp, about the size of a cherry

I am indebted to Mr J Lacy Firth, into whose ward the patient was admitted, for permission to publish this case

Medical Societies.

PATHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

A meeting of this Society was held in Marischal College, Aberdeen, on July 9th and 10th, Prof. T Shennan and J Cruickshank in the chair

T Dalling (London) said that lamb dysentery could be produced by feeding lambs with cultures of *coli* from infected animals plus cultures of *Cl Welchii* or with larger doses of *welchii* alone In large scale field experiments, mostly in the border counties, very satisfactory protection was obtained (*a*) by immunising the pregnant ewes with *coli* vaccine along with *welchii* toxin-antitoxin mixtures, or (*b*) by dosing new-born lambs with *coli* and *welchii* antisera —J W McLeod (Leeds) described an anaerobic bacillus similar to Pfeiffer's organism obtained from blood and cerebro spinal fluid which produced amounts of hydrogen peroxide demonstrable by the usual cadmium-iodide starch and titanium reagents —C H Browning, J B Cohen, S Ellingworth, and R Gubransen (Glasgow and Leeds) gave an account of the trypanocidal activity of a new series of aminostyryl and aminoanil quinoline compounds Though unsuitable for intravenous injection they gave remarkable curative results with *T brucei* in the acute disease in mice and the chronic infection in rabbits They have much less effect in vitro —A. E Boycott and C Price Jones (London) found that Gaertner's bacillus fed to rats in adequate doses penetrated to the spleen in all cases in two or three days and was then slowly got rid of, only about 15 per cent of animals remaining infected after two months The majority of animals develop agglutinins *B pyocyaneus* and *B typhosus* fail to get a lodgment in the spleen when fed in the same way —J A Arkwright (London) showed that vaccines made from the smooth form of paratyphoid A were more efficient than those prepared from the rough variety —J C Kerrin and J Cruickshank (Aberdeen) described four small epidemics of dysentery in Aberdeen, mostly in children, due to Sonne's dysentery bacillus which appears to be identical with *B coli anaerogenes* —C H Whittle (Cambridge) had found the inulin fermentation of pneumococci an unreliable character —J Gordon (Leeds) improves media for the growth of the gonococcus by the addition of taurine —P Hartley (London) noted that when nearly neutral mixtures of diphtheria toxin and antitoxin are made in the manner of Ramon the precipitates produced are very small in bulk, contain about 0 5 per cent of the original nitrogen, and are mostly composed of magnesium hydrogen phosphate , the actual antigen cannot constitute more than 10 per cent of the whole precipitate and must be present in a high state of purity Its antigenic value is preserved if it is diluted for injection with saline, but considerably deteriorated if broth meat extracts or carbolic are used —R A O'Brien (London) pointed out that the minute amount of toxin in a Schick test injection can act as an immunising antigen in animals and children —J McIntosh and S L. Baker (London) had obtained very variable results in experiments on the filterability of the Rous tumour Passage seemed to raise the infectivity considerably but differences in the physical condition of the tumour and in the viscosity of the extracts made differences which could not be controlled Digesting with acid trypsin gave a more active filtrate —A Leitch (London) had also had much difficulty in transferring " mouse sarcoma 37 " by cell-free filtrates Drying killed the tumour —T J Mackie and E N McDermott (Edinburgh) described the spirillum they had obtained from a case of rat-bite fever , in the rat the organism passes in the tears to the nose and mouth and is so inoculated by the teeth —J O W Barratt (London), from an analysis of the mode of action of hirudin, concluded that it acted on thrombin

—F. Earlam and E E Glynn (Liverpool) pointed out that the maximum incidence of post-operative pulmonary thrombosis was about the tenth day and they had found that the blood platelets begin to increase directly after an operation and reach their maximum at the same time; the coagulation time is diminished proportionately to the increase in platelets —K Edgecombe and E E Glynn (Liverpool) said that in blood transfusion the effect of the recipient's serum on the donor s cells was not the only test of importance, some donors might have such a high agglutinating titre that their serum, even when diluted in the blood of the recipient, might agglutinate his cells The only safe procedure was to cross-agglutinate the cells and serum of the recipient and the proposed donor —J Marnoch and T Shennan (Aberdeen) discussed thrombo-angeitis obliterans —A Lyall (Aberdeen) dealt with the protein ratio in relation to the acidosis of diabetes —J. S Dunn and C. J Polson (Manchester) in experiments on uric acid nephritis found that very large doses of urate intravenously were excreted in the kidneys, passed down the tubules, and then by concentration and acidification was precipitated in the ascending limb of Henle's loop where they caused necrosis of the epithelium The urea retention observed is due to urea leaking back from the glomerular filtrate through the damaged epithelium. No chronic results were obtained by the repeated exhibition of smaller doses —G. S Williamson and I H Pearse (London) urged that the "intercellular channels" between the epithelial cells of the thyroid alveoli were cells joining their microcapillary system to the general reticulo-endothelial apparatus of the organ —G. Lenthal Cheatle (London) demonstrated the various forms and modes of origin of the extra- and intra-elastica fibro-adenomata of the breast He also showed how acquired adhesions in bursæ arose by the organisation of strands of lymph —A W. Downie and J Cruickshank (Aberdeen) had planted stones, lead shot gall-stones, glass beats, &c, in the gall-bladders of guinea-pigs and had failed to convince themselves that the epithelial growth which was obtained in some instances was malignant in nature —D Leitch exhibited some of his own specimens and reaffirmed his conviction that they demonstrated cancer —J Marnoch (Aberdeen) showed a leiomyoma of the stomach from a man of 57 with a five years' history of intermittent vomiting and hæmorrhage from an ulcer on the mucosal surface —E F Finch and H H Gleave (Sheffield) described a case of osteoclastoma (myeloid sarcoma) of the femur with a known history of eight years, after the leg was finally amputated recurrence occurred in the stump and the patient died with pulmonary metastases of the typical histological structure —M J Stewart (Leeds), from an analysis of stomach material removed at operation in some 300 patients, concluded that about 9 per cent of chronic gastric ulcers show cancer and that about 19 per cent of cancers show old ulceration The most important criterion of chronic ulceration is destruction of the muscular coat Misplaced epithelium and heterotopias have misled many observers into unjustified diagnoses of cancer —J. S Young and S V Telfer (Glasgow) described a case of renal calculus with epithelioma infiltrating into the kidney. —T Shennan (Aberdeen) discussed a series of tumours of lung and mediastinum and laid stress on the difficulty of distinguishing between the sarcomata and carcinomata —S McDonald (Newcastle) showed how it was possible to make a histological diagnosis of pneumonia in a body exhumed many weeks after burial —N D Ball (London) showed an epithelial tumour growing on the spleen of a rabbit which looked like appendix tissue —J. P. McGowan (Aberdeen) various conditions of comparative blood pathology, H J Parish (London) coccal forms of the diphtheria bacillus, S C Dyke (Wolverhampton) a bony tumour of the breast, D F Cappell (Glasgow) a dissecting aneurysm of the aorta, a retroperitoneal ganglionic neuroma and partial necrosis of liver with tumour formation; J M. Beattie (Liverpool) specimens of experimental foot-and-mouth disease; E E Glynn (Liverpool) a case of ? sprue and some exceptionally large biliary tuberculous abscesses; T Shennan (Aberdeen) various pathological specimens and some useful post-mortem instruments, methods of storing slides, dehydrating alcohol, &c; and C H Usher (Glasgow) some eye preparations

ROYAL SOCIETY OF MEDICINE.

SECTION OF ANÆSTHETICS

The first of two morning sessions of this section, which have been arranged as a welcome to visitors from the United States and Canada, was held on July 13th Dr F. E Shipway, President of the Section, took the chair.

The President, in welcoming the Transatlantic visitors, alluded to the various discoveries made in the domain of anæsthetics by workers in the States

The Physiology of Respiration in Relation to Anæsthesia

Prof J S Haldane read a paper on Some Bearings of the Physiology of Respiration on the Administration of Anæsthetics The anæsthetic administered, he said, acted on the whole central nervous system, and modified the mechanism of various physiological processes; unless these effects were controlled they might be harmful, even dangerous When the anæsthetic was pushed, the lips were apt to lose their bright red colour and to become bluish, though there was no cessation, nor even marked diminution, of breathing. This change of colour indicated that the blood was not being fully oxygenated in the lungs Another symptom of defective oxygenation was Cheyne-Stokes breathing Anomalous effects could be explained by assuming that the oxygen percentages in the different alveoli varied considerably, as alveoli with oxygen content considerably lower than normal might be unable to saturate the blood beyond a lower degree than normal, and the depth of breathing became much diminished But the irregular distribution of air in the alveoli did not interfere with the amount of CO_2 in the mixed arterial blood When in the alveolar air 14 per cent of oxygen was present, the blood was nearly saturated—i e, it reached 97 per cent of saturation If for any reason breathing became shallower, even if it were of increased frequency, symptoms of want of oxygen were produced, the shallow breathing having merely accentuated the differences existing owing to variations in different alveoli Prof Haldane described various experiments made on himself While lying in bed he was able, he said, regularly to cause Cheyne-Stokes breathing by raising his breathing rate from 7 to 20 per minute.

When pushed to full anæsthesia anæsthetics caused diminution in the vigour of the patient's responses to respiratory stimuli and so there was diminished oxygenation of the blood It was apt to be concluded that the continuance of breathing during anæsthesia showed that there was no sign of stoppage, and blueness of lips was likely to be attributed to defective heart rather than to the defective breathing which caused it The importance of maintaining the normal degree of oxygenation of the arterial blood was generally not fully grasped; if it was kept appreciably below normal in the ordinary person, headaches and general depression gradually asserted themselves and persisted long after exposure to oxygen-lack had ended This, he considered, caused some damage—not necessarily gross—of the central nervous system, some alteration in its molecular structure Yet there might be no evident danger actually during anæsthesia, the effects being manifest after anæsthesia was over. An easy way to avoid them was by adding a small amount of CO_2 to the inspired air, as that was a natural stimulant to breathing A good method was

The spleen weighed 1 lb 7 oz , was 7¾ in in length, and histologically showed the usual reticulo-endothelial proliferation, engorged sinuses, and red cell phagocytosis

Orahovats has demonstrated that, in a normal animal, the red cells of the blood in the spleen pulp are more vulnerable to the lytic action of hypotonic saline and less vulnerable to that of saponin than are the red cells in the general circulation This result was obtained in the blood leaving by the vein after ligature of the splenic artery and stimulation of the splenic nerve By this manœuvre red cells were obtained direct from the spleen pulp, cells merely passing through the organ and escaping, its " filter-bed " being eliminated Prof Barcroft inclines to the view that this increased fragility is not acquired during the sojourn of the cells in the spleen pulp, but that cells which are fragile from some unknown physiological cause are retained by the spleen acting as a differential filter

In the case we report, the cells of the blood aspirated from the splenic vein were more fragile than the abnormally fragile cells of the general circulation It is not unlikely that the blood we obtained came from the spleen pulp, for ligature of the pedicle would probably be sufficient stimulus to the splenic nerve, and the delay between ligature and removal would allow sufficient time, for the splenic sinuses to deplete themselves It is obvious that such a result as we obtained in a diseased organ might very easily have been misconstrued if the fundamental physiological facts regarding normal fragility had not been available

ACUTE INTUSSUSCEPTION IN AN ADULT

By F W Widgery, F R C S Eng ,

SENIOR RESIDENT MEDICAL OFFICER, BRISTOL GENERAL HOSPITAL.

The case below is thought worthy of record because of the unusual occurrence of the acute condition in the adult Furthermore, it illustrates the extraordinary power possessed by some individuals of recovery from the moribund state

Mrs D , aged 43, was admitted to the Bristol General Hospital at 10 30 P M on March 13th, 1926, with a history of four days' severe and continuous abdominal pain and vomiting, of sudden onset Her previous history was of no account

The condition on admission was as follows Her expression was anxious , she vomited small quantities of brown fluid frequently and was in great pain The tongue was dry and furred The abdomen was flat, the pain being most severe in the region of the umbilicus There was no rigidity Palpation, however, revealed forcible contraction of the intestine, accompanied by borborygmi, although no visible peristalsis was present Temperature, pulse, and respiration normal

I made a diagnosis of acute small intestine obstruction of unknown origin I opened the abdomen about one hour after admission Some coils of rather distended small intestine first appeared A movable lump was felt about 2 inches below the umbilicus When drawn into the wound it proved to be an ileo-ileal intussusception The mass was easily reduced, but a considerable length of gut was obviously gangrenous owing to thrombosis of the mesenteric vessels It was found necessary to resect 5 feet of the ileum and to do an end-to-end anastomosis

For 48 hours after the operation the patient's condition was desperate, the pulse being quite uncountable and only just perceptible Two intravenous saline injections of 2 pints each were given Eserin and turpentine enemata were begun immediately and continued four-hourly The colour of the vomiting changed from brown to biliary, the bowels began to act, and the patient's condition gradually improved

Convalescence was complicated by a troublesome *Bacillus coli* infection of the wound together with thrombosis of the left internal saphenous vein She was discharged on April 24th The bowels were then acting regularly and have done so up to June 28th The wound is now healed and the swelling of the leg has subsided The interior of the apex of the intussusception showed a gangrenous, adenomatous polyp, about the size of a cherry

I am indebted to Mr J Lacy Firth, into whose ward the patient was admitted, for permission to publish this case

Medical Societies.

PATHOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

A meeting of this Society was held in Marischal College, Aberdeen, on July 9th and 10th, Prof T Shennan and J Cruickshank in the chair

T Dalling (London) said that lamb dysentery could be produced by feeding lambs with cultures of *coli* from infected animals plus cultures of *Cl Welchii* or with larger doses of *welchii* alone In large scale field experiments, mostly in the border counties, very satisfactory protection was obtained (*a*) by immunising the pregnant ewes with *coli* vaccine along with *welchii* toxin-antitoxin mixtures, or (*b*) by dosing new-born lambs with *coli* and *welchii* antisera —J W McLeod (Leeds) described an anaerobic bacillus similar to Pfeiffer's organism obtained from blood and cerebrospinal fluid which produced amounts of hydrogen peroxide demonstrable by the usual cadmium-iodide starch and titanium reagents —C H Browning, J B Cohen, S Ellingworth, and R Gubransen (Glasgow and Leeds) gave an account of the trypanocidal activity of a new series of aminostyryl and aminoanil quinoline compounds Though unsuitable for intravenous injection they gave remarkable curative results with *T brucei* in the acute disease in mice and the chronic infection in rabbits They have much less effect in vitro —A E Boycott and C Price-Jones (London) found that Gaertner's bacillus fed to rats in adequate doses penetrated to the spleen in all cases in two or three days and was then slowly got rid of, only about 15 per cent of animals remaining infected after two months The majority of animals develop agglutinins *B pyocyaneus* and *B typhosus* fail to get a lodgment in the spleen when fed in the same way —J A Arkwright (London) showed that vaccines made from the smooth form of paratyphoid A were more efficient than those prepared from the rough variety —J C Kerrin and J Cruickshank (Aberdeen) described four small epidemics of dysentery in Aberdeen, mostly in children, due to Sonne's dysentery bacillus which appears to be identical with *B coli anaerogenes* —C H Whittle (Cambridge) had found the inulin fermentation of pneumococci an unreliable character.—J Gordon (Leeds) improves media for the growth of the gonococcus by the addition of taurine —P Hartley (London) noted that when nearly neutral mixtures of diphtheria toxin and antitoxin are made in the manner of Ramon the precipitates produced are very small in bulk, contain about 0 5 per cent of the original nitrogen, and are mostly composed of magnesium hydrogen phosphate , the actual antigen cannot constitute more than 10 per cent of the whole precipitate and must be present in a high state of purity Its antigenic value is preserved if it is diluted for injection with saline, but considerably deteriorated if broth meat extracts or carbolic are used —R A O'Brien (London) pointed out that the minute amount of toxin in a Schick test injection can act as an immunising antigen in animals and children —J McIntosh and S L Baker (London) had obtained very variable results in experiments on the filterability of the Rous tumour Passage seemed to raise the infectivity considerably but differences in the physical condition of the tumour and in the viscosity of the extracts made differences which could not be controlled Digesting with acid trypsin gave a more active filtrate —A Leitch (London) had also had much difficulty in transferring " mouse sarcoma 37 " by cell-free filtrates Drying killed the tumour —T J Mackie and E N McDermott (Edinburgh) described the spirillum they had obtained from a case of rat-bite fever , in the rat the organism passes in the tears to the nose and mouth and is so inoculated by the teeth —J O W Barratt (London), from an analysis of the mode of action of hirudin, concluded that it acted on thrombin by carrying out a less thorough washing process On many occasions recently he had returned cylinders of nitrous oxide because they did not pass satisfactorily the clinical reactions of the patient and had an unusual smell, though the latter should not be relied upon, as the nose lost some of its sensitiveness when in the presence of the same aroma for several hours He related one or two cases in the States in which the actual cautery set fire to the vapour in the patient's air passages One such patient with carcinoma of the tongue was given ether by the open method and the cautery applied, when an explosion occurred which fractured the base of the skull and projected the eyes on to the cheeks, at the same time producing a hæmorrhage in the air passages

Dr **WESLEY BOURNE** described some work he did on this subject in the Department of Pharmacology. Glasgow ascertaining the effects of known quantities of impurities added to otherwise pure anæsthetic ether

Dr **MCMECHAN** said he hoped the report of the Committee of which Dr. Blomfield spoke would not be allowed to pass unchallenged In the States certainly the standard of purity insisted on for these drugs was not nearly high enough For nitrous oxide a purity of at least 98 or 99 per cent should be required He added one or two more cases of explosion to those mentioned by Dr McKesson In the case of certain forms of anæsthetic it was very unsafe to allow the patient to light and smoke a cigarette soon after the operation. as so many liked to do

Mr **A. H WELLESLEY**, speaking as a manufacturer, said it was possible to reach an average purity of 2 per cent throughout the cylinder of nitrous oxide.

Dr **WILSON** spoke of a case in which fulminating pneumonia occurred 18 hours after nitrous oxide administration and he knew two cases in this country in which a fatal explosion in the mouth occurred

EDINBURGH OBSTETRICAL SOCIETY

A MEETING of this Society was held on June 9th Dr R W **JOHNSTONE** the President, in the chair Papers were read dealing with the pathology and treatment of

Concealed Accidental Hæmorrhage

Dr J **HEWITT** began by considering the common explanations of the retention of blood within the uterus He agreed with Gordon Ley that non-dilatation of the cervix adhesion of the membranes around the os pressure on the lower uterine segment by the presenting part or rupture of the hæmorrhage into the amniotic sac did not adequately or correctly explain the condition In addition to these objections raised by Ley Dr Hewitt quoted Barnes s views on the supposed adhesion of the membranes and added the personal observation that in many cases the blood-clot was entirely retroplacental and that, even when bleeding extended beyond the placental margin the blood often travelled upwards towards the fundus and thus never even reached the lower segment

In view of the inadequacy of these theories he said it was not surprising that the opinion arose that the blood was retained because the uterus was unable to expel it the uterine muscle being described as inert atonic or paralytic

His own view was that the uterus was temporarily unable to undergo rhythmic contractions because it was already in a state of sustained and painful tetanic contraction His reasons for this belief emerged in answer to the question Why cannot the fœtal parts be palpated in the cases of concealed accidental hæmorrhage? Rigidity of the parietes was not responsible as was shown by the fact that in these cases palpation still yielded negative results when the patient was deeply anæsthetised and even after the abdomen had been opened in the course of a Cæsarean section Intervention of placenta and blood-clot occurred in some cases; but in others, in which palpation had been negative manual exploration of the uterus during Cæsarean section or at autopsy often discovered the placenta on the posterior wall A hard tender, well-defined uterus was incompatible with the description "atonic" and in concealed hæmorrhage the membranes were tense, which would be impossible in an inert organ Dr Hewitt adduced Sir James Mackenzie s dictum that a hollow muscular organ may be distended indefinitely without producing pain until a contraction is set up, in support of his opinion that the uterus was in a state of tonic contraction

Dr S J. **CAMERON** gave his views on the rational treatment theory based on Dr Hewitt's It was most important he said to realise that in concealed accidental hæmorrhage the patient's life was endangered more by shock than by hæmorrhage The amount of blood lost in a fatal case was often much less than was lost by a patient with placenta prævia who survived As regards the relative importance of shock and hæmorrhage, there was a close similarity between concealed accidental hæmorrhage and acute inversion of the uterus. If bleeding was considered the more important factor, Cæsarean section should be performed on every occasion but Dr Cameron did not accept the opinion that it was Perhaps the most generally practised method of treatment was to pack the vagina It was claimed that an efficient vaginal plug arrested the flow of blood through the uterine arteries but he did not believe it possible by any method short of actual ligature or clamp to arrest or perceptibly diminish the flow of blood through these vessels. which had a very wide range of movement and merely rose to a high level when packing was introduced into the vagina Moreover, a liberal blood-supply still reached the uterus by the ovarian arteries which, during pregnancy, were not much smaller than the uterine arteries and which with the latter, formed an unconstricted "utero-ovarian loop' on the margins of the uterus between the aorta above and the internal iliac artery below

In treating cases of concealed accidental hæmorrhage said Dr Cameron the patient should be guarded from shock by administering large and repeated doses of morphia during the acute stage When this stage has passed but not before, labour pains were stimulated by pituitary extract If the patient did not improve after morphia had been given he performed Cæsarean section because in his experience one of two events had occurred—viz. a recurrence of bleeding, or rupture of the uterus So far he had never been compelled to remove the uterus on account of atony He did not perform vaginal Cæsarean section because (1) the shock was not less than abdominal Cæsarean section, (2) it was impossible to inspect the uterus for rupture (3) hæmorrhage was less easily controlled. and (4) towards the end of pregnancy extraction of the child might be difficult

---

MEDICAL INSTRUCTION BY PAMPHLETS — The Wesleyan and General Assurance Society, whose headquarters are at Birmingham, has been issuing through its health service bureau a series of pamphlets on matters of health and hygiene More than 600 medical officers of health and 150 educational authorities have already made use of these pamphlets and the three recently published should be as popular as their predecessors The one on whooping-cough usefully calls attention to the seriousness of this disease which the public has never respected as it respects the other acute specific fevers—perhaps because there is no rash. The second deals with rheumatism On the one hand it refers to the dangers and prevention of rheumatic infection in children wisely calling attention to chorea as one of the manifestations, and on the other describes rheumatism as it affects older people. The third is concerned with the care of the teeth and has a striking cover depicting a crocodile with its mouth open to show a fine set of teeth with the slogan "The Crocodile Lives 200 Years" On the backs of the pamphlets are thoughts on health culled from bygone authors and these contain many useful maxims to arrange that the patient should re-breathe a portion of his own expired air In the presence of shallow breathing all parts of the lung were not duly expanded, and hence there was a deficient general oxygenation Mere increase in the rate of breathing, without an added depth, was relatively useless Too large a proportion of CO_2 was washed out of the blood, and this caused alkalosis, the consequences of which to the circulation was very serious It was desirable to add a small amount of CO_2 to the air breathed by patients after operation, especially if the operation had been prolonged This also brought about more rapid elimination of the anæsthetic from the tissues Forced breathing—as distinct from deep breathing—removed too large a quantity of CO_2 from the blood and thus brought about alkalosis

Even when CO_2 is used a definite time is required to bring the patient fairly under the anæsthetic To do this, not only the blood but the tissues must be saturated sufficiently, and each quota of blood entering and leaving the lungs must contain a certain amount of anæsthetic until the required degree was reached It had been found that the circulation of the blood through the central nervous system was more rapid than through any other part of the organism An instrument was needed which would regulate the proportion of the anæsthetic and the amount of CO_2 in the air being inspired by the patient, as was done in the case of the instrument used for miners who inhaled noxious gases in the pits

Discussion

Dr S R **Wilson** (Manchester) said he considered that the occurrence of cyanosis in any form of anæsthesia was unsound Sometimes, in abdominal operations, when the patient's lips and ears remained a healthy pink, the lips of the abdominal wound were blue Every method of anæsthetisation implied some degree of re-breathing Sometimes the surgeon's manipulations greatly reduced the respiration of the patient, for example, when he put a bridge under the thorax when doing a gall-bladder operation, it being thus brought down occasionally to only 40 per cent of the normal He considered that the reflex and sensory side of the subject ought to be more fully considered

Dr **McMechan** (U S A) said Major Schroeder's experience in the States was that at the height of 25,000 to 30,000 ft it was possible to study all the phenomena of analgesia Aviators found deep breathing a remedy for many of the ills they experienced at great heights He referred to the work of de Sajous, of Philadelphia, who insisted that there was a basic phenomenon connected with the adrenalin secretion underlying the function of respiration That authority considered that unless adrenalin was actively secreted and was present in the blood stream, it was difficult for the physiology of respiration to be carried on efficiently A prolonged operation sometimes annihilated the adrenalin reserve, and then it was difficult to maintain the vital processes There was a type of patient who was tending towards alkalosis even before anæsthesia was commenced

Prof **Haldane** replied at some length He said the blue lips of the abdominal wound referred to could be rendered pink by exposing them to an atmosphere containing 5 per cent of CO_2, or by bathing them with saline solution He thought CO_2 would also overcome most of the reflex difficulties The lowering of the alkaline reserve in the blood should not be regarded, he thought, as evidence of acidosis He had personally studied the effects on the organism of being in an atmospheric pressure equal to that at a height of 25,000 ft, and in himself the early symptoms were a shakiness in his writing when making the records and a distinct weakening of memory, so that it was necessary to at once enter a figure, or he would forget it

Dr J **Blomfield** gave an address on

Recent Investigations concerning Nitrous Oxide and the Ignition Points of Certain Anæsthetic Vapours

Searching for something to lay before the visitors from over the Atlantic which could have escaped even their indefatigable inquiries into all anæsthetic questions, he had been fortunate in having at his disposal the work of a committee whose very existence was probably unknown in Canada and the United States This was the Anæsthetics Committee set up jointly by the Medical Research Council and the Anæsthetic Section of the Royal Society of Medicine His remarks would be based almost entirely on the work, partly done and partly still in progress, of this Committee, which consisted of Dr H H Dale, Prof F G Donnan Prof M S Pembrey, Dr F E Shipway, Dr C F. Hadfield, and himself

Although a good deal of investigation had been done by the Committee on the impurities of ether and on the clinical and laboratory aspects of acetylene, ethylene, and propylene, Dr Blomfield dealt chiefly with nitrous oxide and with the work which Prof H B Dixon had carried out for the Committee on the ignition points of various vapours A number of samples of nitrous oxide were examined which were taken from cylinders from which patients had inhaled the anæsthetic and had afterwards exhibited unusual symptoms The samples had been supplied by various anæsthetists who had found reason to complain of the gas The outstanding fact which resulted from a large number of examinations was that in no instance was there present any one of the formidable impurities which were suspected to be the cause of the symptoms That is to say, no halogen, carbon monoxide, or nitric oxide was found in any instance The impurity most often found was nitrogen, in percentage varying from 2 to 10 It was also made evident by the various experiments that when this gas is present as an impurity in a cylinder of nitrous oxide it is in its highest proportion in the first quantities of gas that escape from the cylinder, and this disproportion between early and later samples is the most marked the more nearly vertical the position in which the cylinder is employed

Dr Blomfield described the experiments which Prof Dixon had carried out on the ignition points of ether, of ethylene, and of propylene He alluded to the practical importance of Prof Dixon's determinations and in particular to the fact that ignition of ether did not require, as anæsthetists had been apt to suppose, a red-hot metal or an open flame When used in ways in which it was often used to day the ignition point of ether vapour was well below that required to bring metal to a red heat, and it was disregard of this fact that had been responsible for several disasters The experiments had also brought out the fact that a combination of ethylene and nitrous oxide was more easily ignited than one of ethylene and oxygen—another unexpected finding With regard to acetylene, the Committee had found that the measures which alone succeeded in removing the acetone present with this anæsthetic were of a kind to render the clinical use of acetylene most inconvenient, even apart from the disadvantage of the unpleasant smell of this agent

Prof **Haldane** said this contribution brought the subject of anæsthesia into close relation with that of coal-mining in the respiratory aspect In connexion with rescue apparatus used in mines there was at first considerable difficulty experienced owing to the presence of a considerable proportion of nitrogen as an impurity in the oxygen This gradually accumulated, and in time became a dangerous factor in suffocation, the miner using and relying upon a closed cavity when perhaps half a mile below the surface Nowadays there was present in this apparatus only ½ per cent of nitrogen

Dr **McKesson** (U S A.) deplored the tendency of some manufacturers to diminish the standard of purity of the drug supplied in order to add to their profits, logical laboratory. There, however, are minor criticisms which do not detract from the general excellence of the book

---

PRACTICAL MICROSCOPY.

Third edition By F SHILLINGTON SCALES, M A , M D, B Ch Cantab , University Lecturer in Medical Radiology and Electrology, Cambridge London Baillière, Tindall and Cox 1926 Pp 332 8s 6d

THE third edition of this manual has been revised and brought up to date without, however, any extensive alterations to the size in scope of the volume The choice of an instrument, the structure and use of the various accessories, photomicrography, practical optics, and microscopic technique are dealt with simply and adequately , and Dr Scales's little book remains a safe and adequate guide to those beginning the study of microscopy

---

MANUAL OF DETERMINATIVE BACTERIOLOGY

Second edition By HENRY BERGEY, University of Pennsylvania Philadelphia, U S A Assisted by a Committee of the Society of American Bacteriologists Baltimore Williams and Wilkins Company, London Baillière Tindall and Cox 1925 Pp 462 25s

THE second edition of this now well-known manual of bacterial classification appears a little over a year after its original publication, and is in size and form but little altered, although some alterations have been made in the generic names for reasons of priority The chief noticeable changes in the manual are the correction of certain errors and the rectification of some defects which we pointed out when reviewing the first edition —notably the failure to include synonyms in the index, which formerly made it impossible for an organism to be traced by one who was not conversant with the system in use, and the lack of descriptive headlines to the pages, the introduction of which facilitates rapid reference Even so the book is not easy to find the way about in, and we would suggest that in a future edition a tabular statement might be inserted at the commencement showing the inter-relationships of the various orders, families, and tribes We notice that the page references in the short but important section which details the method of identifying an unknown organism from a knowledge of its characters (pp ix -xi.) are not always correctly given The nomenclature in use is often cumbersome, and lacking in attraction for the medical bacteriologist who deals with only a relatively few organisms and is concerned in his groups with minutiæ of differentiation which are of no interest to botanists and commercial bacteriologists This tends to make him intolerant of the involved and laborious terminology which is here presented, but he must realise, and the perusal of recent literature makes it evident that he is beginning to realise, that a more exact classification is desirable than one which includes the influenza organism, the diphtheria bacillus, and the tetanus organism in the same genus For this reason Bergey s manual must be welcomed, and even if the classification of the Society of American Bacteriologists does not survive in its entirety there is no doubt that it marks an important stage in the history of this branch of biological study

---

MESENTERIC VASCULAR OCCLUSION

By H J COKKINIS, M B B S , F R C S Surgical Registrar, London Lock Hospital London Baillière, Tindall and Cox 1926 Pp 159 10s 6d

THIS is a monograph on what is usually regarded as a very rare disease of which the author has been able to collect 76 hitherto unpublished cases The anatomy of the blood-supply of the intestine is described and experiments to show the effect of occlusion of vessels brought forward The clinical findings consistently agree with the results of these experiments There follow a useful description of symptoms and guides to the diagnosis and treatment The book forms a definite contribution to the subject.

A VILLAGE ON THE THAMES

Whitchurch, Yesterday and To-day By Sir RICKMAN GODLEE Bart , K C V O , M S , F R C S. With a Memorial Sketch by Sir GEORGE NEWMAN, K C B , and a Foreword by Lady GODLEE. London George Allen and Unwin, Ltd 1926. Pp 283 7s 6d

A SIDE of Sir Rickman Godlee's life well known to a large circle of friends though little revealed in his scientific and biographical writings is illustrated by this study of the history, local and natural, of Whitchurch, where his charming country house Coombe End Farm, was situated The book is not a detailed story of the village such as finds its way into weighty county histories—in respect of Whitchurch much of this work had been previously done by Canon Slatter, who is frequently cited by Sir Rickman Godlee. Part of the volume appeared in short chapters in the parish magazine at the invitation of the incumbent, and these, especially the earlier sections bear the imprint of their intended audience; but the author's wide knowledge of natural history and far-ranging if desultory antiquarian studies have carried him beyond his original design, with the result that we obtain from him résumés of subjects which often form the basis of learned discussions and sometimes of legal interpositions He deals, indeed with all sorts of historical and geological points as they are illustrated by the site and soil of the angle in the Thames Valley represented by Whitchurch and Pangbourne. In the chapters entitled "Our Mammals," "Some of Our Birds," "Beneficent Birds," and "The Gamekeepers' Larder" he appears as a field naturalist of high order with a large range of exact knowledge under which to classify his observations, and on page after page familiarity with what may be called rural phenomena is apparent. Interesting chapters deal with the rectors of Whitchurch, Whitchurch bridge, and the names of the various meadows, lanes, and pits in the village and vicinity. The study of place names "is frightfully difficult but so absorbing that some people devote their whole lives to it," says the author, but the study has the greatest importance in local history because of the relative permanence of such names even though their origins and significance seem impossible to trace

We recommend this unpretending volume to all country dwellers Certain of the charming illustrations are reproduced from water-colour sketches by Lady Godlee, others are from aquatints by Joseph Farington, who executed a whole series of Thames views, and one of the most effective, "The Thames in Flood," is from a water-colour drawing by the author himself

---

JOURNALS

GUY'S HOSPITAL REPORTS No 2. April, 1926 (Vol VI , Fourth Series) —"A F H" contributes an obituary of George Herbert Hunt This is followed by a paper on heart disease and pregnancy by Hunt, edited by J M H Campbell, in which, as a result of work carried out in the five years before his death, Hunt concludes that provided the heart is not enlarged patients with mitral disease stand pregnancy well , if the heart is enlarged the risk is greater and very similar whatever the valvular lesion present, while in auricular fibrillation the result of pregnancy is disastrous —G W. Rake describes a case of annular muscular hypertrophy of the œsophagus and discusses the findings —W E Tanner gives an account of a case of dysphagia due to a posterior pharyngo-œsophageal pouch —The association of chronic duodenal ileus with gastric and duodenal ulcers is the subject of a series of papers A F Hurst had previously shown that the presence of chronic duodenal ileus would predispose to ulcers in this region, and

Reviews and Notices of Books.

EUGENICS

The Need for Eugenic Reform By LEONARD DARWIN London John Murray 1926 Pp 529 12*s*

THE object which the president of the Eugenics Education Society has had in writing this book is not, we take it, so much to advance any particular views which he may hold himself as to persuade ordinary educated men and women that they must take racial problems seriously and give time and attention to the eugenic method of attempting to improve mankind It is well adapted to this purpose Among a great deal of writing on the subject which shows more enthusiasm than common sense, or is frankly propagandist in aim, Major Darwin's survey is conspicuously sober, sensible, and sincere The subject is full of difficulties, of which the outstanding ones are that we know very little of the genetical structure of individuals (though experience has taught us something of mass inheritance) and that we are not sure what we are aiming at From this uncertainty it necessarily follows that the author, where he does take a definite line, is sure to be provocative to someone Take, for example, his summary (p 327) "Almost every class must on balance be receiving additions from below, and must in consequence be suffering from the inferior quality of its recruits In short, as far as we can judge from the facts at our disposal, the nation as a whole is slowly and steadily deteriorating as regards its average inborn qualities" It would be difficult to imagine propositions of a more debatable kind or of a higher sociological importance We hardly think that he really expects to convince us of their truth What is needed is that we should think about them earnestly and his book forms an admirable introduction to the closer study which they deserve from everyone who takes part in public life Of his constructive proposals no one realises the difficulties more than Major Darwin At some of them it is possible to laugh, which is unfortunate, in so far as it may encourage those who believe that eugenics is unnecessary and that man is still sufficiently an animal to adapt his effective multiplication to his circumstances without much deliberate thought

BASAL METABOLISM IN HEALTH AND DISEASE

By EUGENE F DUBOIS, M D, Medical Director, Russel Sage Institute of Pathology Associate Professor of Medicine, Cornell University Medical College Philadelphia and New York Lea and Febiger 1924 Pp 372

Dr Eugene DuBois has probably done more work on the subject of basal metabolism in disease in recent years than any other man, and his book therefore ranks as an authoritative presentation of the subject The first half of the volume deals with physiology, the methods used in measuring, and the standards on which the normal basal metabolism is assessed Dr DuBois quite rightly points out that in the Tissot and the Douglas bag method of measuring respiratory exchange the volume of the inspired air is greater than the expired air, so that the oxygen intake cannot merely be obtained by subtracting one percentage of oxygen from another, and multiplying by the pulmonary ventilation and dividing by 100 He might well have explained how by calculation these errors can be obviated The lack of insistence on this possible source of error in recent monographs suggests that this error is not corrected in some of the work carried out at the present day by this method

The other half of the book contains an account of metabolism in disease wisely enough not confined to basal metabolism. He also considers observations made on the increased respiratory exchange after the intake of *foodstuffs*, a subject that may be of importance in explaining the cause of obesity A chapter on metabolism in fever is of special interest and, needless to say, the metabolism in thyroid disease is very fully considered The subject of diabetes is also treated from a wider aspect than merely that of the basal metabolism, this section is a particularly valuable one, though it is a pity that the author does not state more definitely whether he believes that the low respiratory quotients so often obtained are, or are not due to a conversion of fat into carbohydrate The evidence, though not conclusive, appears to favour the former view

The description of the various standards of comparison is particularly useful Dr DuBois is inclined to believe that the metabolism is proportional to the surface area in normal individuals It is surprising to find him applying the same law to such frankly abnormal subjects as the obese He quotes with approval Means's observations that in this condition because the metabolism is proportional to the body surface the body metabolism in the obese is unaltered But is it right to apply the body surface law at all to such a condition? Would not the covering of fat be expected to diminish the loss of heat? Again, the extra weight of the individual is due to fat Is there any evidence that the number of cells in the body is increased in this condition? In any case the metabolism of mere adipose tissue must be extremely low To us it would seem that Means's result is a proof that the metabolism in obesity is abnormal—i e, much higher than would be expected—and that in these cases it can be explained by a luxus consumption following on an excessive food intake Of course such a view does not apply to cases of obesity which are of endocrine origin and in some of these cases there is no doubt that the metabolism is low It would seem desirable to regard patients as physiological units and to use as a standard the metabolism calculated from the predicted weight of the individual, or the weight of the patient before he became fat

HISTOLOGICAL TECHNIQUE

By H M CARLETON, M A, B Sc, D Phil, University Lecturer in Histology, Oxford Chapters VII and VIII in collaboration with FREDERIC HAYNES, B A, Demonstrator of Histology Oxford University Press, Humphrey Milford 1926 Pp 398 16s

PRACTICAL text-books can never replace the actual experience of the laboratory, but such manuals must always be necessary unless science is to be bound by oral tradition With the help of the written word the tyro may postpone, even indefinitely, the moment when the patience of his teacher becomes exhausted, and the expert is glad from time to time to refresh his memory Dr Carleton's book will prove both a safe guide for the beginner and a valuable companion for the more experienced worker It is essentially practical and is full of just those useful tips which make all the difference between complete success and mediocrity in this exacting science

The first part deals with the cell as a structural unit and a physico-chemical entity, and outlines the methods employed in histology Part 2 treats of histological methods in detail Part 3 describes the accessory methods in use—dark-ground illumination, histo-chemical tests, injection methods, and vital staining In Part 4 the methods for special organs and tissues are described, and in Part 5 the technique of morbid histology, bacteriology, and parasitology

In a book of this size it is obviously impossible to include everything, many methods and modifications of methods must necessarily be omitted We should have been glad to see more emphasis laid on the value of carbon bisulphide as a clearing agent, or butyl alcohol as recommended by F W Twort, and those extremely useful decalcifying agents, Perényis' and Jenkins's fluids might well have been included The small Cambridge rocker and the humble razor receive scant recognition, nevertheless, with these an amount of first-rate material can be dealt with which would astonish the inhabitants of an ordinary histo-

MATERNITY AND CHILD WELFARE.

CONFERENCE AT WESTMINSTER

THE Fourth English-speaking Conference on Maternity and Child Welfare was held at the Caxton Hall, Westminster, from July 5th to 8th, and over 700 delegates attended Sir Kingsley Wood (Parliamentary Secretary to the Ministry of Health) acted as President in the unavoidable absence of Mr Neville Chamberlain

In his presidential address Sir Kingsley Wood emphasised the need for complete cooperation between voluntary societies and the statutory health authorities He referred to the slight set-back which there had been during the last two years in the decline of the infant mortality-rate, and to the high rates still prevalent for still-births and maternal mortality More effectual antenatal supervision and more maternity hospital beds were needed, though progress in these directions had been made during the last two years Seventy per cent of the rural population were now provided with trained midwives, and he hoped that the Midwives and Maternity Homes Bill, when it came into operation, would raise the standard of maternity homes The Ministry of Health hoped to do something in the near future to promote better housing in the villages and rural districts But it needed the backing of public opinion, and congresses such as the present one were the best means of educating the public

The Well-being of Children from One to Five Years Old

At the first session Dame Janet Campbell (Ministry of Health) opened a discussion on this subject There was, she said, a gap in medical supervision between infancy and school entrance which was not being filled The child at this age was particularly vulnerable to the onset of disease It was liable to develop digestive and nutritional disorders, respiratory, aural and nasal affections, squint, the infectious fevers and all the sequelæ which occurred after such diseases as measles, whooping-cough or acute anterior poliomyelitis The best means of reducing this incidence were (1) better education of mothers in the management of the ex-baby, (2) periodical skilled supervision, and (3) facilities for early treatment Competent health visiting would probably do more than anything else to raise the standard of health of the pre-school child Special sessions should be held at the infant welfare centres for ex-babies, facilities for treatment at the school clinics should be extended to the children under 5, and better provision should be made for the adequate nursing of infectious diseases Modern methods of immunisation ought to be considered in the case of diphtheria and scarlet fever, and orthopædic treatment ought to be arranged for in cases of tuberculosis, infantile paralysis, rickets, and the like

Miss W B Ireland (New York) quoted the remarks of a health official to the effect that, although the need for pre-school work was realised, they had first to reach a greater percentage of the infants, to secure better supervision of school children, and to carry out an intensive antenatal programme

Prof de Buys (Tuluana University, New Orleans) said that the infant should come under the care of the pædiatrician from the moment of birth, and described the arrangements which were made in a New Orleans maternity hospital Practically all the babies, he said, were breast-fed, and in order to prevent the initial loss of weight, they were supplied with the milk of other mothers during the first few days Great care was given to the preparation of the breast, and there had been no case of fissured nipples or abscess of the breast during five years Puerperal pyrexia, he said, was never due to the breasts if the axillary glands were not enlarged Mother and infant were usually discharged at the eleventh day, though occasionally the infant was kept in longer All babies were brought up for examination at the end of the fourth week, and there was a regular follow-up system This supervision from the beginning was essential for the study of birth injuries and the diseases and tendencies of the very young child

An animated discussion followed, in the course of which it was remarked that it was easy enough to get the ex-baby to the centre, but very difficult to get him fed properly Health visitors, it was suggested, needed more knowledge of cooking and how to lay out the housekeeping money, and regret was expressed that the free milk-supply had dwindled away

The Crippling Diseases of Childhood

At the second session Dr F J Poynton (London) described the present want of knowledge concerning the prevention of rheumatic heart disease in childhood Acute rheumatism under the age of 5, he said, had not really been investigated In children acute rheumatism was largely a town disease Amongst other factors he thought that scarlet fever, measles, and diphtheria might predispose to it, but he was doubtful whether diet had any definite influence The part played by streptococci in the ætiology required investigation, and more complete knowledge about the school conditions which gave rise to rheumatism was wanted The damaged heart of a child, said Dr. Poynton, needed coaxing forward, and its treatment should not be the same as that given to the damaged heart of an old person He sounded a note of warning against the formation of numerous special heart clinics

Dr G R Girdlestone (Wingfield Orthopædic Hospital) dealt with other forms of crippling and insisted on the supreme value of early discovery and prompt treatment The discovery that something was going wrong must be made while the child was still like other children Those in charge of children must be on the look-out for limps, they must take the child to the orthopædic clinic at once In tuberculous cases the tuberculosis officers had power to arrange for payment The danger of infection from properly treated surgical tuberculosis was nil In infantile paralysis much good could be done if the child was taken into hospital at the earliest possible stage of the acute disease

During the discussion congratulations were accorded to Dame Agnes Hunt on the recognition of her work in inaugurating the movement for the salving of cripples The need for unity of effort and better cooperation between all the organisations working for child welfare was ably voiced by Miss Margaret Beavan (Liverpool Child Welfare Association)

The Father's Part in Child Welfare

On the second day Dr James Fenton aroused much interest by his description of the Father's Council, organised in connexion with the welfare centre at Lancaster-road, Kensington Many of the subsequent speakers expressed their intention of organising similar councils in their districts

The value of light treatment was discussed by Dr C W Saleeby, Dr Stella Churchill, Dr Stanley Banks, and Sir Leslie McKenzie

Speakers at the afternoon session, which was devoted to publicity methods, included Lord Riddell. and Dr J. E Sandilands (Bombay) Mr. Sydney Walton (Harrow) urged that each hospital should have its information committee or company of torch-bearers Hospitals should be lighthouses as well as lifeboats Reports should be humanised and they should not be written in officialese, and committees should find out local residents who could write attractively A mother's bookshop ought to be established in every large centre of population, and attractive leaflets distributed from door to door The New York Metropolitan Insurance Co, said Mr Walton, issued model leaflets

Midwifery in the Homes of the People

On the third morning a joint session with the Royal Sanitary Institute to discuss this subject attracted a large audience The points of view of the midwife the district nurse-midwife, the consultant, the medical this receives ample confirmation from the cases here published by A F. Hurst and P J Briggs, R P Rowlands, J Gaymer Jones, and J A Ryle —The correct treatment of acute obstruction of the small intestine is the subject of a paper by R P Rowlands, who discusses the need for early diagnosis and describes a temporary valvular enterostomy as the operation of choice in this condition —A case of chronic volvulus of the pelvic colon simulating pyloric obstruction radiologically diagnosed and successfully resected is described by A F Hurst — Seven cases of ball-valve accumulations in the rectum form the subject of a paper by J A Ryle, who discusses the causes, symptoms, diagnosis, and treatment of this condition —F A Knott contributes a short study on the use of salicylates in gall-bladder disease He finds as a result of animal experiments that the average concentration of sodium salicylate in the bile after oral administration in pharmacopœial doses of any of the ordinary compounds is very small as compared with the minimum concentration necessary to obtain bactericidal effects in the biliary tracts — Two cases of secondary sarcomatous deposits in the brain are described in detail by J G Weston —G W Nicholson continues his studies on tumour formation, dealing in this part of his paper with ectopic endometrial tumours He gives an account of the nomenclature and histology of the condition and discusses the pathology, classification, and origin of these tumours, giving a broad summary of the literature

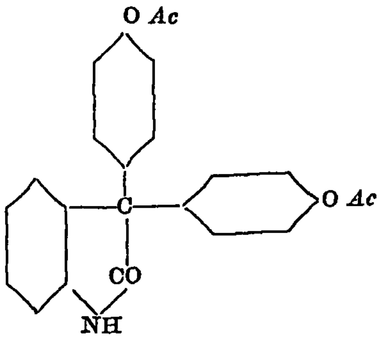
The Cancer Review —A Journal of Abstracts Bristol. John Wright and Sons Subscription 30s per annum —This is the first number of a new journal issued under the direction of the British Empire Cancer Campaign and having as its object the publication of abstracts and reviews of current contributions to the literature on cancer The journal will appear in ten numbers during the year It is under the editorial control of a committee composed of Dr F Cavers, the General Editor, Dr W. Cramer, Dr C E Dukes, Prof H Shaw Dunn, Dr H J B Fry, Dr M Greenwood, Dr. E L Kennaway, Dr P J Kerley, and Prof C A Pannett The members of the Editorial Committee have been responsible for the abstracts, which number over 100 The abstracts are conveniently grouped under five headings (1) General, (2) experimental and biochemical, (3) clinical and pathological, (4) radiological, (5) statistical An author's index is also provided The abstracts are full, clear, and critical The literature on cancer is overburdened with statements based on little or no reliable evidence, and if the journal succeeds in giving a critical reflection of current work on cancer it will fulfil a useful purpose

Reports and Analytical Records.

ISACEN ROCHE BRAND

(Hoffmann-La Roche Chemical Works, Ltd, 7–8 Idol-lane, London, E C 3)

Isacen, which is described as a new synthetic non-toxic purgative, is diacetyldihydroxyphenylisatine which has the structural formula



This compound is a white powder melting at 242° C It is saponified by alkalis with the formation of dihydroxyphenylisatine In consequence of its insolubility in water and dilute hydrochloric acid "Isacen" passes through the stomach unchanged In the alkaline medium of the intestine the acetyl groups are slowly broken off and dihydroxyphenylisatine liberated, which can then exercise its specific action on the colon

When submitted to analysis the tablets of "Isacen" gave the following results —

Average weight of each tablet	3/5	gr
Isacen contained in each tablet	1/13	,,
Petroleum ether extract	0 44	per cent
Alcohol extract ("Isacen," m pt 242° C)	12 60	,,
Water extract (dextrin, &c)	37 80	,,
Filling (wheat starch)	49 16	,,

On saponification with alkali the correct amount of acetic acid is liberated

VITALIA MEAT JUICE (LIQ HÆMOGLOBIN DULC)

(Vitalia Limited, 17a, Boniface Street, Westminster Bridge Road, London, S E 1)

We have previously noticed this preparation of British origin, which according to the published analysis contains water, 81 70 per cent, total ash, 1 07 per cent, sodium chloride, equivalent to chlorine, 0 25 per cent, total phosphoric acid, 0 05 per cent, total nitrogen, 2 50 per cent, hæmoglobin, 8 00 per cent The percentage of hæmoglobin is, of course, a point in its favour, and as it is produced by a cold process the natural vitamin content is preserved Meat juice is a convenient form of nutriment in many conditions, especially where a rapidly acting tonic is indicated, and this particular preparation has been found valuable, the assimilable sustenance inducing sleep where the patient is liable to awake after short periods In the exhaustion after severe operations and illnesses it can be easily digested by the weakened subject Vitalia meat juice is palatable and is put up in bottles of 1, 2, 4, 8, and 16 ounces The dose is one to two teaspoonfuls for an adult, half a teaspoonful for children, and 5 to 15 drops for infants It should be diluted with four times as much cold water or milk and taken three times a day, or more frequently in severe illness

ANGOSTURA BITTERS

Messrs Henderson and Co, the consignees of the preparation "Carypton and Angostura Bitters" noticed in our columns on June 26th last, complain that we have fallen into the serious error of stating that Angostura bitters "are commonly supposed to be compounded of Angostura bark (cusparia)" The authority for the belief will be found in Thorpe's Dictionary, article Cusparia Bark, written by Prof Barger, and the B P Codex (1907, page 303), article on Cusparia There is no characteristic test known to chemists which will detect small quantities of the constituents of Angostura bark which Messrs Henderson say is not one of the contents of Carypton and Angostura bitters That product they state to be named after the town of Angostura in Venezuela The satisfactory result, however, on analysis would appear to be the really important thing and not whether the bitter properties were obtained from cusparia or whether the popular name is a place name We accept the statement, of course, that the name "Carypton and Angostura Bitters" has a geographical and not a botanical significance

officer of health, the general practitioner, and the health visitor were described by selected speakers

Miss Doubleday (Midwives' Institute) said that the midwife was capable of doing her own antenatal supervision and had great opportunities of educating both father and mother in their own home The public must be made to understand that antenatal work was part of midwifery and that it should not be paid for separately

Miss Fowler (Q V J I N) pointed out that suitable women were deterred from taking up midwifery by the fact that they had to compete with the so-called handy woman There was room for the handy woman as home help The Midwives' Institute wanted the aid of consultant gynæcologists for the practising midwives, and would like to see post-mortem examinations made in all cases of maternal death from childbirth

Dr. T. Watts Eden (London) enumerated the conditions necessary for safe confinement in the home, and pointed out that puerperal sepsis was actually less among extern than among intern cases in hospital practice

Dr. W Allen Daley (Hull) said that in some districts midwives did no antenatal work, and that in others there was antagonism between the midwives and the antenatal centres Midwife inspectors should be educators and not detectives Midwives must be paid more highly, but there must be no fee from the patient for antenatal work

Dr. E K Le Fleming (British Medical Association), speaking as a general practitioner, said that it was all right to jeer at the handy woman if an efficient substitute was to be had ; he could not conceive of a general practitioner preferring a handy woman to a properly trained and sensible midwife District nurses in the country could do the work of the antenatal clinic in the town Women did not like to go to a clinic, deserting their own doctor and nurse More hospital beds were needed, but they would be useless without proper means of transport

Miss Paterson (New Zealand) stated that in view of the high childbirth mortality in New Zealand, she had been investigating the midwifery service of the European countries with a low mortality In Denmark midwives attended all cases and called in specialists when required In Holland great attention was given to antenatal work

Dr Leon Jona (Melbourne) said that midwifery should be carried out by specialists only

Dr. Dickenson (New York) said that the midwife waited for Nature, whereas the doctor did not ; therefore the midwife's cases did better than the doctor's

Mrs Bernard James mentioned that there were now district nurse-midwives in every district in Buckinghamshire

The discussion, therefore, brought out a strong body of opinion that confinements should, as a rule, take place in the home, and that the desire for hospital confinements is chiefly due to the housing scarcity

The Churches and the Child

On the afternoon of the third day a debate on the Churches and the Child was held under the auspices of the National Council for the Unmarried Mother and Her Child During the discussion the speakers, who represented many religious beliefs—all laid stress on the importance of caring for the bodily and mental, as well as the spiritual, welfare of the mothers The rescue work of the Salvation Army was described by Commissioner Adelaide Cox

The Chief Rabbi said that in poor districts the Jewish infant mortality was only half the non-Jewish All Jewesses, he said, fed their children at the breast, there was no baby-farming among them and no use of patent foods " as good as mother's milk " There was a total absence of alcoholism among poor Jewesses all over the world

Mr. J H. Lidiard pleaded for an effort to house the people in such a way as to prevent the need for rescue work He described the efforts of Church Army Housing Ltd , which provided houses for tenants at reasonable rates by getting rid of the uneconomic portion of a new house This was done, he said, by securing donations or mortgages at 2½ per cent instead of 5 per cent For example, a house costing £600, by means of a donation of £300, could be let at the rental of a house costing £300 Such companies, he suggested, might be formed widely

The discussion made it clear that all over the world the churches are now taking more interest in hygiene The opinion was, however, expressed that a great deal more might be done by religious bodies to fight the " denial of children "

During the conference a number of round-table discussions took place Dr S G Moore (Huddersfield) showed that child welfare was a more profitable proposition than tuberculosis work, and was, in fact, the best method of preventing tuberculosis A discussion on whether welfare centres should give advice about birth control brought out the usual difference of opinion on this controversial subject Other round-table conferences dealt with the provision for mentally deficient children under the school age and the prevention of congenital syphilis There was also a lecture by Dr Saleeby, and one by Dr Douglas White (Eugenics Education Society) on the Consequences of Heredity and Environment in Child Welfare Many visits to child welfare institutions were made

SOCIETY OF MEDICAL OFFICERS OF HEALTH

Tonsils and Adenoids

The Maternity and Child Welfare Group held its annual meeting during the conference, at which it discussed Tonsils and Adenoids

Mr George Waugh (London) gave an interesting history of the evolution of the operation of tonsillar enucleation at the Hospital for Sick Children, Great Ormond-street When the operation was instituted some 20 years ago, he said, it was hoped that it would abolish gland surgery, ear discharges, and mastoid disease The harvest of results had not proved disappointing, and as the years went by more and more conditions had been added to the list of those cured or benefited by tonsillectomy These included dyspepsias, malnutrition, dyspnœa, croup, recurrent bronchitis, and broncho-pneumonia The operation had been found beneficial for diphtheria carriers and as a prelude to the repair of cleft palate Cases of cyclical vomiting and nephritis also improved after the removal of a tonsillar septic focus Carditis of rheumatic origin had not been tackled on a large enough scale in this country In toxic irritability of the heart the results had been disappointing when the removal of the tonsil was incomplete, but had improved after enucleation was adopted In some cases of anæmia the results were good, and where there were enlarged mediastinal glands and suspicious signs at the left apex enucleation of the tonsils might avert the threat of sanatorium life Eye diseases in connexion with ear and throat trouble had benefited There was no age limit, said Mr Waugh, for the removal of septic foci, and 1385 operations had been on patients under the age of 2 years , the range was from 3 weeks to 70 years The test of disease in the tonsils was not inspection but rather the question Can concurrent ailments be explained in any other way ? Unsuspected abscesses had been found in 3000 cases amongst 30,000 operated on Anyone could learn the technique of the enucleation operation in six months, though bad tonsillar surgery unfortunately abounded

Dr R C Clarke (Bristol) said that he thought that the tonsil was a useful organ until it was knocked out Catarrh should, if possible, be prevented by protecting children from carriers of infection, but he did not believe in the causes usually supposed to lower resistance to catarrh, such as wet feet and clothes, rickets, and diet The local resistance of the nasal mucous membrane was very low in infancy and much more might be done to protect the infant from infection

Dr H K Waller (London) read a paper on the early symptoms and signs of ill-health associated with tonsils and adenoids Nasal trouble, he said, often led to bottle-feeding because the baby was unable to get the milk out of the breast Herding in houses in the winter was a common cause of catarrh Infection conferred no immunity An excess of carbohydrate in the diet of the ex-baby was one predisposing cause

Dr Octavia Lewin (London) said that a more systematic effort should be made to keep the baby's nose clear and to prevent "nasal constipation"

The Services.

INDIAN MEDICAL SERVICE

Special Recruitment, 1926

The Secretary of State for India announces that a Committee will be held at the India Office in the near future for the selection of European candidates for direct appointment to permanent commissions in the Indian Medical Service on special terms which include a gratuity of £1000 after six years' service, or £2500 after 12 years' service, together with free return passage to any officer so appointed who no longer desires to remain in the Service Otherwise the terms will be as detailed below

Appointment —Conditions of Service

Candidates must be under 32 years of age at the time of application, and must possess qualifications registrable in Great Britain and Ireland under the Medical Acts now in force

Up to the present time Indian Medical Service officers have been employed both in civil and military departments of Government, and have been interchangeable between the two The practice as regards employment in the civil and military side of the Service has been as follows

At the beginning of his career an officer was employed on the military side, which has medical charge of the Indian Army If he remained in military employ he held a post on the staff of a station hospital, or a specialist post, or a post on the administrative staff of the army, promotion being on a time-scale up to the rank of lieutenant-colonel and by selection to the ranks of colonel and major-general He could, however, if he chose, apply, after two years' Indian military service, to be registered as a candidate for transfer to the civil side, from which appointments are made to civil surgeoncies, established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes and to the specialist services (for example, public health, bacteriological and research departments, and the professorships at the medical schools) Such transfers normally took place after about seven years' service in military employment

The Lee Commission has, however, recommended certain changes in the organisation of the medical services in India, and in view of their recommendations only military employment can be guaranteed to officers entering the Indian Medical Service at the present time It is, however, guaranteed that they will be eligible for civil employment under such conditions of service as may be made applicable to officers in future appointed to the Indian Medical Service as a result of decisions taken on the Lee Commission report

Private Practice —War Service

Executive medical officers in both civil and military employment may attend persons unconnected with Government service provided their duty admits of it Candidates are, however, informed that while serving on the military side the opportunities for private practice are not great

Service during the war as a medical or combatant officer or in a position usually filled by an officer, counts towards promotion and pension so long as the rights of officers who have entered by competition are not interfered with

Pay

The monthly rates of pay for European officers in the Service are as follows —

Rank and service in rank	Basic pay	Overseas pay		Year of total service
		If drawn in sterling	If drawn in rupees	
	Rs	£	Rs	
Lieut	500	—	150	First
		—	150	Second
		—	150	Third
Captain —				
1 During first three years' service as Captain	650	—	150	Fourth
		15	150	Fifth
		15	150	Sixth
2 With more than three and less than six years' service as Captain	750	25	250	Seventh
		25	250	Eighth
		25	250	Ninth
3 With more than six years' service as Captain	850	25	250	Tenth
		25	250	Eleventh
		30	300	Twelfth
Major —				
1 During first three years' service as Major	950	—	—	—
2 With more than three and less than six years service as Major	1100	—	—	—
3 With more than six years' service as Major	1250	30	300	Thirteenth and over
Lieut Colonel —				
1 Until completion of 23 years' total service	1500	—	—	—
2 During twenty fourth and twenty-fifth years' total service	1600	—	—	—
3 After completion of 25 years total service	1700	—	—	—
4 When selected for increased pay	1850	—	—	—

Note —Until the completion of 23 years' total service basic pay is regulated according to rank and service in rank (column 1) which, owing to the system of accelerated promotion, may be in advance of the time scale of promotion Overseas pay is regulated solely with reference to length of total service (column 5)

In addition to grades there are a number of appointments as colonels on Rs 2200 to Rs 2500, according to the appointment held, and as major-general on Rs 2750 The appointment of Director of Medical Services in India, carrying pay at Rs 3200 per mensem, may also be held by an officer of the Indian Medical Service

It may be pointed out to intending candidates that the initial rates of pay for the Indian Medical Service, as for all Government departments, are based on the assumption that the majority of newly appointed officers will be bachelors It is also the case that an officer, when junior, is liable to more frequent changes of station than later on in his service, and he may therefore be put to considerable expense for transfers if he has a family Officers, therefore, who join the Service, married, may have considerable difficulty in living within their pay during the first few years of their service

Extras · Outfit and Allowance

Extras —In addition to the above rates, officers in military employment, when in command or second-in-command of the larger station hospitals, receive special allowances On the civil side there are public health, bacteriological, research, and professional appointments carrying special enhanced rates Special rates of pay are attached to the administrative appointments open to officers in both branches of the Service

Officers on appointment will receive an outfit allowance of £50, subject to certain provisions as regards previous commissioned service in any branch of His Majesty's forces

Pensions

The rates of pensions are as follows —

Service	Rates per annum	Service	Rates per annum
After 17 years	£400	After 23 years	£620
" 18 "	430	" 24 "	660
" 19 "	460	" 25 "	700
" 20 "	500	" 26 "	750
" 21 "	540	" 27 "	800
" 22 "	580		

The above rates are subject to revision, upwards or downwards, to an extent not exceeding 20 per cent in all, on account of a rise or fall in the cost of living, as compared with the year 1919 A deduction of 4 per cent on this account has already been made A further revision may take place on July 1st, 1927, and every three years thereafter

There are additional pensions ranging from £125 to £350 per annum for officers who have held high administrative appointments as colonels or major-generals These pensions are not subject to the above reduction

Passages

Officers on appointment are when possible, provided with passage to India by transport When such accommodation is not available passage at the public expense is provided by private steamer, or passage allowance is granted if preferred The wives and families of officers who are married prior to the date of the officer's embarkation on first appointment to the Indian Medical Service will also be provided with free passage to India at the public expense under the same conditions as those applicable to the officers themselves

Indian Medical Service officers are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their career

Increased Cadre

The allowance for furlough has been increased to 25 per cent, and the cadre has been increased 2½ per cent for study leave, making a total of 27½ per cent There are special allowances for officers whilst on study leave

Further particulars can be obtained on application to the Secretary, Military Department, India Office, Whitehall, London, S W 1 Letters should be marked "Recruitment for I M S"

The King has approved the grading of the following officers in the Indian Medical Service —

Capts C MacD Nicol, D V O'Malley, L G Pearson, J H Barrett, T H Thomas, J Carrey, G H Fraser, and W. H Critien

Maj R G Shaw officiates as Consultant Dermatologist in India, Army Headquarters, vice Maj T H Scott on leave Capt F H Whyte has been appointed Specialist in Surgery, United Provinces District, vice Maj R C Clifford, vacated Capt E C Linton has been appointed to charge of Brigade Laboratory, Jhansi, vice Capt G. D Jameson, vacated On relief by Maj H L Batra, Capt E R Daboo, officiating Civil Surgeon, Sibsagar, acts as Civil Surgeon, Sadiya Frontier Tract Lt B S Nat has been appointed Specialist in Surgery, Waziristan District, vice Capt F H Whyte Capt R C Wats to be Deputy Director of Pathology, Waziristan District, vice Maj S S Sokhey Maj G L Duncan to be Deputy Director of Medical Service, Western Command, vice Maj H M Inman. Lt-Col A. H Proctor, Civil Surgeon, Darjeeling, acts as Surgeon Superintendent, Presidency General Hospital, Calcutta, vice Lt-Col E E Water Lt-Col C A Godson, Civil Surgeon, Hooghly, has been appointed to hold medical charge of Civil Station of Serampore Maj P F Gow, officiating Civil Surgeon, Murshidabad, has been transferred to Hooghly Capt B H Singh, Resident Medical Officer, Medical College Hospital, Calcutta, officiates for him as Civil Surgeon, Murshidabad The services of Capt S N Hayes, Professor of Operative Surgery, King Edward Medical College, Lahore, have been placed at the disposal of the Department of Education Lt-Col R Kelsall, Physician, General Hospital, Rangoon, has taken over the duties of Civil Surgeon, Rangoon East, vice Maj S H Middleton West, proceeding on leave Maj G G Jolly has been confirmed as Director of Public Health, Burma. Lt-Col F V V Beit, Medical Superintendent, Geneva Hospital, has been appointed Superintendent, Burma Medical School, vice Lt-Col Fuller Good, Civil Surgeon, Rangoon West Dr D N Hazra, Civil Surgeon, Bogra, has been transferred to Bihram, vice Maj J J A. Brached. Dr S N Bhattacharjee, Civil Surgeon, Malda, succeeds Dr D N Hazra at Bogra Lt E F Hottinger, Civil Surgeon, Mianwali, and Dr G McGuire, Civil Surgeon, Karnat, have been taken on cadre of Civil Surgeons in the Punjab Maj R E U Newman officiates as Assistant Director of Hygiene and Pathology, Western Command Col F H G Hutcheson, A D M S, U P District, has been promoted Maj-Gen

ROYAL NAVAL MEDICAL SERVICE

The following appointments are notified Surg-Comdrs. G Carlisle to the *Champion*, A I Sheldon to the *Excellent*; and W N L Cherry to the *Warspite*, addl, and as Fleet M O (from date of joining) Surg-Lt A G L Brown to the *Defiance*

W T Donovan, A B Stewart, and H L Duncan to be Surg-Lts

ROYAL ARMY MEDICAL CORPS

Maj-Gen Sir M H G Fell, late R A M C, to be Lt-Gen.

Maj-Gen J R McMunn, late R A M C, retires on retd pay

Capt. A R F Clarke retires, receiving a gratuity, and is granted the rank of Maj

Temp Capt E F W Buckell relinquishes his commn on account of ill-health, and is granted the rank of Capt

J D Borham to be temp Lt

ROYAL MILITIA OF THE ISLAND OF JERSEY

Light Infantry —Surg Lt-Col P B Bentlif is placed on the Res of Mila Off, and is granted the hon. rank of Surg-Col

TERRITORIAL ARMY

Lt-Col J H Hunter to be Bt Col

Maj (Prov) E M Douglas-Morris is confirmed in his rank

Capt H J D Smythe to be Maj

Capt A H Macklin, late R A M C, to be Lt and relinquishes the rank of Capt

Lt E G R Grant, late R War R, to be Lt

Lt W T B Joss, late North'd Fusrs, to be Lt

Supernumerary for Service with O T C —Capt. H. S Allen late the King's R, to be Lt. supernumerary for service with Medical Unit, London Univ, O T C, and relinquishes the rank of Capt

TERRITORIAL ARMY RESERVE OF OFFICERS

Capt R J McN Love, from Active List (supernumerary for service with Medical Unit, London University O T C), to be Capt

Lt E A Sparks, from Active List, to be Lt

WEST AFRICAN MEDICAL STAFF

Dr J Y Wood is promoted a Senior Medical Officer in Sierra Leone in succession to Dr J C Murphy, retired, Dr F Ross, a Senior Medical Officer in Nigeria, in succession to Dr C W McLeay, retired, and Dr L H Booth, a Senior Medical Officer in Sierra Leone, in the place of Dr A M Dowdall, who has been transferred to the Gold Coast in succession to Dr G J Keigwin, retired

---

The late Sir John Sherburn —After a somewhat prolonged illness Sir John Sherburn, who had retired from active practice, died at his home, Brantingham Thorpe, Brough, East Yorkshire, on July 7th Born in 1851, the son of the late Mr John Sherburn, of Howden, he studied at the University of Edinburgh, where he graduated in medicine in 1875 He became house surgeon and pathologist to the Hull Royal Infirmary, and then took up practice in Hull For a long time he was consulting surgeon to the Hull Royal Infirmary and he was intimately concerned with the foundation of the Hull Victoria Hospital for Sick Children He was sheriff of the city in 1886–7, entered the town council in 1887, and served two years as mayor, from 1888 to 1890 He was appointed a J P for Hull in 1889, and later for the County of the East Riding of Yorkshire, he was also Lieut-Colonel of the Northumbrian Brigade, R F A., and a representative member for the East Riding on the Territorial Force Association Sir John Sherburn several times attempted to enter Parliament in the Conservative interest, but he was never successful He was a partner in a large shipping firm at Hull and a vice-chairman of the Shipping Committee of Hull Chamber of Commerce He was knighted in 1902 In 1884 he married Louise Ainley, youngest daughter of the late William Bailey, J P, of Winstead Hall, Holderness Lady Sherburn survives him, with two sons and three daughters

THE LANCET.

LONDON: SATURDAY, JULY 17, 1926

PNEUMONIA CASES IN FEVER HOSPITALS

Practitioners are sometimes heard to grumble that the notification of diseases other than exanthemata may be of statistical value, but brings them no help in dealing with actual cases It is an old grievance, and every effort towards its removal gives an impetus to the slow growth of confidence in the administrators of public health, whose incessant demands for the filling up of forms involve labour which often seems to be unproductive The arrangements chronicled in the annual report[1] for 1925 of the Scottish Board of Health, whereby additional beds for cases of pneumonia are provided in city or county hospitals, will bring welcome relief to the doctor as well as to the patient s family The reasons for selecting pneumonia for special consideration are set out in the report The Board points out that far more public interest is devoted to tuberculosis, which accounts for some 4000 deaths in Scotland every year, than to pneumonia, though this disease claims an annual toll of 6000 to 7000 cases apart from those following measles or whooping-cough which are classified under the primary causes From these figures we cannot estimate the number of patients who suffer and recover from pneumonia in any year, since forms of the disease other than acute primary and acute influenzal pneumonia are not notifiable However, **Murray Leslie** and **J Browning Alexander**,[2] from a study of the literature, conclude that while wide variations exist, the average case death rate from pneumonia at all ages is about 20 per cent , on this basis there must be in Scotland at least 30,000 cases every year of some form of inflammation of the lungs—a condition which requires watchful care and expert nursing whatever the causative organism Moreover, though within the last 70 years the death-rate from most other diseases, including diseases of the respiratory system, has fallen, the death-rate from pneumonia in all its forms has increased greatly during this period It may well be that a number of affections formerly regarded as tuberculous or bronchitic are now diagnosed as pneumonia, and that the total number is also swelled by the inclusion of pneumonias which are really only terminal conditions, but when these possibilities are discounted, there remains a larger number of cases than can possibly be admitted to existing voluntary or Poor-law hospitals An obvious advantage of the scheme would seem to be the utilisation of empty beds during periods when infectious diseases proper are not prevalent The desirability of using the infectious disease hospitals to supplement the accommodation in voluntary and Poor law hospitals is recognised in the recent report of the Hospital Services (Scotland) Committee, though with anticipation that a big extension of the hospital work will fall on local authorities It has already caused a heavy strain on the hospital accommodation of some localities Glasgow, for instance, had 468 cases of pneumonia in its infectious diseases hospitals on Dec 2nd, 1925, the local authority having definitely undertaken to remove to its hospital any pneumonia patient whose doctor recommends his removal Aberdeen Burgh and Aberdeen County have given a similar undertaking, while several other local authorities are prepared to admit a varying number of cases of pneumonia to their fever hospitals Details of some of the schemes adopted for the institutional and nursing services for pneumonia patients are appended Of these the most informative is that of the Aberdeen Town Council, since the cases *admitted to the City Hospital* are divided into four groups and the death-rate is calculated separately The total number of cases *admitted to this hospital* in the period 1919 to 1925 inclusive was 896, of which 221 were primary lobar, 117 primary broncho pneumonia, 72 influenzal pneumonia, and 486 broncho pneumonia secondary to measles and whooping cough The case death-rates per cent were respectively 12, 38, 29, and 35 The figures are as yet too small to be anything but indicators, but the fact that lobar pneumonia has the smallest case death *rate* is significant The Aberdeen County Council are prepared to provide both a day and night nurse for grave cases treated at home if the patient is *unable to* bear the expense Hospital treatment is, however, regarded as the ideal to be aimed at, and in view of the easy and comfortable *methods of transport* now available, it is deemed safe to remove to hospital a patient suffering from pneumonia—except in the presence of signs of cardiac embarrassment—up to and including the fourth day of illness This clause would seem to refer to cases of lobar pneumonia where a crisis is to be anticipated, though this is not stated, and supplies an instance of the confusion in terminology referred to below. The total number of cases admitted to the Glasgow Corporation's fever hospitals in the same seven years was 12,517 The deaths among 5334 children under 5 years of age admitted with acute primary and influenzal pneumonia were 1404, representing a case death-rate of 26 3 per cent, while those among persons over five years—the large proportion of whom were young people—were 1323, a case death-rate of 18 4 per cent These figures take no account of the large number of cases of secondary pneumonias to which are admitted to measles and whooping-cough wards. No comment is made in the report on the fact that the case death-rate of cases under institutional care is not appreciably less than the estimated average for all cases The object of increasing largely the number of beds available for pneumonia patients is presumably not only to save life, but to reduce the period of convalescence and lessen the danger of relapses or sequelæ If the scheme is also to serve a scientific purpose, it will be necessary to arrange for a uniform classification of the cases admitted, since the term pneumonia, as loosely used in the report, covers many widely different conditions For the most part, the term appears to denote any sort of inflammation of the lungs, irrespective of the causative organism , elsewhere it seems to be used in a much more limited sense For example, the paragraph on Methods of Treatment (p 91) begins "A serum is now available for the treatment of about a third of all cases of pneumonia—viz , those due to the pneumococcus of Type 1 ' The last-named type certainly is not found in a third of "all cases of pneumonia," though it may account for a third of the cases of lobar pneumonia The nomenclature of this complex subject appears urgently to need revision

In drawing special attention to the measures taken to combat pneumonia in Scotland, we would not seem to imply that progress in the development of other public health measures is less noteworthy All sections of the report addressed by the Scottish Board of Health to its president, Sir JOHN GILMOUR, will repay study The 20 pages allotted to venereal diseases provide a summary of the pathology, sociology, symptoms, and successful modern treatment of these diseases, which is more informative than many large text books on the subject The section on housing is less encouraging Whatever opinion may be held as to the reasons for the failure to complete houses, it is regrettable to record that though 20,000 houses per annum are stated to be required, it has not been found possible to complete within a year 9808 houses which had actually been begun at the beginning of the year Closely allied to the housing problem are the concerted scientific investigations on rickets being carried out in Glasgow and elsewhere Significant conclusions drawn from a survey of data collected are (1) that rickets, though showing some signs of decline, is still a very widespread disease, (2) that the methods of diagnosis of early rickets are steadily improving in technique, and (3) that, as the result of extended experimental and clinical investigation, the methods of arresting and curing rickets are sufficiently developed and definite to justify the hope that the disease will now steadily and rapidly disappear No less energy is being shown in the attack on other problems of State medicine in Scotland, and the report gives promise that its successors will record changes and developments in many useful directions

---

[1] Seventh Annual Report of the Scottish Board of Health for 1925 Cmd 2674 1926 Edinburgh H M Stationery Office Pp 326 5s 6d

[2] Pneumonia London Heinemann 1924

◆

THE BRITISH EMPIRE CANCER CAMPAIGN

THE Duke of YORK presided over the third annual general meeting of the British Empire Cancer Campaign on Monday, July 12th The Campaign, he said, had been initiated to link up research institutions and workers in the Empire, and the annual report showed that the founder's aims were bearing fruit He hoped that the *Cancer Review* (which we notice on p 128) would be useful not only to workers in the great research centres throughout the world but also to those in various branches of medicine who might wish to turn their attention to this line of study No opportunity should be lost, he pointed out, of affording all possible help to those independent research workers who might only be able to devote part of their professional time thereto, thus enabling them to follow their own individual lines of research The counties were now trying to take their full share by setting up their own centres or by county committees working in aid of the Central Fund, and he congratulated the Yorkshire Council on having already raised locally nearly £100,000, and on having taken steps to start the work of their research centre in connexion with the University of Leeds

His Royal Highness in his address presented ably the main features of a full year's work of the Campaign, and the annual report, which was made public immediately after, gives the details of the various researches and activities which have been supported financially and otherwise by the movement Among these may be mentioned maintenance grants to the Cancer Hospital, Middlesex Hospital, St Mark's Hospital, and St Bartholomew's Hospital, while to certain of these as well as to the London Association of the Medical Women's Federation radium is being allocated which was purchased by the Campaign with the assistance of the Medical Research Council The résumés of the work at the various centres selected for support appear in the document, and will be read with interest as showing the numerous and differing angles from which the various problems are being attacked Here lies the real hope, for those who are best able to endorse the optimism of the Minister of Health in respect of an approaching control of cancer are those to whom experience in scientific investigation has shown that no one solution of a particular difficulty is likely to effect much by itself, although its influence over other inquiries may be of superlative value At any time in the wide range of experiment now engaged upon an inference may turn itself into an indication, and an indication into a revelation, for which reason it is justifiable to be sanguine, even while it is very necessary to be on our guard against premature conclusions

A paper by Dr THOMAS LUMSDEN published this week in THE LANCET is an excellent example of the kind of large yet intensive research which the Campaign is prepared to support Dr LUMSDEN's work at the Lister Institute has been subsidised in an open-handed manner by the Campaign, and we believe that those who study his paper sufficiently closely to be able to follow the conclusions will agree that these are of real moment The hope of the discovery of an efficient antiserum against sarcoma, which can be employed in the human subject with safety, may seem too good to be true, but imagination has made freer excursions with less support and without disappointment

◆

PYORRHŒA AND THE MECHANISM OF TOOTH ERUPTION

THE mechanism of normal tooth eruption, though apparently simple, is not yet understood Of the many theories put forward to explain the process none is completely satisfactory. Recent work by an Austrian observer, Dr B GOTTLIEB, summarised in the *British Dental Journal* of May 1st by Mr A T PITTS, is of interest not only because Dr GOTTLIEB's views are original, but also because he founds on these views an entirely new conception of the nature of the pathological changes occurring in pyorrhœa In order to understand his argument it is necessary briefly to recall what is generally accepted as the sequence of events in the eruption of a tooth. Previous to eruption the developing tooth is surrounded by a fibrous capsule known as the dental follicle It has been shown by HERTWIG, VON BRUNN, and others that this follicle contains an abundance of epithelial cells derived by buddings off from the enamel organ, which form a more or less complete investment round the tooth known as the sheath of Hertwig The dental follicle is in contact with the enamel of the crown but not adherent to it, except that at some stage previous to eruption the epithelial cells go to form part of that transparent pellicle external to the enamel which is called Nasmyth's membrane In the root part of the tooth the dental follicle is adherent to the cement covering the dentine of the root and in this situation is called the periodontal membrane or periosteum of the tooth Just about the time of eruption, though exactly when is not known, the epithelial cells in the coronal part of the follicle become detached from the follicle and blend with the epithelial remains of the enamel organ to form Nasmyth's membrane When a tooth commences to erupt it has usually been supposed that the cleavage of these cells has already extended as far as the neck of the tooth, so that there is a space extending to the neck where the periodontal membrane commences. It has further been supposed that either by an advancement of the tooth through the bone or by an absorption of the gum, or both combined, this deep space or trough round the crown undergoes a progressive shrinkage until when the tooth has completed eruption there is a narrow collar of gum surrounding the neck of the tooth This collar is lined with epithelium which at its base blends with the periodontal membrane and may even be continuous with Nasmyth's membrane on the enamel. So far Gottlieb seems to agree with the current views, but the post-eruptive changes as described by him introduce an entirely new conception. Gottlieb believes that when a tooth erupts, the base of the gingival trough, as the space round the tooth is termed, is not situated at the junction of enamel and cement, but is attached to the enamel at some distance from the neck, and that even when a tooth has completely erupted in a clinical sense the actual base of the gingival trough is still above the level of the enamel-cement junction. The process of eruption according to Gottlieb involves a gradual separation of the epithelium from the enamel so that the base of the gingival trough progressively travels towards the root. Concurrently with this cleavage of epithelium there is a proliferation of epithelium towards the root. But even when clinical eruption is complete the process still goes on, for as the base of the gingival trough approaches the neck of the tooth the epithelium proliferates into the periodontal membrane and eventually the denudation of the tooth may not stop short at complete exposure of the crown as commonly supposed, but may even go on until a portion of the root may become visible as part of a purely physiological process. This final stage of eruption does not go on indefinitely, though Gottlieb does not indicate the stage when eruption is complete. Concurrently with these progressive changes in the soft tissues at the neck of the tooth there is also a progressive absorption of the level of the alveolar margins which keeps pace with the detachment of epithelium from the enamel. According to Gottlieb this alveolar absorption occurs early, even before there is any down growth of epithelium into the periodontal membrane. Thus, to summarise, eruption as Gottlieb understands it comprises a threefold process (*a*) detachment of epithelium from the enamel, (*b*) absorption of the alveolar border, and (*c*) proliferation of epithelium at the base of the gingival trough towards and eventually into the periodontal membrane. These processes should occur harmoniously and represent a physiological process without any pathological significance. This point of view would imply that eruption is a much lengthier process than previous observers have imagined, continuing, indeed, long after a tooth has advanced into occlusion with its antagonist. Moreover, under Gottlieb's hypothesis, the denudation of the gum from the root of the tooth instead of being a pathological process, as it is generally assumed to be, would be the final stage of normal eruption. It would be easy to criticise this theory, but there are certain facts which support it, and it cannot be lightly put on one side, especially since it seems to help us to elucidate the pathology of pyorrhœa.

Gottlieb recognises three forms of pyorrhœa. Dirt pyorrhœa, paradental pyorrhœa, and alveolar atrophy. In the first two the changes are essentially those occurring in eruption, but they occur in a disorderly fashion instead of harmoniously. In dirt pyorrhœa the initial factor is some local irritant such as food stagnation, faulty fillings or crowns, and crowding of teeth. This stagnation leads to inflammatory changes in the gum. In normal eruption the gum shrinks as the epithelium grows along the root, and the gingival trough is preserved at a stable depth. In dirt pyorrhœa the inflammation prevents this shrinkage and leads to hypertrophy. The gingival trough thus becomes abnormally deep in fact becomes a pocket. The inflammation may cause a rapid proliferation of epithelium towards the root. At first the epithelial lining of the pocket may be intact, but it soon becomes destroyed in part or wholly, by ulceration, and a pus pocket results. The spreading inflammation then destroys the fibres of the periodontal membrane, which is thus stripped from the cement of the root. In paradental pyorrhœa the chief factor seems to be an uneven shifting of the base of the gingival trough, the proliferation of epithelium being asymmetrical. The normal defensive power of the trough in resisting infection is weakened and inflammation results, tartar and food being deposited with resulting bacterial stagnation. The ætiology of paradental pyorrhœa is still obscure, for it may occur in healthy mouths and without any apparent stagnation.

Two forms of bone destruction are described by Dr Gottlieb—marginal atrophy and diffuse atrophy. The former is part of the mechanism of normal eruption and becomes pathological only when it does not occur evenly round the circumference of the tooth. This is comparable to the uneven detachment of epithelium in paradental pyorrhœa. Marginal atrophy occurs chiefly in dirt pyorrhœa and is caused by the same factors of local irritation as lead to the deepening of the pocket in that condition. Diffuse alveolar atrophy is an entirely different condition. It occurs in a lateral plane leading to widening of the periodontal space, whereas marginal atrophy occurs in a vertical plane. Diffuse atrophy may affect any part of the alveolar bone and may occur without any lesion of the gingival margins. This is an important distinction, for Gottlieb believes that it may occur as a primary lesion and not as an extension of marginal infection. Since the stability of a tooth depends on the bone being intact, it follows that a destruction of bone laterally in any part of the socket must lead to loosening of the tooth. The diagnosis of the condition depends on a recognition of this fact. If a pocket is shallow compared to the degree of loosening, then the condition is primarily one of diffuse alveolar atrophy. If the pocket is deep, then the loosening is due to vertical destruction of bone—i e, to dirt pyorrhœa. Diffuse alveolar atrophy is often, though not invariably, associated with paradental pyorrhœa, though Dr Gottlieb does not consider that they have a common ætiology. Those who are interested in his views will find them well set out in a monograph published by him in Vienna last year.[1] Gottlieb does not discuss in this book the morbid histology of diffuse atrophy, but it is evident that the primary change must be in the periodontal membrane and that the condition must be essentially one of bone absorption and its replacement by fibrous tissue. H K Box,[2] who describes a similar condition in his valuable studies on periodontal infections, has given an elaborate account of the morbid anatomy of what is apparently the same condition. The name given by him to the condition is rarefying pericementitis fibrosa. It is a process of bone absorption both by halisteresis and lacunar absorption, and replacement of the bone absorbed by a low grade of fibrous tissue. Like Gottlieb, Box lays stress on the fact that it may occur as a primary lesion and that it leads to loosening of the teeth. There are further parallels between the work of the two observers. Both describe the down-growth of epithelium into the pockets. Box, however, regards it as a concomitant of the infective process and essentially an attempt to repair the ulcerative process. Gottlieb looks upon it as a part of the normal mechanism of eruption, though in pyorrhœa as a result of a morbid stimulus the epithelial proliferation may be excessive and aid in the formation of a pocket. Box studies the appearances from the standpoint of morbid histology, while Gottlieb is more concerned with the mechanism of the pathological processes. Though they differ in their interpretation of the significance of the changes, the fact that each has independently observed and described the condition is significant. It may be hoped that their researches will stimulate other workers to study the eruptive process, for on the confirmation of Gottlieb's heterodox views on eruption the validity of his conception of the pathology of pyorrhœa must depend.

---

[1] Schmutzpyorrhœ, Paradentalpyorrhœ und Alveolaratrophie. By Dr B Gottlieb, Privatdozent für Zahnheilkunde University of Vienna. Urban und Schwarzenberg, Vienna. 1925. Op 85. 6 marks.

[2] Studies in Periodontal Pathology. Canadian Dental Research Foundation, Toronto. 1924.

Annotations.

"Ne quid nimis"

MEDICAL EDUCATION IN EGYPT

The political situation in Cairo is at present attracting general attention The outcome may well prove to be of great importance in regard to medical education in Egypt It will be within the knowledge of many of our readers that there was at the Kasr-el-Ainy Hospital a flourishing school of medicine chiefly under British guidance with many Egyptian medical men on the staff as physicians, surgeons, specialists, and teachers This school was recognised by the Conjoint Board in this country until about a year ago During the last two years many changes have occurred The English staff and teachers have for the most part been retired or replaced, though at the present time there is an English acting director or dean of the Faculty, who has been associated with the school for many years as professor of surgery and surgeon to the hospital The Minister of Education in the Ministry which has recently resigned has invited Sir Cooper Perry, who is just retiring from the post of principal officer of the University of London, to go out to Egypt in October to reorganise the medical school as a faculty of the new University of Cairo Sir Cooper Perry, by his long experience of university matters, notably as Vice-Chancellor and principal officer of the University of London, is well qualified for this work, and he has, moreover, the great advantage of previous experience of the Egyptian Medical School, as it was on his report that the Kasr-el-Ainy School was so successfully organised nearly 30 years ago We are also informed that it is proposed to appoint Englishmen to certain important professorial posts on the new Faculty of Medicine We welcome the news that the reorganisation of the School of Medicine is to be taken seriously in hand, and we feel sure that Sir Cooper Perry is the right man to do this in a statesmanlike manner with due regard to the special problems of Egyptian medical education Prof F. C Madden who is acting as dean of the Faculty of Medicine until Sir Cooper Perry's report is complete, has already made some changes tending to place the work in the school on a more satisfactory basis We have on more than one occasion pointed out in The Lancet the great opportunities which Cairo offers for medical education and research, and we have been glad to publish some of the original papers from the workers there both European and Egyptian We are convinced that under wise guidance and with genuine national support the Cairo Medical School can become the most important medical centre in the Near East The present developments give grounds for hoping that the Egyptian Government recognises these facts The experience of the last two years has demonstrated how rapidly a well-organised and effective institution can deteriorate when popular clamour sways the authorities and when ill-advised partisan interference is permitted We venture to hope that Sir Cooper Perry will evolve a means of establishing a genuine faculty of medicine and that the Cairo School will again become efficient even more rapidly then it has deteriorated

THE CHANGES IN THE BLOOD IN CONVULSIVE STATES

Interesting observations on the changes in the blood in convulsive states are recorded in the number of the *Bulletin of the Johns Hopkins Hospital* for June, 1926 O Wuth, using as his subjects epileptic patients, observed very definite changes in the blood following upon convulsions, these changes taking the form of a polymorphonucleosis and an increase in non-protein nitrogen, uric acid, and creatinine These changes were pronounced in all the cases observed, and in less careful hands might have led to the construction of an elaborate theory as to the causation of epilepsy or at least of epileptic convulsions Fortunately the author was not content to let the matter rest at this stage but controlled his results with observations on a series of cases of traumatic epilepsy, cerebral syphilis, and general paresis, in all of which violent convulsions were occurring In all cases exactly the same changes were found in the blood as in the cases of true epilepsy The author concludes that the changes found are the result of the violent muscular exertion during the convulsive seizures and have no relationship to the causation of the convulsions

In the same number of the *Bulletin*, Stander and Radlett describe the changes found in the blood of eclamptic patients after convulsive seizures These authors find the outstanding changes to be an increase in the non-protein nitrogen and uric acid as noted by Wuth in his epileptic cases, and also a decrease in the CO_2 combining power of the blood, a hyperglycæmia, and a great increase in the lactic acid The increase in the uric acid they are inclined to regard as a result of the liver damage which is so marked a feature of the eclamptic condition, in view of the fact that a similar change was found by Wuth in his cases of convulsions from various causes, it seems likely, however, that this increase is the result only of the convulsive movements, and is not specific to the eclamptic condition Three possibilities are suggested as to the cause of the striking increase of the blood lactic acid in eclampsia (1) an abnormally great amount of carbohydrate metabolised, (2) a disturbance or slowing down of the "lactic acid to glycogen" step in carbohydrate metabolism, and (3) lactic acid production from sources other than carbohydrate It was found that the administration of insulin caused a rapid reduction of the lactic acid to normal but left the uric acid level unaffected This might seem to point to the second suggestion as offering the correct solution Unfortunately no observations on this point were included in the work of Wuth In view, however, of the fact that lactic acid is excreted in considerable amount during exercise it would seem possible that the increase of the blood lactic acid during eclamptic convulsions may also be due to the violent activity of the musculature and in no way specific to the condition

THE TRIGEMINAL NERVE IN OPHTHALMOLOGY

In an article on the trigeminal nerve, which appears in the June issue of the *British Journal of Ophthalmology*, Mr Leslie Paton gives a useful résumé of our present knowledge In a sense the fifth nerve is involved in all ocular lesions, for its distribution and central connexions afford explanations of ocular pain, ocular headaches, and various ocular reflex phenomena There is, however, a more intimate association between lesions which involve the nerves of the eyeball and certain affections of the cornea Of this association the simplest example is the recurrent erosion of the cornea which occurs as a result of an abrasion causing injury to the superficial plexus of nerve fibrils Other examples are discussed by Mr Paton and include herpes of the cornea, herpes zoster ophthalmicus, and neuroparalytic keratitis The first—simple herpes—is associated with an ultra-microscopic filter-passing virus whose transmissibility has recently been demonstrated by W Gruter, and which is also found in connexion with labial and facial herpes Infection of the rabbit's cornea with this virus may lead to an infection of the central nervous system similar in its nature to encephalitis lethargica, and it has been shown that when this happens the infection travels to the bulbo-spinal root either along the axis cylinders of the fifth nerve or along the perineural lymph spaces In the eyes the most usual manifestation of herpes corneæ is a dendritic ulcer, but similar ulcers may be produced in the absence of herpes virus by the action of other toxins The slowness of healing and the tendency to recurrence which make dendritic ulcers so troublesome depend on the extent of the neural involvement Herpes simplex follows various infections of different kinds which produce a lowering of general tissue resistance. Herpes zoster ophthalmicus is a totally distinct disease and is strictly analogous to ordinary shingles. It follows the distribution of the affected nerve and arises independently of any preceding disease, though there is always a preceding neuralgia. Some or all of the branches of the first division of the fifth may be affected. In just over 50 per cent of the cases the globe is involved and in the majority of these it is the cornea which is attacked. As the naso-ciliary branch is distributed both to the globe and to the side and tip of the nose, the involvement of the latter is an important guide to prognosis. The most frequent primary manifestation in the cornea takes the form of small round-celled infiltrations in the substantia propria; vesicles, secondary infection, iritis, and even optic neuritis may occur later. The primary lesion always occurs in the Gasserian ganglion just as the primary lesion in ordinary herpes zoster occurs in the posterior root ganglion. Herpes zoster may occur in an epidemic form, and it has been shown that it then has a close relation to chicken-pox.

There remains to be discussed neuropathic keratitis. This is a condition in which marked degenerative changes are found in the cornea as the result of lesions affecting the fifth nerve, apparently in any part of its course. In Mr Paton's experience the lesion is common after operations on the Gasserian ganglion for the relief of trigeminal neuralgia—either extirpation or the injection of alcohol; but it may arise from lesions of the nerve either above or below the ganglion. The cause of the condition has not been satisfactorily determined. Some theories lay the main stress on the nervous factor in causation, either by means of a trophic influence or by means of vaso-motor fibres. Others attribute the corneal lesions to trauma due to diminished sensibility. Clinically there is good evidence of a combination of these causes being responsible. It is a remarkable fact that to prevent these lesions or cure them in their initial stage it is only necessary to unite the two lids by a temporary suture, and this seems to show that trauma is really the main factor. It is not necessary, however, that the whole cornea should be covered; a small lid adhesion as far as the outer side of the cornea appears to be sufficient. This is a very curious fact, and Mr. Paton does not offer any explanation of it. Trauma can hardly be the sole factor at work, for in rare cases the first manifestation of the herpes is not keratitis but iritis. Some observers have attributed the condition to dislocation of the vaso-motor mechanism, others to drying of the cornea owing to loss of sensibility; others again, to bacterial infection. Mr Paton considers all these theories unsatisfactory, and suggests that the problem requires further investigation. Useful information, he believes, might be gained by careful research, and to any such work his summary is certainly an excellent introduction.

STUDIES IN ARTIFICIALLY INDUCED MALARIA.

Malaria is to-day the treatment of choice for general paralysis of the insane. It is also being increasingly used for tabes dorsalis and for disseminated sclerosis. If it has blessed those receiving it, it has blessed also those giving it, for critical observation of this artificially induced disease has made important additions to our knowledge of malaria. Clayton Lane[1] gives a critical summary of this new knowledge of malaria gained from its therapeutic use.

Infection may be produced by (1) subcutaneous, intramuscular, or intravenous injection of blood containing malaria parasites, generally *Plasmodium vivax*, the infection being received as trophozoites; or (2) in the natural manner by the "bites" of mosquitoes, usually *Anopheles maculipennis*, which have been infected deliberately by feeding on malaria cases with gametocytes in the cutaneous blood, the infection being received as sporozoites. These methods may be designated "injected" and "natural," respectively. They are sufficiently distinct to necessitate caution in transferring to the one inductions made upon the other. In "injected" infections disinfestation is extraordinarily easy, 3 to 10 g quinine has brought about cure. After "natural" infections relapse much more frequently follows the same dosage of quinine. Clearly infections acquired as trophozoites react to quinine differently from those received as sporozoites. In spite of the much higher probability of malarial relapse the friends of the patient sometimes prefer the sporozoites—they do not like the idea of injection of insane and syphilitic or unknown blood; and this being so the doctor is safer from later charges if he give sporozoites and not trophozoites. The incubation period of "injected" cases has varied from 5 to 35 days, and has differed with the tissue site of infection. 4 to 8 days intravenous, 6 to 35 days subcutaneous, 10 to 16 days scarification with application of the blood. Two patients inoculated at the same time with the same quantity of the same blood may have quite different incubation periods, and it is wise to inform the patient's friends of this variability. Mühlens has insisted on daily examination of the blood to ascertain that a new strain of *P vivax* is pure. Deaths have occurred from unsuspected contamination with *P. falciparum*. Yorke and Macfie record that when deliberately using *P falciparum*, and making daily blood examinations by way of apparently adequate safeguard, deaths have occurred from fulminating cerebral malaria. Once a pure strain of *P. vivax* has been established it has been maintained for years, whether transmitted by "injection" or "naturally"; and has throughout retained the morphological characters of *P vivax*, irrespective of season. The "unicity" theory has broken down completely at the first experimental test. Many observers have proved that gametocytes may eventually form even after many passages in which they have not been observed in injected cases. There is no justification for the conclusion held by some that "injected" cases are no risk to anyone. Again, the same strain of *P vivax*, passed on by injection, may produce different reactions in different hosts. It may seem to require refreshing, or become very virulent for a time. The mortality emphasises the need not only for daily observation of the blood, but for critical clinical regard for the patient as well. It has been pointed out above that the results of quinine treatment of "injected" cases are better than those of mosquito-infected cases; yet even these last are an enormous improvement on those obtained during the Great War, in the same hands, in established cases; and they indicate the vital importance of immediate and adequate treatment of all early malarial infections. As a prophylactic Yorke and Macfie noted that 10 gr. of quinine taken daily for five days before and seven days after infective mosquito bites failed to prevent infection. This could be ensured only by continuing this quantity of quinine for ten days after the infecting bites. Against the sporozoites, then, quinine is ineffective and of little or no prophylactic worth unless taken in curative doses, a conclusion which confirms Hanschell's African observations. Quinine does not act directly on the plasmodia, for blood containing parasites and quin hydrochlor. 1 in 10,000, for 12 hours, or 1 in 5000 for five hours, may yet infect by injection. Quinine given to a donor does not render his blood malarially harmless to the recipient. Malarial parasites are not destroyed when incubated at body temperature with blood containing quinine in far greater strength than can be found in vivo. Yorke and Macfie conclude that quinine destroys, probably indirectly, large numbers, but not all, of the parasites, thus setting free a quantity of soluble antigen to provoke formation of immune body, which destroys yet more parasites. A. Pijper and B Russsell report from South Africa that after injection of benign tertian malaria the red blood corpuscles increase by 10 to 30 per cent. before fever appears, and that fever can be cut out by neosalvarsan injections It may be added that benign tertian infections by "injection" or by mosquito bite do not at first show the tertian intermittent fever seen in established cases The fever at first is irregularly remittent, even typhoid-like, and when, later, the intermittent form appears, it is quotidian This temperature course was demonstrated by the historic case infected by Manson in 1900, in London, by mosquitoes brought from Rome home, but though the case was always remembered its temperature chart was forgotten

---

[1] Tropical Diseases Bulletin, May, 1926, vol. xxiii., No 5.

These are only a few of the many important observations to which the study of malaria as a therapeutic agent has led It will be some time before they can be woven together into a comprehensive whole, but meanwhile much light has been thrown on various aspects of the problem From the epidemiological standpoint the recent communication of Colonel S P. James to the Royal Society of Tropical Medicine and Hygiene, which was reported in The Lancet of June 26th may be of great practical importance The results of his recent researches are set out at greater length in a report[1] published by the League of Nations He has found a close correlation between his field observations of *A maculipennis* and European malaria and the facts disclosed by his laboratory breeding and malaria infecting of this mosquito for therapeutic use in G P I The one showed these mosquitoes haunting and breeding in and about the houses of malaria subjects—a house infection with malaria, the other that *A maculipennis* needs a definitely sheltered existence to acquire and maintain infestation with malaria This presages a shift of anti-malarial effort from the swamp to the household, and will need an organisation of tactful health visitors in tropical lands even more specialised than those who carry out such work at home, if it is to be successful

TEACHING AND LEARNING

The foreword to the Report of the Scientific Work of the Surgical Staff of the Women's Hospital in the State of New York for the year 1923–24,[2] states that the surgical staff are expected to utilise every available opportunity in the hospital by engaging in clinical research and making studies from their records, and the present volume, which consists of 27 monographs by the staff and seven theses by the senior students of Cornell University Medical College, is one of which any hospital might be proud Every article in the volume is the result of observation or research The cases are analysed in elaborate tables and the operative methods employed are excellently illustrated; both tables and illustrations speak of an organisation and of financial resources entirely inaccessible to the English surgeon But to our mind the remarkable portion of the volume is the latter half, containing theses contributed by undergraduate fourth-year students as part of their work in the department of gynæcology for their degree at Cornell Students taking the elective course in gynæcology are given problems as part of their work Two students are assigned to a problem and they work up the data together, but each submits a separate thesis There are here published seven of these theses They reach a really high order of merit showing close observation and thoughtful analysis of the clinical facts that have been recorded To have carried out one such piece of work is a thing of which any medical student might well be proud, and its effect upon the mind of the student can scarcely be exaggerated These theses are on such practical points as post-operative leucocytosis, the end-results of carcinoma of the ovary, the incidence of carcinoma of the cervix following supravaginal hysterectomy the effect of ether anæsthesia on the isoagglutinins of the blood, the results of blood transfusion, the treatment of incomplete abortion and pyelitis as a post-operative complication

Of course no student could produce such theses without a great deal of assistance, but a study of each article shows at once that it has been so arranged that the actual work could be carried out by the students themselves Here we have a method of teaching to which the reformers of medical education in this country might well have their attention directed The scheduled life to which for years our senior students are condemned in an overcrowded curriculum compels them to keep closely to the beaten track if they are to satisfy the examiners Facts must be learnt, but ephemeral theories need not be crammed, a plan which would allow the student, if only for a short space, to breathe the air of research, to observe facts for himself without anticipation of an examination to be faced, calls for serious attention And there is the chance that the properly guided student might produce something useful for the world while working with infinite value to his own mental development Our education authorities have laid much emphasis in the past on the verb "to teach" This volume should serve to remind us of the importance of the verb "to learn"

ETHYLENE ANÆSTHESIA AND CARBON MONOXIDE POISONING

Three cases, two of which were fatal, of collapse after inhalation of ethylene are reported in the *Journal of the American Medical Association* (June 5th), and in two of the patients carbon monoxide was proved to be present in the blood to the extent of 50 and 60 per cent saturation. This report appears to be an important contribution to the literature of ethylene, and marks the desirability of a rigid test of the contents before cylinders of ethylene are put into use The manufacture of this agent for anæsthetic purposes has been on the increase in this country, where, until recently, the only ethylene available for anæsthetists came across the Atlantic, and we do not doubt that the lesson of these cases reported from Pittsburgh will be given due attention In all these three instances, in one of which the period of anæsthesia was 50 minutes, the signs of collapse did not appear till the operation was almost completed Forced inhalations of oxygen with 10 per cent carbon dioxide were the chief remedial measures employed Besides the cylinders used for the patients referred to above, two other fresh cylinders of ethylene were examined for carbon monoxide with positive results. It is satisfactory to note that the problem is being further investigated in collaboration with the United States Bureau of Mines at Pittsburgh

SURGICAL TREATMENT OF BRONCHIECTASIS

Established bronchiectasis is so intractable that recourse to heroic measures may well be justifiable Modern thoracic surgery provides several alternatives The success of treatment largely depends on early diagnosis and as Brauer[1] has pointed out in discussing the advantages of artificial collapse of the lung, the condition presents many different clinical and anatomical pictures It starts, perhaps, with a simple bronchitis and broncho-pneumonia, and goes on with remissions for many years before developing the classical symptoms of the advanced disease Initial stages are frequently overlooked and the diagnosis may not be made until the case requires energetic treatment A persistent localised catarrh should always be suspect When bronchiectasis is diagnosed in the earlier stages it is difficult to decide how soon active intervention should be attempted Brauer considers it indicated if there is copious offensive expectoration, extension of the trouble, a predisposition to hæmorrhages or recurrent broncho-pneumonia, or an irritating and painful cough If intervention is decided on there are three possible procedures—collapse of the lung, pneumotomy, or resection of a lobe or lung. Brauer favours the first of these on the ground that it is the least dangerous; but it must be done in time if it is to be efficacious. The object of all treatment must be to prevent stagnation of the secretions, which occurs in the saccular dilatations along the bronchi; the bronchi between the saccules are relatively, if not actually, stenosed. The lung tissue adjacent to the bronchitis is involved by an interstitial peribronchitis, and the resulting fibrosis and dilated bronchi do not yield readily to collapse, though improvement does occur from the immobilisation associated with it. When the pathological changes are advanced, therefore, collapse by thoracoplasty is insufficient unless such collapse is very nearly complete. Artificial pneumothorax is an alternative, but it is generally impossible to secure in adults owing to the formation of adhesions. If practicable, it may be effective; but it has to be maintained. Thoracoplasty should be extensive and should be done by the subscapular-paravertebral technique; it has the advantage of maintaining a permanent collapse. Phrenicotomy is useful in slight cases, but as a general rule it has to be combined with other methods.

---

[1] Report on the First Results of Laboratory Work on Malaria in England By S P James M D, Lieut Colonel, I M S (ret) Assisted by P G Shute Laboratory Assistant, Ministry of Health Publications of the League of Nations. III Health Geneva 1926

[2] Vol v, pp 293

[1] Bull et Mém. de la Soc Méd des Hôp de Bucarest January, 1926

PUBLIC HEALTH AND MEDICAL PROFESSION IN OVERSEA LEGISLATION

THE latest volume of the *Journal of Comparative Legislation* contains summaries of the laws passed during 1924 in the British Isles and the Dominions overseas. From this bird's-eye view it is possible to see what progress has been made lately by British legislatures in matters affecting public health and the medical profession. Southern Rhodesia took advantage of its new status as a colony to pass a comprehensive Public Health Act largely based upon the law of the Union of South Africa. The Act declares the functions of the Public Health Department to be to guard against the introduction of disease into the colony, to prevent, limit, and suppress infectious and contagious diseases, to advise and assist local authorities, to promote and carry on research, to prepare and publish reports, statistics, and other information, and generally to promote public health. The Minister obtains wide powers of making regulations and is given the assistance of an advisory board. Quebec and Saskatchewan have also passed public health measures, the central authority in the latter province being empowered to prohibit, for such period as is deemed advisable, the holding of public meetings or gatherings in case of an epidemic, or threatened epidemic, and upon request of the local board of health or medical officer. Manitoba has passed an amending Act which repeals the requirement that small-pox cases be removed to isolation hospitals; other sections deal with fumigation, the entering of sick-rooms with the permission of the health officer, the duty of occupants of “placarded houses,” permits to go about one's usual vocation, and the cleaning of rooms and clothing after cases of communicable disease have occurred. Alberta has re-christened its Insanity Act, which in future will be called the Mental Diseases Act, and has changed its “asylums” into “hospitals.” The superintendent is authorised (*a*) to admit to hospital and detain for examination and treatment such person as he may deem proper; (*b*) to order a patient's removal from one hospital to another; (*c*) to discharge a patient who no longer needs treatment; and (*d*) to release patients upon probation if satisfied that the patient will during the necessary period be properly looked after by relatives and friends. Any resident in Alberta who needs, or is believed to need, treatment for mental diseases may be admitted to hospital (*a*) by voluntary submission to treatment, (*b*) by medical certificate, or (*c*) by warrant of the Attorney-General. Anyone who believes himself to need treatment may voluntarily apply for admission and may be received and detained. There is machinery by which two legally qualified medical practitioners may certify that they have specially examined a named patient and that he should be confined in a hospital; on these certificates being submitted to and approved by, the superintendent, the patient may be removed to hospital without any further or other authority. Drug addicts are to be deemed persons in need of treatment such as is provided in a hospital, and the provisions of the Act relating to insane persons are made applicable to addicts. Bermuda has authorised the appointment of a director of the medical and health department at a salary of £1000 plus travelling expenses from and to the United Kingdom.

Amongst enactments relating to medical practitioners a New Zealand Act contains important provisions. The original Act of 1914 gave the holders of certain “foreign” diplomas an absolute right to registration, subject to certain conditions as to reciprocity. In future the registering authority may require the holder of a “foreign” diploma to pass an examination in medicine and surgery prescribed by the University of New Zealand; this condition may apply even if the applicant is registered in the United Kingdom, provided that his registration in the United Kingdom is by virtue of such “foreign” diploma. The new Act also provides for removing names from the register of New Zealand where persons have been registered there on the strength of outside qualifications, and where they have been removed from the registers of their original countries on grounds of misconduct. There is a right of appeal to the Supreme Court against such removal. The Medical Council of New Zealand, which is the registering authority, is given new disciplinary powers in cases of “grave impropriety” or “infamous conduct in a professional respect.” If the conduct is not regarded as so grave as to render removal from the register necessary in the public interest, the Council may impose fines or suspend from practice, but the suspending order is not to exceed a period of 12 months nor can it be made without the consent of the Attorney-General. There is a right of appeal to the Supreme Court against all orders imposing penalties. Lastly, a medical practitioner who has been temporarily detained in a mental hospital must not resume practice without first obtaining a licence from the Medical Council. New Zealand has also passed a Masseurs' Registration Amendment Act containing an elaborate definition of “massage,” definitely declaring that “chiropractors” are not entitled to be registered as masseurs. New South Wales has established a Board of Veterinary Surgeons; practice as a veterinary surgeon is to be restricted to persons registered under the law, and registration is to be confined to persons who satisfy the Board of their qualifications, good fame, and character. Under another Act there is to be a Nurses' Registration Board of New South Wales with powers to arrange and hold examinations, to register qualified nurses, issue certificates of registration, and remove or suspend from the register any nurse guilty of misconduct. The general provisions are not unlike the English, Scottish, and Irish enactments of 1919. Existing nurses, if they satisfy the Board as to their qualifications, may be registered. After 12 months from the commencement of the Act no one may assume the title of nurse unless registered, nor may any registered nurse act, except in cases of urgency, in any capacity in which she is not registered.

Other enactments in these summaries of overseas law-making (which the Society of Comparative Legislation annually publishes) deal with matters which have their bearing upon public health and their interest for the medical profession. The State of Victoria, for instance has dealt with the diseases of animals and with traffic in carcasses, the Irish Free State with agricultural produce—eggs and butter, and Northern Ireland with the marketing of eggs; while New South Wales has passed a Plant Diseases Act to protect plants and fruit from diseases and insect pests, with wide powers of declaring quarantine areas, inspecting infested districts, and destroying infected plants These are but a fraction of the general wealth of information on all topics which a study of comparative legislation reveals That study is particularly interesting when it shows, as in the case of the New Zealand legislation concerning medical practitioners discussed above, how far the laws of the home country, often attacked by critics, have been adopted and extended in progressive democracies elsewhere

---

THE TRANSMISSION OF KALA-AZAR

The Indian Research Fund Association has published a memoir [1] which embodies the report of the Kala-azar Commission in India and contains numerous other papers, including those of the Kala-azar Ancillary Inquiry The work done and the results achieved are so important that it is necessary to say something of the Commission's constitution It was formed in 1924 and has worked in conjunction with the ancillary inquiry, which was staffed by the Calcutta School of Tropical Medicine, the object of the two bodies has been to make a general survey of kala-azar in India, more especially paying attention to the manner in which the disease is transmitted The Commission consisted of Lieut-Col S R Christophers (director), Major H E Shortt, and Mr P J Barraud, while the members of the ancillary inquiry were Major R Knowles, Dr L E Napier and assistant-surgeon R O A Smith The conclusions at which the Commission arrived are now widely known, and the implication of the sandfly (*Phlebotomus argentipes*) as the transmitting agent are manifestly of far-reaching importance It is obvious that the work has been done with great deliberation and that the conclusions are mature The bed bug was given full consideration as a possible vector but when carefully weighed in the scales of evidence it was found wanting, and so has been exonerated In the same way, chiefly on the basis of work done by Mackie in Assam in 1915, the common louse has been excluded The papers are prefaced by an excellent introduction by Colonel Christophers, in which he surveys previous investigation into the transmission of the disease, and whets the reader's appetite for the more detailed account in the report The description of the geographical distribution of kala-azar is as interesting as it is instructive One of the most striking finds of the ancillary inquiry is the fact that no less than 25 per cent of sandflies fed on kala-azar patients became infected with leishmania flagellates in spite of the fact that in the patient's peripheral blood stream the parasites are always apparently very scanty indeed The infection manifests itself in the production of masses of leptomonas forms in the pharynx of the sandfly The parasite of kala-azar should therefore be known as *Herpetomonas donovani* The Commission found it difficult to recognise this sandfly as an efficient vector, for the reason that infected flies seem in the normal course to die after oviposition, within five days of their being infected none the less, so strong is the evidence of implication that it is considered that "for the present the sandfly must be held to be the probable transmitter" The written matter of the memoir, as we have indicated, is of great interest, and the numerous illustrations and diagrams which are scattered throughout the volume make it for all time a mine of information upon the anatomy and biology of phlebotomus in India The work done by the inquiry Commission will have well repaid the Indian Government for its energy and enterprise, and it is indeed gratifying to announce that certain conclusions, the promise of which is carefully guarded, have been reached The devoted band of workers concerned are to be cordially congratulated on the consummation of their labours

---

[1] Indian Medical Research Memoirs, No 4 Thacker Spink and Co, Calcutta (Obtainable from W Thacker and Co, 2, Creed-lane, London, E C 4) Pp 288 R 8 8 or 11*s* 6*d*

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CLXXXI

TREATMENT OF PERSISTENT HICCUP

Hiccup is due to a spasmodic contraction of the diaphragm, causing an abrupt inspiration which is cut short by a sudden closure of the glottis

Causation

The causes of persistent hiccup are manifold. Nothing is more exhausting to the patient, or more capable of making life a misery, or dying a torment than persistent hiccuping, after operation no symptom is more difficult to allay, or more painful A careful consideration of the source of the irritation will go far to promote successful treatment Very commonly the centre of irritation causing the spasm is below the diaphragm

Subdiaphragmatic Conditions—Distension or overloading of the stomach is a common cause of troublesome hiccups The effect of alcohol in its production is proverbial Hiccup may occur in association with abscess of the liver irritating the under surface of the diaphragm, similarly new growth in this situation may also cause the symptom, which is also met with in cirrhosis of the liver Peritonitis of the upper part of the peritoneal cavity, including subdiaphragmatic abscess, sometimes causes the spasm

Pleural Conditions—Irritation of the pleural surface of the diaphragm, such as is set up by diaphragmatic pleurisy, or an empyema, is often a cause Occasionally hiccup is produced by infiltration of a new growth in this area, arising perhaps at the lower end of the œsophagus or by metastasis from some other place.

Phrenic Irritation—Direct irritation of the phrenic nerve as a cause is rare, but irritation may be set up indirectly by new growths of the mediastinum or enlarged glands at the root of the lung Such lesions much more commonly cause paralysis of the phrenic nerve

Central Causes—Very often hiccup is a most troublesome symptom in uræmia owing to poisoning of the medullary centres It may be met with in typhoid fever in this way Cerebral irritation set up by a hæmorrhage or a tumour may cause persistent hiccuping A very intractable and persistent form was often met with at the time of the influenza epidemic and gained the name of "hiccuping 'flue'" In all probability the cases were mild forms of encephalitis lethargica, and the symptom was not uncommon in well-marked cases of the disease

Finally, hiccup may be purely a functional phenomenon associated with an hysterical condition

Simple Measures

As regards the milder cases one can hardly do better than quote the famous passage in Plato's Symposium It was the turn of Aristophanes to make a speech, "but either he had eaten too much or from some other cause he had the hiccup, and was obliged to change turns with Eryximachus the physician" Said Eryximachus, "Let me recommend you to hold your breath, and if after you have done so for some time the hiccup is no better, then gargle with a little water, and if it still continues, tickle your nose with something and sneeze, and if you sneeze once or twice, even the most violent hiccup is sure to go" The treatment was successful, Aristophanes said a little later, "the hiccup is gone, not, however, till I applied the sneezing and I wonder whether the harmony of the body has a love for such noises and ticklings, for I no sooner applied the sneezing than I was cured"

To such simple measures in the milder cases may be added the trick of drinking from the wrong side of a glass, which naturally causes stretching and drawing in of the epigastrium The arms may be kept held above the head for a few minutes, or the knees drawn up and the thighs flexed on the abdomen, so as to cause pressure on the epigastrium, this posture being maintained for five or ten minutes Firm pressure with the hand on the epigastrium for a few minutes may be effective No doubt an important factor in curing the attack is getting the attention of the individual fixed on something other than the expected hiccup

In the more persistent cases such simple remedies fail and more potent methods must be tried

Counter-irritation

Pressure on the eyeballs or on the supraorbital nerves may be effective, especially in an hysterical case A blister may be raised in the sensory area of the third and fourth cervical nerves at the root of the neck just above the clavicle Steady traction on the tongue for one or two minutes may be successful A mustard plaster may be applied to the epigastrium for 10 or 15 minutes, or mild faradism used over this area For a person who can stand it, a cold shower bath may cut short an attack of hiccuping Direct pressure may be tried over the phrenic nerve 2 inches above the clavicle at the outer border of the sternomastoid or light massage given at this spot

Where basal pleurisy is present a tight band of strapping round the lower ribs applied in expiration may be very effective

Gastric Cases

If the cause of the trouble is in the stomach carminatives are useful A drachm of spirit of chloroform may be given and repeated every four hours, or a teaspoonful of sal volatile in a little hot water Five to ten minims of the tincture of capsicum in a little water has proved efficacious Five minims of the spirit of camphor may be given in milk or on a lump of sugar Five minims of turpentine in a capsule is worth trying If there is marked dilatation of the stomach the attack may be relieved by passing a stomach-tube and washing out the stomach with a 2 per cent solution of sodium bicarbonate This is, however, of no use in cases in which the cause is other than gastric Patients whose hiccups are milder, are associated with indigestion, and occur after meals should be cautioned against eating too much or too quickly, for them an acid and bitter mixture is useful, or alkalis if they suffer from acidity

Central Causes

In toxæmic conditions such as uræmia, treatment of the cause will naturally lessen the tendency to hiccup, but it may not be possible to combat the cause rapidly, and the symptom may persist obstinately even in those cases in which surgical treatment of the underlying condition is carried out The symptom must be treated empirically, there are a variety of drugs which may be tried In a persistent case it is advisable to withhold all solid food

The following remedies have proved useful —

1 Atropine hypodermically, gr 1/100, to be repeated in four hours if required, or tincture of belladonna ♏ x every four hours Benzyl benzoate may be given in a 20 per cent alcoholic solution, 20 minims in milk, or as an emulsion every two hours

2 Sedatives may be tried These include hyoscine (gr 1/100), chloral, tincture of cannabis indica, the bromides, antipyrine, a large dose of sodium bromide may be administered per rectum Hoffmann's anodyne may be given, a drachm in iced water A hypodermic injection of cocaine may be tried (gr 1/30–1/25) Lastly, and by no means least, morphia is most likely to be successful in a severe case and may well be combined with atropine Sometimes a few whiffs of chloroform will check the spasm, especially in a functional case

3 In an obstinate case of obscure origin an emetic may bring relief, a hypodermic injection of apomorphine (gr 1/20–1/10) should be given

4 A capsule of amyl nitrite may be broken in a piece of wool and sniffed A tablet of nitroglycerine (gr 1/100) may be given every four hours, or the liquor trinitrini used in repeated doses, starting with half a minim and increasing the dose by this amount every three hours, till two minims at a time are given.

5 It may be necessary as a last resort to consider the injection of novocaine into the phrenic nerve at the root of the neck Both nerves must not be treated on the same day

Such drugs as those named above may prove effective, if one fails another must be tried The more simple methods will suffice in the milder cases, especially where there is a functional element Hypnotism even has been known to have success But where hiccup plagues the last stages of an incurable condition, morphia alone, in all probability, will bring relief and the euthanasia it secures should not be withheld

C F T EAST, B M Oxf, M R C P Lond,
Junior Physician, King's College Hospital

Special Articles.

ROYAL SANITARY INSTITUTE
JUBILEE CONGRESS

(*Concluded from p 92*)

Sir George Newman, in his presidential address on July 6th to the Section of Sanitary Science and Preventive Medicine, submitted that factors other than sanitary science—good roads, political power, economic development, social customs and habits—have played a large part in bringing about the present condition of the public health After referring to the work of non-medical men who had advanced medicine, he went on to discuss propaganda, in which, he considered, the newspapers were playing an invaluable part

Dr W A Daley (M O H, Hull) and Dr A T Nankivell (M O H, Plymouth) read papers on propaganda in public health, and Dr G Clark Trotter (M O H, Islington) detailed methods suitable for small as well as large authorities Sir Thomas Horder advocated cremation, Dr John Poynton and Dr. Carey Coombs read papers on acute rheumatism, and Dr T Izod Bennett discussed the intestine in relation to the occurrence of chronic rheumatism

Port Sanitation

At the conference of port sanitary authorities Sir George Buchanan dealt with the International Sanitary Convention to be presented for ratification to the 53 Governments represented at the recent Paris meeting In the new Convention the requirements for clearing rats out of ships had been modified, inspecting officers could be empowered, if satisfied, to exempt ships from being so treated at the end of each six months Ports were not to be formally declared infected if a certain number of cases of dangerous infectious disease had occurred; but, by way of compensation, efforts were to be made to increase means whereby countries might obtain intelligence regarding the prevalence of infectious disease in all parts of the world

Dr A S M Macgregor (M O H, Glasgow) asked that port medical officers of health, when forwarding the names and addresses of contacts to the medical officers of health at the contacts' destination, should be required to state the degree of contact between the said passengers and the case of infection

School Hygiene

Lord Eustace Percy (President of the Board of Education), who presided over the Section of School Hygiene, said that the movement of the population from the centre to the outskirts of large towns made it possible to build the ordinary schools on open air lines The recent development of orthopædic schemes should eventually reduce the number of schools for cripples, and he expected much from the extension of physical training and of outdoor games for school-children It was the ideal of some that the child should be admitted as early as possible in its life to some form of school, but he thought that parents should endeavour to become independent persons, who should regard themselves as adequately fitted by training and knowledge to discharge their duties

Opening a discussion on the teaching of physiology in schools, Prof Winifred Cullis (Royal Free Hospital) said that medical students starting their work had a passion for disease, whereas they ought to have a passion for health The ideal was that general biology should be taught in the public elementary schools, emphasis being laid on the physiological or functional side The public, however, might consider that there was not time for exhaustive teaching of biology, and so stress should be placed on physiology The teaching of physiology could be educational as well as instructive Hygiene as taught in schools at present was not sufficiently based on physiological principles The text-books were unattractive and dwelt too much on uninteresting structure, such as connective tissues A suitable work for children must include information about reproduction

Dr Leonard Hill agreed that attention was concentrated too much on structure, even in the medical curriculum an excessive amount of anatomy had to be learnt He wanted school-children to breathe air with 5 per cent of carbon dioxide, so that they might see the results for themselves The athletes of a school should compare the results of running races with and without the help of oxygen

Councillor Julyan (Poole) thought the actual practice of school hygiene deplorable, children were to be given these excellent lessons in dark, ill-ventilated schools

Dr Dunstan Brewer (M O H, Swindon) said that future school-teachers, during their training, ought to learn the meaning of biological science and the possibility of its application to hygiene

Colds and Catarrh in Schools

Dr Clive Riviere said that colds and even influenza, which might have very serious consequences, were often considered trivial complaints by the public, people had great difficulty in realising that they themselves were centres of infection The avoidance of infection was impossible, all that could be done was to keep fit, employ radiant heat for warming, keep the air in rooms moving and warm the floor. Parties for school-children should be held not at Christmas but in the summer, and, as far as possible, in the open air The removal of tonsils and adenoids and the prevention of mouth-breathing might get rid of a few carriers After an atttack some children acquired greater immunity; in others it was lessened Prophylactic vaccine might give protection in some cases

Dr. A I Simey (Rugby School) said that preparatory and girls' boarding schools were less troubled than boys' boarding schools, in the former group there was more supervision, in some of them the temperature was taken daily for the first few weeks of term, and any suspected child isolated Infection was not endemic in schools, and a term of epidemic prevalence was invariably followed by one of comparative freedom Season and weather had very little to do with it

Dr L R Lempriere (Haileybury College) had ascertained that 25 per cent of the admissions to his school sanatorium were caused by catarrhal conditions Children should be taught to blow the nose properly, and the handkerchief should be held well away from the nostrils The effects of vaccines were sufficiently encouraging to merit further trial

Dr E B Morley (Mill Hill School) pointed out that the vaccines used were made from organisms which only produced secondary effects and that there was a great difference in their ingredients

A paper on open-air schools was read by Dr M D Horst (M O H, Leiden, Holland)

Hygiene in Industry

Addressing the Section of Hygiene in Industry Mr J R Clynes, M P, said that the conduct of educational and recreational activities should be left to the workers themselves Hygienic improvement in factories and workshops had done much, but wholly mistaken ideas as to motives had impeded the movement The workers suspected charity or thought that the work was being done purely in the interest of the employers, and those keen on trades-union interests thought that the more humane standards introduced would weaken self-defence as expressed in trades-union methods

Dr Thomas Watts, M P, expressed disappointment at the attitude of workmen to welfare work Only a few months ago, when visiting a cotton-mill, he had found that the workpeople would not avail themselves of the excellent cheap dinner provided at the canteen

Councillor Price (Hemsworth), in welcoming the Miners Welfare Act, mentioned the difficulty of getting land for purposes of recreation More safety appliances were wanted in mining, in 1924, out of 3000 men and boys employed in his mine no less than 1141 were injured in the pit and had to be treated at the colliery hospital

Dr H P Newsholme (M O H, Croydon) said that monotonous occupations diminished the alertness of the workpeople, their thoughts strayed while working, and a sense of grievance might creep in He was not in favour of too much specialisation of the workman's task

Prof E L Collis (Wales) opened a discussion on

The Future of the Factory Medical Service

There was not, he said, at present a full factory medical service The appointment of certifying factory surgeons, which began in 1844, had not proved adequate for the work to be done Prof Collis mentioned a large coal and iron works in the United States where 383 whole-time officials cared for 23 000 employees, he thought that the system of appointed doctors would prove the more satisfactory alternative for this country He did not think the local authority—by means, for instance, of an extended school medical service—could very well do the work for many workpeople lived outside their geographical area and could not be looked after during convalescence Again, the rates should not be spent to benefit only one section of the community But, recognising that the local authority desired to see that people employed in their areas were healthy, he thought that they might with advantage supervise any work done on behalf of the workpeople

Lieut -Colonel F E Fremantle. M P, maintained that the present system of carrying on factory medical work was not in accordance with the ideals of the Ministry of Health Act The Ministry of Health—one of the largest of all the ministries—could not take on more work and improvement in the service most be hoped for under the Home Office He thought that the system of appointed doctors could not be universal, as a large number of employers could not afford to appoint doctors Those appointed must work under supervision, and it was the function of governments to fill up the gaps The minor local authorities might not do this properly, and it should be done by the major local authorities He saw no force in Prof Collis's geographical considerations or his contention that the rates should not be spent on only one part of the community The milk industry had been benefited by money paid out of the rates, and public control must not be ruled out because it benefited only one part of the community The rights of those of the certifying factory surgeons who had proved their worth should be safeguarded, the Home Office medical staff should be increased and they should be independent of lay control, just as were the medical staff of the Ministry of Health with their right of direct access to the Secretary of State

Prof F E Wynne (M O H, Sheffield) agreed almost entirely with Prof Collis The desire for a real coordination of public health work at the centre and locally which had given birth to the Ministry had not been realised He objected to the work of looking after workshops being taken from sanitary inspectors The staff of the medical officer of health should control the hygienic conditions of factories as well, the present distinction as to which was a workshop or a factory was artificial and ludicrous

Dr Vernon Davies considered that the system of the appointed doctor would be unsatisfactory, he would be too dependent on the employer He agreed that the sanitation of factories was a duty of the local sanitary authority

Colonel P S Lelean (Edinburgh) said that applied physiology could provide the 3 (or possibly 5) per cent increase in output which would be such an enormous gain to industrial efficiency The Usher Institute of Public Health in the University of Edinburgh wished employers to send their problems to the Institute, but it had found difficulty in getting into touch with employers

Sir Thomas Legge (Home Office) said that Prof Collis, influenced by the success of the Silicosis Fund, had declared in favour of the appointed doctor but his arguments had been completely answered by Dr Vernon Davies Certainly, however, the appointed doctor under the last Factory Bill had to satisfy the workmen Ninety-five per cent of the medical services rendered to workmen were carried out under the National Health Insurance authority, and the work of the certifying factory surgeon should be linked up with that done under the Insurance Acts

Health Administration and Poor-law Reform

In the Section of Medical Officers of Health the President, Dr G F Buchan (M O H, Willesden), discussed the optional size of the unit of health administration A system of block grants, he thought, would stimulate the expansion of health services

Dr T Eustace Hill (M O H, Durham C C) referred to the lack of cooperation of boards of guardians with local health authorities He was in favour of the transfer of the personal services from county councils to the whole-time rural medical officers of health who at present had not sufficient work to keep them interested

Dr H B Brackenbury (British Medical Association) pointed out that health administration was not yet coordinated centrally or locally Local authorities could easily cope with the extra work which it was proposed to transfer to them He agreed that possibly the National Health Insurance officials did not like the proposed transfer, they did nothing to counteract the impression among those insured persons who attended meetings that such a transfer would mean pauperisation of the insured person The present financial basis of National Health Insurance administration would not necessarily be altered The mixed functions of the Poor-law guardians—health, education, and assistance—must be separated, and not transferred en bloc to a new committee of the local authority Topography and historical associations necessarily had to be considered in fixing the boundaries of local administration units, and the county and the minor authority must not both have jurisdiction on health matters in the same unit

Mr H L Eason (Guy's Hospital) said that in any municipal hospital the service provided ought to be of the same standard as that of voluntary hospitals

Dr Spencer Mort (Edmonton) described the North Middlesex Hospital and detailed a scheme for a public hospital service

Dr A E Cope (Poor-law Medical Officers' Association) welcomed the proposed transfer The Poor-law medical officer, he said, was at present ignored by boards of guardians and had no opportunity of making his voice and views heard at their councils The parish doctor was treated with contempt by everyone If they were to come into closer contact with the medical officers of health, he felt sure that their views would receive consideration

Dr J Fenton (M O H, Kensington) pointed out that in metropolitan boroughs no less than five health bodies had functions The consequence was overlapping and duplication of the work and the best results would only be got when an individual's health was dealt with by one local authority throughout his life The borough medical officer could not envisage the health of his area as a whole nor could the county medical officer The work now done by the London Insurance Committee and the non-residential institutional work now done by the Poor-law authorities (including vaccination) should be transferred to metropolitan borough councils The London County Council, under the scheme put forward by the Minister of Health, was to control no less than 70,000 beds, the size of which task could be judged when it was remembered that there were only 13,000 beds in all the voluntary hospitals of London The London County Council would remain the supervising and coordinating authority for health services generally Central executive administration over the metropolis must of necessity be bureaucratic, the London County Council should act as a provincial board of health for London, thus relieving the Minister of Health of much of the detailed work now falling upon him

Mr R H P Orde (British Red Cross) said that the only real fault of the voluntary hospitals was that there were too few of them The voluntary hospital had tacitly confessed its inability to cope with the situation and the State must fill the gaps In the newer parts of the United States of America there were only municipal hospitals, in others the municipal hospital ranked, if anything, above the voluntary hospital

Demonstrations and Visits

Other subjects considered by Sections included personal and domestic hygiene and the housing of the poor An evening address was given by Prof C E A Winslow (Yale) on the appraisement of health administration

A demonstration in the hygiene laboratories of the Royal Army Medical College was one of the most interesting features of the Congress An admirable demonstration was given of the Douglas Haldane method of indirect calorimetry by means of which the new British Army equipment was evolved The pack is to be carried high on the back By photographing the movements of a light on the end of a shovel, handled by an expert digger, the most profitable motions in digging have been worked out, and these are now taught to recruits The new army emergency ration, which weighs 20 oz instead of 30, was exhibited It consists of biscuits, pemmican, chocolate, and blocks of tea, which, in the absence of water, can be eaten

Visits were paid to the Port of London and elsewhere, and a number of receptions were held

The Congress was attended by 1850 members 1200 of whom were sent by local authorities

DINNER OF THE CONGRESS

The dinner was held on July 8th at the Hotel Cecil The Duke of Northumberland, President of the Institute, presided, and more than 500 people were present

After the toasts of "The King," the Patron of the Institute, "The Queen and the Royal Family" had been honoured, Dr Charles Porter proposed "The Navy, the Army, and the Air Force" Surgeon-Commander J L Priston said that when some new sanitary measure for the Navy was in question, the success that measure had achieved in the hands of the Royal Sanitary Institute always convinced those who opposed Colonel H P W Barrow said that the Army and the Institute were closely connected in their work. The Parkes Museum was founded in honour of an Army surgeon, and the Institute, like the Army, had helped to train sanitarians Replying for the House of Lords, Lord Burnham regretted that so little use was made of the administrative ability of that House in examining questions of health and local government Lieut -Colonel F E Fremantle for the House of Commons, said that Members were all united in their support of hygiene, but members of the Institute should assist their representatives in the House by their expert advice Sir John Gilmour, Secretary for Scotland, proposing the health of "The Royal Sanitary Institute," said that the Institute, in its 50 years, had done much for sanitation in England, was now active in the Dominions, and latterly had made a great advance by enlisting women and teaching them to help Prof A Bostock Hill, Chairman of the Council of the Institute, in reply, regretted the enforced absence of the Minister of Health, and thanked Mrs Chamberlain for her presence He said that though we had not yet reached the city of Hygeia, as pictured by Prof Kenwood in a recent number of the *Journal* of the Institute, the roads thither had been made more easy for travellers by the Institute's 50 years of work In the old days the poet had said —

> "The cottage homes of England, how fearfully they smell,
> There's fever in the ashpit, there's sewage in the well"

but, to-day —

> "The cottage homes of England, in them we now find health,
> And bright and happy children, who are the nation's wealth"

For the first 25 years of its life the Institute had concentrated on external hygiene, in the next 25 it had begun to think of hygiene in the home, and sought the help of women, seeking also to have the doctrines of hygiene taught to school-children Later its influence spread to the Dominions, some of which were doing better than the mother country—for instance, he had seen how child welfare was progressing in Malaya among the quite ignorant natives, though large rooms were needed to carry on the central work, for the Malay mother always brought with her to the bureau a child, an umbrella, a basket of poultry, and her husband, all of which had to be suitably bestowed around her before she could begin accepting advice He concluded by saying that the Congress with 1800 members, and many foreign delegates, was worthy of the jubilee of the Institute, and owed its success to the work of the staff, especially for the secretary, whose labours for the Institute for 45 years had been recognised by the Patron of the Institute, the King

Returning thanks for "The Delegates," Prof A Castellani recalled the great work for tropical medicine done by Joseph Chamberlain, the father of the Minister of Health, founder of the tropical schools of Liverpool and London Dr G C Strathairn spoke as the delegate from Jamaica Sir Thomas Hughes thanked the ladies present for their attendance at the dinner, and Dr Andrew Balfour proposed the health of the Duke of Northumberland, their chairman The Duke replied that, though proverbially a reactionary, and indeed perhaps on that account, he liked to be associated with those in the forefront of advances and especially with work, like that of the Institute, which was all for the benefit of others

MEDICINE AND THE LAW

Hospital Collections Precautions against Fraud

A GROUP of defendants was charged lately with conspiring to obtain charitable contributions by fraud The prosecution alleged that they made collections at cinemas in various parts of London for the "National Hospital Aid Society," and that considerable sums were obtained, though in no single instance did any hospital or similar institution benefit Some of the defendants it was said had actually addressed the audiences in cinema halls, urging the claims of the society to public support Three young women had been engaged as collectors, but became suspicious and communicated with the police One of these gave evidence at the police-court, according to a report in the *Times*, and explained how she came to be engaged to collect She was told her remuneration would be 5*s* in the £ on what she collected, with travelling expenses She said she was told to collect from door to door and not in the streets, and she was particularly directed not to show her collecting box in the streets The defendants were convicted at the Central Criminal Court and received sentences of imprisonment With regard to street collections it may be of interest to note that the Home Office has recently made fresh regulations superseding the existing code published in September, 1923, though without making marked changes

Under present regulations those responsible for a scheme of street collection must first obtain a permit from the Commissioner of Police They must apply in writing in advance, and must state inter alia the name of the society responsible, the charity or fund, its objects, and its administrative headquarters No collection may be made except on the day and between the hours and in the districts, streets, or places named in the permit Nobody may take part unless with the written authority of the body which holds the permit of the police, this written authority must be produced on demand of a police officer Collectors must be stationary on the footway, not more than two at the same point, and not nearer than 30 yards to the next collecting point Nobody under 18 may collect Collectors must not be accompanied by animals, and must not importune anyone to his annoyance Provision against fraud is made by insisting that all collecting boxes be numbered consecutively and sealed, and that they be delivered to the persons responsible for the application of the money with the seals unbroken Within a month of the collection day the promoters must forward to the Commissioner of Police an audited statement in a prescribed form showing the details of the amount collected, the expenses and the amount distributed to the charity or fund No collector is to receive any payment by way of reward, and no promoter is to have, directly or indirectly, any payment or reward except such payments as are shown in advance on the form of application for a permit The new Home Office regulations differ from those of 1923 in that the Commissioner of Police is no longer authorised to give a permit of a continuous character if satisfied that special reasons justify the grant Nor may the Commissioner any longer authorise special exceptions to the rule that all persons acting as collectors must occupy a stationary position at some point of the footway There are a few minor changes of language, the regulation forbidding the giving of "payment or reward" to a collector, for instance, has been changed into one forbidding "payment by way of reward", it thus is now lawful to make payments to collectors otherwise than by way of reward or to reward collectors otherwise than by payment

With our system of hospitals maintained by voluntary contributions, and with the modern organisation of flag-days and flower-days, some such regulation is essential It is surprising to find that the Home Office did not possess the necessary powers until the passing of the Police, Factories, &c (Miscellaneous Provisions) Act of 1916 Precautions against fraud in hospital collections must be carefully framed and rigorously enforced The public must have no misgivings in its generosity

Death due to Overdose of Sleep-inducing Drug

In investigating a death apparently due to drug-taking, a coroner has occasionally suggested that all narcotics should be brought within the Dangerous Drugs Acts If this suggestion has been deemed a little too sweeping, there seems to be at present an unfortunate uncertainty whether or not particular drugs and preparations are within the Acts At a recent inquest evidence showed that a lady was found unconscious in an open boat, and died next day without recovering consciousness She had suffered from sleeplessness, a London practitioner had prescribed "dial" tablets for her a few months ago, and her death was clearly due to a large overdose of this hypnotic preparation Evidence was given that dial was a proprietary medicine, of the same type as veronal, and was not included in the British Pharmacopœia The foreman of the coroner's jury pertinently asked if this drug could be obtained without a doctor's certificate The witness, a medical practitioner, replied that he had never used or seen the drug himself; he believed some kind of doctor's note was necessary before it could be supplied, but he could not definitely say. An open verdict was returned It was clear that the drug was self-administered, but there was no evidence of the state of the deceased's mind No blame was or could be attached to the doctor who had prescribed this sleep-inducing drug

The Ministry of Health Committee instituted upon Morphine and Heroin Addiction dealt with the danger of a patient becoming an addict as the result of medical treatment or self-treatment for relief of physical pain caused by asthma, insomnia, overwork, anxiety, and other causes of mental distress The report contained a section on precautions in the use of the drugs in ordinary medical practice advising that the quantity supplied or ordered at one time should not ordinarily exceed what will be given before the patient is seen again The Committee further advised that the patient should not be informed of the name of the sedative employed, they thought it particularly inexpedient to hand over to the patient original packages containing morphine tablets or the like which bear on their label a clear statement of the exact amount in each tablet; and they strongly deprecated hypodermic administration of the drug by the patient to himself This excellent advice in relation to morphine and heroin addiction has a somewhat remote application to sleep-inducing preparations in cases where there is no reason to suspect or apprehend addiction If the law intends to restrict the prescription of sleep-inducing drugs by the machinery of the Dangerous Drugs Acts it must be careful to make itself clear In the recent painful incident the victim had suffered from insomnia; her health had, it seems not been so good since she lost her husband last year She went to the seaside for a change. While there she hired a boat ostensibly for a fishing expedition She took an overdose of a preparation to which a doctor had recommended her to have recourse Her act was either an accident or a deliberate impulse to take her own life No professional care can ensure that these unhappy cases will not occur.

IRELAND.

(FROM OUR OWN CORRESPONDENT)

Irish Tuberculosis Officers in England

SOME months ago the Department of Local Government and Public Health of the Irish Free State made arrangements with the Ministry of Health in London for a small number of selected county tuberculosis officers to spend a few months in public health work with medical officers of health in England, in the hope that they might thus obtain a wider outlook in public health work and some knowledge of administration methods Several of these visitors have now returned to Ireland, and have submitted reports to their local authorities They all speak in the most grateful terms of the pains taken by the Ministry of Health and by local medical officers of health to make their period of pupilage as valuable as possible Care was taken to show them the several aspects of health work in different districts, rural and urban A perusal of the reports shows moreover, that the main object of the visits to England has been gained in that the officers have returned with their imagination quickened and their outlook broadened While they have hardly had time to become familiar with the details of administrative work, they have grasped the general principles on which administration is based The courtesy shown by the Ministry of Health and the medical officers of health concerned towards our youthful health service is deserving of grateful mention

The Milk-supply in Ireland

For some time the newspapers have been drawing attention to the lack of cleanliness of the milk-supply of Dublin and other cities of Ireland The bacteriological reports of Prof J. W. Bigger, Dr. D. Houston, and others, have shown a dangerously high bacterial content and a frequency of tubercle bacilli in milk as exposed for sale The Minister of Local Government and Public Health has now appointed a committee to inquire into the question and this will consider whether the existing regulations relating to the cleanliness of milk are sufficient The medical members of the committee are Mr. Matthew J. Russell, medical officer of health of Dublin, and Deputy T. Hennessy. Both are Fellows of the Royal College of Surgeons in Ireland

Honorary Degree for Sir Berkeley Moynihan.

At the Summer Commencements in Dublin University the degree of M Ch was conferred honoris causa on Sir Berkeley Moynihan

---

UNITED STATES OF AMERICA.

(FROM AN OCCASIONAL CORRESPONDENT.)

New Medical Practice Act

THE State Medical Society of New York is to be congratulated on the fact that after more than a dozen years of hard work it has succeeded in securing from the legislature an amendment to the public health law in relation to the practice of medicine. Under the old law there have been no means of bringing to justice those who are not properly qualified or licensed to practise medicine, and the State has been much plagued with quacks The old law puts the responsibility of exposing such individuals upon the County Medical Board a body that was naturally disinclined to play detective and police officer. The new law makes it necessary for all physicians to register annually:—

> "Any licensed physician who fails or neglects to register by Jan. 1st of any year . shall be required to pay for registration in addition to the fee of two dollars, a further fee of one dollar for each 30 days or part thereof, that he is in default and any licensed physician who wilfully refuses or omits to register hereunder and engages in practice shall be subject to a civil penalty of one dollar for each day that such practice shall continue."

Violations of the law will come into the province of the Board of Medical Examiners, who will employ inspectors to investigate charges; they will be supported in their prosecutions by competent lawyers. Only those licensed by the Board will be allowed to practise medicine or call themselves "doctor" Osteopaths are licensed but to obtain a licence an osteopath must prove that he has studied osteopathy for not less than three years under conditions satisfactory to the regents, or if his training has been done after 1910 he must have studied for more than four years in an approved college. An osteopath is not allowed to administer drugs or to perform surgical operations which involve the use of instruments.

An interesting innovation is the provision for the formation of a committee on grievances This comprises four members nominated by the State Medical Society, two members nominated by the State Homœopathic Society, and one member nominated by the osteopaths as well as three members "of conspicuous professional standing" appointed by the regents To this professional body are addressed all complaints of unprofessional conduct The findings of the committee are passed on to the regents, in whose hands are vested disciplinary powers.

The new law should do much to raise the standards of medical practice in New York and will doubtless be a model for legislation in other States

Medical Publicity

A good deal of pressure is being put upon medical societies in this country to undertake corporate advertising. The dangers are obvious, and yet there is something to be said for meeting the noxious publicity of fraudulent vendors of patent medicines with the publicity of medical truth One of the latest societies to enter upon an extensive campaign is the Jefferson County Medical Society in the State of Texas The campaign will last a year and each week the advertisers will make use of 60 inches of space in two papers (morning and evening) with a combined circulation of about 50,000 The campaign has the approval and endorsement of the State Society In experimenting with advertising material it was found that attempts to extol the regular physician, to compare him favourably with the irregular practitioner, or to plead for payment of his bills, were not received well either by doctors or by the public The present campaign attempts to explain what medicine has done and can do for the protection and recovery of health, and the advertisements seem to be acceptable to both parties

MEDICAL INSURANCE AGENCY.

A MEETING of the committee of management of the Medical Insurance Agency was held at the House of the British Medical Association on July 9th, Sir Humphry Rolleston presiding

It was reported that Dr R A Gibbons had been selected to represent the Medical Insurance Agency on the Council of Epsom College, and he was asked to arrange a meeting between Dr Raymond Crawfurd, the chairman of the Council of the College, and Mr Bishop Harman and Mr Ferris Scott to ascertain in what way the Agency can best be of assistance to the College

Annual Report

The report of the work of the Agency during 1925 was presented by the Chairman, and showed that during the year under review steady progress had been made, and in particular, the number of life and endowment policies issued through the Agency had increased The development of the Agency, said the report, was reflected in the fact that in the past five years the premium income had been doubled while its influence in deciding as to the propriety of claims, with a view to completing satisfactory settlements was more widely recognised Life and endowment policies were issued through the Medical Insurance Agency between 1907 and 1920 to the extent of £416,684, between 1921 and 1925 the annual policies issued increased from £105,500 to £160,935, the total since the inception of the Agency now exceeding £1,000,000 The report indicated, however, that the income of the Agency from this source would not be proportionately greater each year, as a much higher rate of commission was earned on new proposals than on renewals, although the office work involved in looking after a life policy, once granted, was as great in the subsequent years as at the outset

The report showed that more proposals were received in 1925 than in any previous year for motor-car insurance with an accompanying increase in premium income, but as there is a lower premium on the Doctor's Special Policy, introduced through the Medical Insurance Agency and underwritten at Lloyd's, and as this policy is being made use of increasingly, commissions have to be calculated at a lower rate, the insured persons gaining while the Agency showed a decrease in commissions earned A decrease could also be expected, it appeared, under the heading of Employers' Liability, because more medical men were taking out a comprehensive household policy in which domestic servants were included, a gain in one place having thus to be set off against a loss in another The attention of members of the profession had been called, said the report, to the advantage of Sickness and Accident policies, a class of protection which should become more popular with the medical profession

The rebates to medical men since the formation of the Agency have exceeded £22,000, the figures for the last five years being given in the report as follows 1921, £1697; 1922, £2064, 1923, £2069, 1924, £2811, 1925, £2791.

Grants to Medical Charities

The report says · "Grants to medical charities were made during the year 1925 to the extent of 2,000 guineas, making a total since 1910 of £14,395 5s divided as follows Royal Medical Benevolent Fund, £4119 10s, Royal Medical Benevolent Guild, £4148 5s Epsom College, £3318, M I A Girls' Education, £937 10s ; Sundries, £1872

"The distributions to the charities during the past few years have been 1920, £1,015, 1921, £1,965, 1922, £1,595 ; 1923, £1,500 ; 1924, £787 10s, 1925, £2,100 Since rebates exceeding £22,300 have been returned to members of the profession and charitable contributions totalling £14,395 have been made, it may safely be contended that the Medical Insurance Agency is fulfilling successfully two of the functions for which it was formed "

The report included, also, a reference to the large amount of work now done by the Agency in assisting in the choice of policies to meet individual needs, and drew attention to the necessity to medical men not only of insurance policies, but of securing proper settlement of claims A further activity of the Agency was foreshadowed in the closing statement of the report that during the year the Agency had given careful consideration to the terms of a policy to enable medical practitioners to obtain loans from an insurance company for the purpose of partnerships or practices

The report was approved with duly audited balance sheet and accounts for the year ending Dec 31st, 1925 Arising out of the balance sheet Dr R A Gibbons and Dr R A Langdon-Down were appointed to consider the question of the rent for the accommodation received at the House of the British Medical Association and to report to the next meeting of the Committee of Management of the Agency

Five Years of Progress

The following statement of progress made during the years 1921–1925 was submitted to the meeting —

Nett Premium Income for New Insurances and Renewal Premiums for the Years 1921–1925

Class of insurance	1921	1922	1923	1924	1925
	£	£	£	£	£
Life and annuities	15,652	21,556	29,917	33,847	37,924
Increase	3,264	5,904	8,361	3,930	4,077
Motor cars	11,156	12,767	13,517	16,490	16,849
Increase	2,211	1,611	750	2,973	359
Household, fire, and burglary	1,472	1,895	2,445	2,598	2,774
Increase	98	423	550	153	176
Sickness and Accident and Workman's Compensation	1,722	1,864	1,944	2,149	2,694
Increase	126	142	80	205	545
	£	£	£	£	£
Premium income	30,002	38,082	47,823	55,084	60,241
Increase	5,699	7,934	9,741	7,261	5,157
	£	£	£	£	£
Commissions, &c	4,540	5,250	5,408	7,192	7,917

Sickness and Accident Insurance Premiums do not include the very considerable business passed to the Medical Sickness Annuity and Life Assurance Society

---

ROYALTIES FROM PASTILLES—At the Lancashire Chancery Court at Liverpool on June 23rd it was mentioned that since 1908 Liverpool charities have benefited by more than £8000 from the sale of certain throat pastilles invented by Dr John Bark, of Liverpool As a member of the medical profession, Dr Bark declined to take the profits and arranged that his share should go to medical charities, the manufacturers have paid over royalties each year The Court in a friendly action agreed to a scheme whereby the manufacturers would continue to have the rights of manufacture and sale and should pay £270 per annum—this amount to be distributed amongst Liverpool charities

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH

THE following are health statistics for 1925 from a group of boroughs, two of them county boroughs:—

Name of district.	Estimated mid-year population (R. G.)	Birth rate.	Death rates per 1000 of the population: All causes.	Tuberculosis	Cancer	Resp. diseases with influenza	Heart disease	Death-rates per 1000 births: Infant mortality	Maternal mort. from childbirth
Coventry C	133,500	16·3	10·6	1·23	1·14	1·9	1·0	77	4·6
Ealing B	68,410	14·0	10·0	0·76	1·32	1·7	1·5	56	3·1
Cambridge B	59,020	14·1	10·3	0·88	1·44	1·6	1·0	45	1·2
Wimbledom B	58,170	13·0	10·9	0·77	1·54	1·9	1·7	62	0·0
Swindon B	56,880	16·6	11·1	0·90	1·56	1·7	1·8	60	4·2
Eastbourne C B	55,060	12·0	12·1	0·87	1·71	2·1	2·2	45	—

C = City. C B = County Borough. B = Borough.
— = Not given.

Coventry

Dr. E. H. Snell quotes the Registrar-General as stating that at the last census the night population of the city was 128,157 and the day population 134,999, and that 7414 persons enumerated at Coventry worked elsewhere whilst 14,256 enumerated elsewhere worked in Coventry. During 1925 unemployment reached its lowest post-war level.

Dr. Snell thinks the effect of grading "is towards a bettering of the milk-supply." So far the only step taken in the city has been the granting of three licences for pasteurised milk, and the result of sampling has been to show that the number of organisms frequently exceeds the permissible limit. Some progress has been made towards the provision of a public abattoir, and the report reproduces a design by Mr. R. Stephen Ayling, F.R.I.B.A. With slaughter-houses scattered all over the city, as at present, it is estimated that six whole-time meat inspectors would be needed to carry out the new meat regulations.

There were 20 notifications of encephalitis lethargica, with 13 deaths, as compared with 48 notifications and 8 deaths in 1924. Coventry is largely an unvaccinated community; there were 72 cases of small-pox—most of them mild—with no deaths. Sanocrysin has been tried at the sanatorium in the treatment of pulmonary tuberculosis since the summer of 1925 with immediate results that are encouraging. A gynæcologist, Dr. A. J. Ballantyne, has been appointed to attend the antenatal centre once a month, and an average of 21 mothers per session have consulted him. Miss Barratt, the chief health visitor, reports that the long-tubed bottle has disappeared, but that habits change slowly with regard to dummy-teats. As infant protection visitor appointed by the guardians under the Children's Act, she states that during the year 45 children were on the register and that in all cases but one, where the home was not suitable and the child was removed, a high standard of efficiency was attained by the foster-mothers. The reasons given for applications for admission to maternity wards show that many married couples are living in lodgings. The scarcity of houses has also prevented the closure of unfit houses. A preliminary town-planning scheme was adopted a year ago.

In his school report, Dr. Snell points out that the visiting of the pre-school child needs to be extended and to be linked up more closely with school medical work. Arrangements have been made for the dental treatment of children of 3 to 5 years old at the school clinic, and for the record-cards of children seen at the centres to be passed on to the school clinic. There are still a certain number of parents who absolutely refuse to allow their children to wear glasses. The school dentists report that much of the benefit of the treatment given is lost through their inability, with the present staff, to treat the age-groups over 9 years. The residential open-air school at Corley Camp has accommodation for 15 boys and 15 girls. The camp is on high ground five miles from the city. Ten of the cases were sent because of rheumatism and chorea, and, as a rule, these cases did exceedingly well. Special attention has been given to chorea in the schools. The school medical staff was invited by the Board of Education to take part in special inquiries, but the staff was too small to undertake any such additional work.

Ealing

Dr. Thomas Orr reports that medical practitioners in the district have been asked to help in the education of the public concerning cancer, and to promote its early diagnosis and treatment. Every facility for scientific diagnosis and the help of consultants are available at the King Edward Memorial Hospital. During the last five years 792 houses have been built by private enterprise and 208 by the town council. The rental of the recently-built municipal houses varies from 15*s.* 6*d.* to 22*s.* 6*d.* per week and working-class people can, as a rule, only pay this by sub-letting. During 1925 the council began the erection of 250 more houses. The general standard of housing is good, but there are three small areas which are made slum-like by bad tenants. At least 80 per cent. of the milk supplied in the district is pasteurised by the "positive holder" method and bottled. A proportion of the remainder is pasteurised by the "flash" method. Dr. Orr hopes much from the proper administration, especially by county councils, of the new Milk Act and Tuberculosis Order. He points out that pasteurisation is really a confession of failure.

The meat regulations have been well carried out in Ealing, but Dr. Orr points out that protection of cooked meat from dust and flies is much more important than protection of raw meat, and he hopes that similar regulations will be made to apply to all classes of cooked meat. A gynæcologist, Dr. J. W. Bell, has been appointed for antenatal consultations and his advice or assistance is at the disposal of medical practitioners in cases of abnormal or complicated labour. The Ealing day nursery has been closed owing to the small demand. There is complete coöperation between the maternity and child welfare centre and the school clinic, and also in the arrangements made for the teaching of infant care and management to the elder girls in the schools. An outbreak of pemphigus neonatorum occurred in the maternity hospital in November, fortunately of a mild type. The hospital was closed and disinfected, but after reopening there was a recurrence and cases kept appearing up to April, 1926.

A table in the school report shows great improvement in the children's teeth since 1915, although in 1925 there was a slight set-back for which it is difficult to account. During 1925 47·8 per cent. of the entrants, 44·3 per cent. of the intermediates, and 74·0 per cent. of the leavers had sound teeth. These figures have to be compared with 23·0, 26·2, and 35·7 for the year 1915. Some parents still refuse to have their children's teeth attended to, and steps are to be taken to insist upon treatment in all but the mildest cases of dental defect. A new scheme for dealing with crippled children through the national orthopædic hospitals at Great Portland-street and Stanmore came into operation in September, 1925. Special arrangements are also made for the regular supervision of the 93 school-children found to be suffering from valvular disease of the heart.

Cambridge

Dr. Andrew J. Laird reports three accidental deaths from gas-poisoning during the year. One was due to a defective hot-water geyser and two were caused by a leak from the gas-tap in the bedroom He suggests that gas fittings should be periodically overhauled, but neither gas companies nor plumbers lay themselves out for this work If the supplying bodies had placed on them the duty of testing the fittings of their customers in return for a small fee, the latter would only have themselves to blame for disasters such as those mentioned

Mr W B Grandison, the public dental officer, refers to the difficulty of getting all the mothers to persevere with dental treatment for their children In the Cambridge scheme every effort is made to secure the healthy state of the mouths of expectant and nursing mothers and the babies are enrolled in the scheme when they have cut four teeth Mr Grandison is especially anxious that the work should continue between the ages of 3 and 5 years In 1925 172 babies were enrolled During the last six years the local authority have erected 417 houses, but the need is still very great and the number of families waiting for council houses is between 700 and 800 A Housing Week was held so that no one really interested might be ignorant of the facilities which existed for obtaining assistance to build or purchase So far there is no evidence of a movement upwards from the very lowest stratum of housing The contamination of apples by arsenic has received attention, and although arsenic was found there was no evidence of any ill-effects therefrom

Wimbledon

Wimbledon, Dr A Gilmour states, is mainly a dormitory for workers in London, and its popularity as such is responsible for the overcrowding which exists in practically all parts of the town Houses for occupation of the working-classes are not erected by private enterprise, and suitable sites for municipal schemes are not easily found There is much subletting of rooms, and Dr Gilmour suggests that this practice might be restricted by by-law to the families of those employed locally, but admits such a measure would be difficult to administer

The school report shows that dental inspections numbered 3059, and that 2418 children required and were offered treatment Of these only 1197 attended to receive it In addition to the use of the public baths by school-children for swimming, the Health Committee supplies hot baths, including soap and clean towels for school-children at the price of 1*d* Great use is made of this opportunity

Swindon

Dr Dunstan Brewer gives an interesting account of the history of Swindon, its progress in sanitary matters during the last five years, and the dangers to health (bacterial and otherwise), which threaten the Swindonians He concludes with a study of the recent behaviour of scarlet fever in his district In the early nineteenth century Swindon was a village standing on a hill of Purbeck limestone, 480 feet above sea-level In 1842, when the Great Western Railway moved its works from Wootton Basset to Swindon, the industrial town was built in the valley on the Kimeridge clay and the new buildings were congested, because it was considered essential for the workpeople to live a stone's-throw from their work There are no slums and the buildings seldom exceed two stories There is not much smoke and rickets is almost non-existent The water-supply is hard and from two sources The Wroughton source resembles a surface-water and deteriorates after the end of a drought Dr Brewer suggests that it should not be used on such occasions until it becomes normal again The Ogbourne source is less liable to pollution, and Dr Brewer proposes that the borough should purchase sufficient of the land above the adits to control the surface and prevent pollution through cracks in the chalk The condition of overcrowding does not improve much, and none but corporation houses are built for letting The man with a small wage and a large family cannot find the 10 per cent deposit for purchasing Until satisfactory property can be rented at a low figure overcrowding will remain as it is The corporation does its best to provide for the large families and has a housing estate outside the borough with 300 completed houses and 120 in course of erection There is great need for an adequate general hospital with up-to-date equipment

The municipal maternity hospital established in 1922 provided for more than one-fifth of the total confinements in 1925 A system of notifying puerperal pyrexia immediately, with a view to thorough investigation of each case, is in operation, and during the last five years no death from puerperal sepsis has been registered Serious cases of puerperal fever are removed to the Fever Hospital for treatment At the child welfare clinic several cases of an infantile affection characterised by a peculiar lemon colour, enlargement of the liver and spleen, and degeneration of the blood cells have been met with During 1925 six cases occurred, two ending fatally, the deaths were certified as due to bronchitis Another condition mentioned is abscess of the glands of the neck without tangible cause These were coincident with the epidemic prevalence of scarlet fever and measles Dr Brewer refers to unnecessary operations for circumcision, with troubles and occasional deaths following the operation, and has found that if the prepuce is freed and cleansed soon after birth the need for circumcision becomes rare. For the fourth year in succession no Swindon-born child has been blinded by ophthalmia, whereas in former years two such disasters occurred annually The report includes a careful analysis of the cause of death of infants who came under the purview of the clinic

Eastbourne

Dr W G Willoughby mentions as some of the features of 1925 an almost complete absence of diphtheria, a high death-rate from influenza, 56 per cent of the deaths being of persons over 65, and an excess of deaths over births for the first time Tuberculosis especially non-pulmonary, showed a marked decrease The number of houses built in 1925 was the largest for many a year and the promise of 1926 is better still in respect of small houses Dr Willoughby regrets the want of sympathy shown by private owners and occupiers of houses with regard to letting rooms to young mothers and those about to become mothers This difficulty is only met to some degree by the preference given to persons with children in the case of municipal houses In municipal houses subletting is constant, overcrowding occurs, and rents are frequently overdue Dr Willoughby considers the personal work by health nurses in the homes vastly more important than mass lectures at the centres Progress in food protection has been disappointing, and the new Orders have been of no practical value in the protection of meat and other food

Nineteen samples of Certified Milk were taken from two producers On six occasions the milk from one producer failed to satisfy the Ministry's standard

The hours of sunshine at Eastbourne were 1898 9, which was the seventh highest recorded for the United Kingdom

---

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED JULY 3RD, 1926

Notifications—The following cases of infectious disease were notified during the week—Small-pox, 135 (last week 165), scarlet fever, 1552, diphtheria, 855, enteric fever, 29, pneumonia, 527, puerperal fever, 46, cerebro spinal fever, 2, acute poliomyelitis, 3, acute polio encephalitis, 1, encephalitis lethargica, 52, continued fever, 1, dysentery, 11, ophthalmia neonatorum, 107 There were no cases of cholera, plague, or typhus fever notified during the week

Deaths—In the aggregate of great towns, including London, there were 3 (0) deaths from enteric fever, 25 (2) from measles, 8 (0) from scarlet fever, 30 (5) from whooping-cough, 32 (5) from diphtheria, 47 (7) from diarrhœa and enteritis under two years of age, and 28 (6) from influenza The figures in parentheses are those for London itself

REPORTS OF SCHOOL MEDICAL OFFICERS

The following table summarises the figures given in the school reports for two Scottish counties .—

Name of county	No on roll	Av elem school atten-dance	No of routine children exa mined	No of special examina tions and re-inspec tions	Percentage of children found on routine examination requiring treatment *
County of Dumbarton	28,806	23,867	7,446	2,152	13 8
County of Stirling	—†	—†	8,374	1,734	3 1

* Excluding dental defects and uncleanliness † Not given

County of Dumbarton

Dr T L Thomson presents his report as a series of statistical tables of great detail This is an excellent method of summarising results, but such a report does little to stimulate the interest and cooperation of parents and laymen; the value of enlisting public support justifies full discussion and comment

Rickets and chest diseases generally are on the decrease, but the rather high incidence of verminous children (11 5 per cent.) indicates a certain lack of parental interest and supervision, resulting in an increase of " dirt " diseases Though no details are given, it is significant that, of 2310 children treated at the minor ailment centres, 1137 had skin affections The number of parents attending the medical inspections has gradually risen from 3 per cent in 1911 to 25 6 per cent in 1925; this percentage should be greatly increased as the full knowledge of the good work being done gets disseminated The fact that only a small number of abnormal children are reported in the county (139 mentally and 52 physically defective) is perhaps largely accounted for by the difficulty of undertaking the work of such a large district where only two whole-time medical inspectors are engaged

County of Stirling

Dr T Adam reports the smooth and satisfactory working of the new scheme coordinating medical and nursing services of the county under a joint committee representing the authorities for child welfare, school medical service, and tuberculosis This system has many advantages Among them may be noted the arrangement by which all children under 5 suffering from squint are brought to the notice of the school oculist There is also good cooperation with the sanitary authority The importance of ear, nose, and throat conditions is rightly emphasised, and it is probable that services of a surgeon specialist will soon be available Good accounts are given of the work of the special schools and the merit of the teachers is recognised In the rural areas, however, provision is still lacking for mentally and physically defective children, and it is to be hoped that the difficulties in this direction will be surmounted

---

Glasgow Royal Hospital for Sick Children —The report of the directors shows a remarkable response to the appeal for £75 000 to provide urgently needed additions and extensions The whole of the money was subscribed in less than six months (without the aid of bazaars, sales of work, fêtes &c) by about 1000 persons When these works and the extension of the country branch at Drumchapel are completed, there will be 400 cots, and the directors believe that the institution will then be the largest and finest of its kind in existence

Liverpool Open-air Hospital for Children.—This hospital is at Leasowe At the annual meeting on June 21st it was stated that nearly £24,000 had been spent on improvements during the last two years, and that over £10,000 had been raised without a public appeal The senior medical officer, Dr T Hartley Martin, said that 80 per cent of the patients who were treated at Leasowe went away cured After-care of the children is an important part of the hospital's work , a small workshop for the training of ex-patients has been established and outdoor clinics have been added An appeal is being made to clear off a debt of £13,000.

Correspondence.

"Audi alteram partem"

NON-SPECIFIC PROTEIN INJECTIONS IN CHRONIC ARTHRITIS

To the Editor of The Lancet

Sir —The toxic material which is presumably the proximate cause of chronic articular rheumatism and fibrositis is usually regarded as being made up of proteins and their split products, albumoses and proteoses

The principle that underlies the treatment of these conditions by the introduction to the blood stream of proteins, foreign to it, is the stimulation of enzyme activity This promotes the appearance in the blood of enzymes that have the power of digesting the albumoses and proteoses formed by the acid hydrolysis of the actual proteins thus introduced To these enzymes the name " proteolytic " is given. Apart from gastro-intestinal processes, proteolysis is normally an intracellular phenomenon The possibilities of toxic effects on the organism are always present when the process takes place outside the cells to any considerable extent

What might be called the opposite process or that of ' detoxication " implies the ability of the cells or fluids of the organism concerned to digest toxic protein fragments, and this is brought about by the stimulation of enzyme activity Besides the latter phenomenon we have an increased cellular activity generally, the stimulation of the bone-marrow the mobilisation of leucocytes, and the formation of antibody Recovery eventually comes about through changes in the lymph, fluids rich in antibody being forced through the lymph channels This causes a varying amount of constitutional disturbance along with a rise in temperature

The protein may be introduced to the blood stream by means of a syringe and needle or it may be "derived" from the body itself as follows —

Stimulation of the skin by hot baths, packs, hot air and the like, produce an active hyperæmia therein This is associated with increased lymph-supply, and in consequence certain skin enzymes, such as lipase and proteose, are swept into the circulation along with exudates from the joints or fibrous tissue These combined act as antigens or stimulators of enzyme activity In other words, they act precisely as a foreign protein would In this connexion it is useful to remember that blood so slightly altered as by being drawn from one part of the body and reinjected at another is capable of setting up a reaction and really acting as an antigen to itself

This constitutional disturbance, brought about by the employment of baths and various physical measures, has been recognised at spas for centuries and is always known as the bath reaction. Patients themselves have come to expect it and look on it as a favourable sign

" Protein shock " and a " bath reaction " are fundamentally the same, whether brought about by Dr Yeoman's methods or Dr Sundell's The only thing that differs is the route

I am, Sir yours faithfully,

London, W , July 3rd, 1926 M B Ray

HÆMORRHAGE ASSOCIATED WITH PERI-TONSILLAR ABSCESS

To the Editor of The Lancet

Sir,—The publication in your issue of June 26th last, by Mr Norman Patterson of a case of serious hæmorrhage following the opening of a quinsy, has suggested to me the recording of the following case —

A male, aged 28, who had been subject to recurrent tonsillitis since childhood, was seen by me with the history of having been in bed with a quinsy for a fortnight and of having had, on the previous day, three severe attacks of hæmorrhage from the right side of the throat Examination of the throat showed a small clot adherent at the site of rupture of a peritonsillar abscess in the right side of the soft palate No further bleeding took place for two days, when another severe attack necessitated operative interference I dissected out the tonsil, under a general anæsthetic, and stitched up the tonsillar fossa Recovery was slow but uneventful

This case differs from Mr Patterson's, in that the hæmorrhage occurred after spontaneous rupture and that it was found possible to control the bleeding at the site of origin

I am, Sir, yours faithfully,
A J WRIGHT, F R C S Eng
Bristol General Hospital, July 7th, 1926

SURGICAL TREATMENT OF GASTRIC AND DUODENAL ULCERS

To the Editor of THE LANCET

SIR,—I have read with much interest Mr A J. Walton's contribution to your issue of July 10th I conclude that by simple suture of a perforating ulcer, he means suture and invagination of the ulcer Mr Walton states that " gastro-enterostomy at the time of perforation will depend upon the patient's condition, and later in his article he states that " in a large number of early cases a gastro-enterostomy can be perfectly safely performed at the first stage, but should the patient be seriously ill, simple closure should alone be performed " In all cases, whether early or otherwise, my experience has been that the patient is very ill Shock is what we are immediately confronted with It is true that the amount of shock varies, being less after a latent interval Again, the amount depends upon whether perforation has or has not followed directly upon a meal It should surely be our aim to minimise shock by reducing our operative manipulations to the full extent consistent with safety The operation for closing and invaginating the ulcer is all we can reasonably expect these patients to stand The addition of a gastro-enterostomy, however, rapidly and dexterously performed is bound to increase shock and so militate against success

Mr Walton states that he has had to operate upon 19 cases " where a simple closure has been performed elsewhere by surgeons holding similar views to Mr Ley and myself and that these patients have returned some months or years later with definite symptoms of chronic ulceration In two cases they have sought treatment for second perforation " Those of us who prefer the " simple suture " operation will be glad to note that in Mr Walton's series of recurrences it had stood the test for months and even years Nineteen cases from far and near in so large a clinic as that of Mr Walton, must surely represent a very small percentage of recurrence The shorter series of cases which were under the care of Mr Walton's first assistant in the follow-up department will be disappointing to many of us, and such results do not compare with others that have been published In my group of cases of perforation there was one instance of a man who perforated twice within 12 months Quite apart from this series I have had four cases that have been in the hands of other surgeons and have returned with active ulcer One was a man who was operated upon in New York for perforation Three had undergone gastro-enterostomy following perforation In one of these the operation was performed on account of hæmorrhage In the second I found a jejunal ulcer with stenosis of the stoma In the third case I found an active duodenal ulcer

Mr Walton can with confidence allay his suspicions about my statements My hospital cases I see regularly and private patients I hear about from time to time I quite agree that there is a percentage of cases (in my series 6 per cent) which comes back with recurring symptoms, but this is small There is always a more opportune time to perform a subsequent operation if necessary Why not wait for it ? Should it ever be my lot to be inflicted with a perforating duodenal ulcer I shall most certainly seek the conservative surgeon

I am, Sir, yours faithfully,
Bradford, July 12th, 1926 BASIL HUGHES

PARTNERSHIP SOME FACTS AND A WARNING

To the Editor of THE LANCET

SIR,—A friend of mine recently has been, in my opinion, treated in a most unusual manner over a projected partnership, and has in law apparently no redress I think, therefore, that it is only right that I should relate some of the facts of the case, as related by my friend to me, as a warning to others to avoid laying themselves open to a similar rebuff

The partners shall be called A and B and my friend X B retires and X agrees to buy, subject to certain conditions, which A agrees to No mention is made of any preliminary assistantship and X understood that A had accepted him as a partner B was about to undergo an operation and wished to arrange his affairs before he left the town so X pays up the bulk of the purchase money and signs an agreement to take over B's house

X then starts work with A as a partner and continues to do so for five weeks He is introduced to A's patients *as A's partner* X goes on the panel and *X's name is substituted for B's on the cards* A and X open a *common banking account* and steps are taken for X to take over B's *share of the lease of a common surgery* After discussion with A, X orders and has printed 2000 copies of a new joint account form A agrees to the form of *X's plate with both names on* This is bought and paid for by A

X calls on all the doctors in the town *as A's new partner*

With A's consent at the end of five weeks X goes to London to make arrangements for moving in his furniture and pays a locum in his absence On arrival in London X receives a letter from A saying that he thinks it would be a mistake to proceed further with the partnership and that B had acted hurriedly At the same time X learns that B is dangerously ill after the operation X wires for an explanation and the only one he gets is " that it is nothing personal "

X recovers his purchase money from B and has to look elsewhere for a practice When X went to join A he told all his friends that he was going into partnership with A He received a number of introductions to people in A's town and he now feels that he has suffered considerable moral damage, apart from out-of-pocket expenses and loss of time These facts should be a warning to those about to enter a partnership to see that the *partnership deed is signed before commencing work*, or else to arrange a preliminary assistantship

I am, Sir, yours faithfully,
London, W , July 1st, 1926 C GORDON-WATSON

HUDDERSFIELD INFIRMARY—Mr George Brooke, of Spring Wood Hall, has presented an installation of remedial baths to Huddersfield Infirmary at a cost of £1500 A tablet has been placed in the bath establishment recording that the gift was made " in recognition of the eminent ability and unremitting services of William Turnbull, Esq , M D , who for 60 years has held the office of physician to this infirmary "

THE NEW WESTMINSTER OPHTHALMIC HOSPITAL—The plans for the new hospital in Broad street, Bloomsbury, have now been settled and building will begin shortly There will be a casualty department close to the main entrance, and most of the ground floor will be occupied by an out-patients' waiting-hall to hold between 300 and 400 people Provision will be made for 14 paying patients in separate wards, and there will be wards for 20 women and 10 children, together with 10 beds for cataract cases The kitchens will be at the top of the building, and there will be ample technical and administrative accommodation

Obituary.

WILLIAM HOTSON CADGE O.B E, M R C S.

LIEUT COLONEL, I M.S (retd.)

Lieut -Colonel W. H Cadge, who died at Lowestoft on July 9th was the son of Christopher Goulder Cadge, and was born in 1853 His uncle was the celebrated surgeon, William Cadge of Norwich, and in many ways Colonel Cadge resembled him—particularly in his high sense of duty and unassuming generosity

Educated at Norwich Grammar School under Dr Jessup, William Cadge spent a year at the Norfolk and Norwich Hospital before going on to St George s Hospital, where he had a successful career and qualified in 1875 He passed into the Indian Medical Service and after a year at Netley went to India Though posted to the Civil Branch he volunteered for the Afghan War of 1879, and at Quetta distinguished himself by efficient and expeditious evacuation of the wounded Having proved his ability he was ordered to join Lord Roberts's forces at Cabul but was unable to get beyond Jumrood Fort in the Khyber Pass where however he found scope for his energy in attending to the large number of sick men from the victorious army Cadge himself went down with rheumatic fever and was invalided home He returned to India to take charge of the Lucknow gaol but poisoned his hand during an operation, and after a very serious illness again was sent back to England After a period in charge of Agra gaol he became civil surgeon successively at Fetegarh Aligarh, Fyzatal Barelli and Nainatal, and showed himself a skilful operating surgeon, particularly successful in the treatment of cataract and stone Among the civil population his reputation stood high and his services were in constant demand During the great famine he enhanced his reputation and was a member of the Lieut -Governor s staff

When Colonel Cadge retired from the Service on account of failing health he lived for a time at Lowestoft where his uncle was living also Finding little pleasure in idleness, he applied for the post of medical officer to the Mutford and Lothingland Board of Guardians and carried out his duties with careful efficiency During the war in spite of his age he insisted on serving, and was appointed to the Ranelagh Hospital at Ipswich, which he largely equipped out of his own means Here, from 1915 to 1918, he worked incessantly without regard to his own well-being, in recognition of which service he was afterwards decorated Notwithstanding poor health. Colonel Cadge took a great interest in local affairs, especially in the Lowestoft Hospital. He was an active and enthusiastic member of the board, and the hospital became the richer by his generosity He was a keen sportsman and, up to last year, a good shot. "But what endeared him to a very large circle of friends," writes a medical colleague, "was his courteous and loveable nature, his loyalty to his friends his great kindness, and his humility, which was, perhaps a barrier to the high place he could have obtained if he had ever desired fame and high position He was such an unassuming personality that only his friends knew of his great ability and devotion to duty"

Colonel Cadge married in 1882, Miss Flora Summers, who survives him.

DANIEL MACPHERSON TAYLOR.

M D. Glasg, D P H

Dr D M. Taylor, who died at Shelf on July 10th was born in 1868 He was educated at the University of Glasgow where he graduated in arts in 1878 and in medicine (with high commendation) four years later For many years he was in general practice in London and York, but in 1906 took the D P.H. and in 1910 went as school medical officer to Halifax, where he became especially interested in the Bermerside Open-Air School and Home After three years of school work, Dr Taylor was appointed tuberculosis officer and assistant medical officer of health to the Borough of Halifax combining these duties with residence at the Shelf Sanatorium of which he was superintendent During the war he served in Mesopotamia with the Royal Army Medical Corps and there is no doubt that his health was impaired His own experience and the loss of a son during the war, inspired in him a desire to give all possible help to the ex-Service men who came under his care As a diagnostician his assistance was greatly in demand by local practitioners who thought highly of his skill, and, though not widely known in the public health service he proved himself a most competent colleague. Unfortunately he had suffered from ill-health for some years and during 1925 had to be off duty for some months He worked again during the winter but since Easter had been confined to his bed

Dr Taylor leaves a widow, two daughters who are in the nursing profession, and a son who is still at school

Medical News.

University of Oxford —At recent examinations the following candidates satisfied the examiners in the undermentioned subjects:—

Medicine, Surgery and Obstetrics—Margaret N Jackson, Constance I Pattulo Rosa S Wordsworth C P Blacker, J C K Chilcott Albert V Clemmey, Gordon H. Crisp, C R Croft H E. Cuthbert J N. C Ford E L Fothergill, Kenneth A Hamilton William H Hudson Thomas C. Hunt J H Kennedy, David Lurie, Philip Morton, David I Rees Frederick J. Sale J de la M Savage, Thomas H Sellors Richard W. A. Simmons George P Thorold, Oliver R Tisdall and William R. Wood

Pathology—O H Lister Nancy B Ockenden, Howard W. Allen, I A. Brown, Eric N. Butler Henry E. Cuthbert, J A. Eddy J H Ferguson William B Fiddian-Green, C L Harding, Robert E. Havard, Reginald A. Hawthornthwaite Richard C Hodges George J M. Inkster, Albert P. Kingsley, Ronald G Macbeth, H E Mansell Arthur E Porritt J W Pugh, J S Rake, C R. Salkeld, and Edward M Wright

Forensic Medicine and Public Health—Rosaleen L. Graves, O H Lister Howard W Allen C Charleson Paul F Cluver, Gordon H Crisp, Henry E. Cuthbert, Walter N. Dickenson C L Harding, Richard C Hodges, William H. Hudson J H Kennedy David Lurie, P C Mallam, Philip Morton, Ripley Oddie, J. S Rake, and Thomas H Sellors

University of London —At a meeting of the Senate held on June 23rd it was resolved:—

That the Co-ordination and Developments Committee be authorised to approach the Duke of Bedford to ascertain whether and on what terms he would be prepared to negotiate the sale or lease of the land in Malet Street now occupied by the University, or of other land for the Institutions connected with the University now on the Bloomsbury site"

Lord Dawson Mr H L. Eason and Sir Holburt Waring were appointed to serve on the Academic Council for 1926–27, and Dr E Graham Little, Dr G N Pitt Sir Cuthbert Wallace Sir Holburt Waring, and Dr R A. Young were appointed to serve on the Council for External Students — The annual report of the superintendent of the Brown Animal Sanatory Institution for the year 1925 was received by the Senate and the appointment of Mr. F W Twort as superintendent of the institution was continued.—It was reported that Sir Holburt Waring had been elected chairman of the Finance Committee and Sir Wilmot Herringham chairman of the Committee of Medical Members of the Senate

William Julius Mickle Fellowship—Applications are invited for this Fellowship of the value of at least £200, which is awarded annually to the man or woman who, being resident in London and a graduate of the University, has in the opinion of the Senate done most to advance medical art or science within the preceding five years. Application must reach the Principal Officer not later than Oct 1st, 1926

Paul Philip Reillinger Prize—This prize of £30 may be awarded on Dec 3rd, 1926, for the best essay embodying the result of research work on a medical subject carried out by the candidate Candidates must be matriculated students who on June 1st were studying medicine in one of the schools of the University or graduates of the University, who on the same date were of not more than five years' standing from the date of taking their first degree, and who are or were students in such school. Essays must reach the University not later than Oct. 1st and particulars may be had from the Academic Registrar

Society of Apothecaries of London—The Rogers Prize, of the value of 150 guineas, for the best essay on the treatment of the sick poor and the preservation of the health of the poor, has been awarded by the trustees (Sir John Rose Bradford, President of the Royal College of Physicians, and Dr T Vincent Dickinson, Master of the Society of Apothecaries) to Mr Hugh J McCurrich, M S, F R C S Numerous essays, many of them of considerable merit, were received from different parts of the country and from as far afield as India and South Africa

Royal College of Surgeons of England—At a quarterly meeting of the Council held on July 8th, Sir John Bland-Sutton in the chair, Mr E W Hey Groves, Mr G Grey Turner, Mr V Warren Low, and Mr Victor Bonney, having been elected at the annual meeting of Fellows, were introduced and took their seats on the Council Mr George E Gask was appointed a member of the committee of management of the Examining Board in England in place of Mr W G Spencer, resigned—Sir Arthur Keith, Mr V Zachary Cope, Mr James E H Roberts, Mr Ernest M Cowell, Mr Arthur H Southam, Mr Bernard W Williams, and Mr John Howell Evans were elected Hunterian professors Mr Ralph St L Brockman, Dr Hildred Carlill, and Dr Alfred Piney were elected Arris and Gale lecturers Mr Clement E Shattock was elected Erasmus Wilson lecturer, and Sir Arthur Keith was elected Arnott demonstrator for the ensuing year—Sir Berkeley Moynihan, Bart, K C M G, C B, was elected president, and Sir Cuthbert Wallace and Mr Francis J Steward, vice-presidents, for the ensuing collegiate year—A letter was read from Sir John Rose Bradford chairman of the Lister Medical Committee, reporting that at a meeting of the Committee on June 3rd the Lister Medal for distinguished contributions to surgical science, with the honorarium of £500, was awarded to Prof A F von Eiselsberg, of Vienna, and that, in compliance with the conditions of the Trust, Prof von Eiselsberg had undertaken to give an address at the Royal College of Surgeons on some date in 1927 convenient to the president and Council—The Museum of the College will be closed from July 19th until Oct 1st for painting and redecoration

Licences to practise dentistry have been conferred upon 68 candidates who have passed the requisite examinations and have complied with the by-laws of the College The following are the names and dental schools of the successful candidates, viz —

L C Abrahams, London, A M M Anderson, Bristol G Baker Durham, A G Batten, Bristol, R G Beck, Middlesex, A Bendelstein, London M Berman, Guy's, J H Bernstein, London, R Bliden and R V Bradlaw, Guy's, A F Brazenor, London, S Brett, Charing Cross, H Brindle, Royal Dental C E Brittan Guy's, N S S Brooks, Manchester, H Brown and I E Brown, Guy's, E M Buckley, Royal Dental, I E Buxton, O St L Campion, and J W S Coe, Guy's J E Curnock, Charing Cross, R Cutler, Guy's C I Davies, London, A M Davis, Royal Dental, W N Farrar, G Fellows Smith, A W Francis, and M Gerson, Guy's, A E Gordon, London, J W Hampton and Gladys M Harwood, Royal Dental, A H B Heesom and K T Hops, Guy's, A Joffe, London, G N R Jones, Guy's, O M S Jones, Bristol, S L Kaplan, Charing Cross, R. F Keet, Guy's, D W Lamb, Univ Coll, G N Lewin and C E Long, Guy's, C Maude, Leeds, A S Moore and W H Naylor Guy's, Marjorie A Newland, Royal Dental, J N Noriskin, London G W Oliphant, Guy's, H V Pell, Royal Dental, V C Penberthy, Guy's, E J Perks, Royal Dental, P Perl Middlesex, C A Pollard and F Popper, Guy's, F H M Preston, K E Rispin, and H F Ritson, Royal Dental, S A Romain, London, R Y Simpson, Bristol H N Squire, King's Coll, N v Zyl Smit, Guy's H B Smith, Bristol C L Steyn and R G Swiss, Guy's, Catherine Watterson, Univ Coll, R G Wheeler, London, J White, Guy's, and A P J Williams, Univ Coll

The diploma of Member was conferred upon Alison Marianne Clark, Royal Free and St Mary's Hospitals

University of Liverpool—At recent examinations the following candidates were successful —

Degree of M D

R G Cooke and C W Healey

Degrees of M B and Ch B (Honours)

Class I—*†R G Walmsley

Class II—‡R M Ainsworth, † J F Galloway, *F Murgatroyd

* Distinction in Medicine † Distinction in Midwifery

‡ Distinction in Surgery

Final Examination for Degrees of M B and Ch B

Part III—Grace A Austin, B Brickman, G E Church, J L Clegg, D Cohen, R. F Corlett, J C Edwards, Elinor M Gelling, E H Glynn, A J Goss, Dorothy A Gough, J Halton, D G Henry, B S Jarvis, T A Jermy, A N Jones, C Kaufman, G T Krajewski, J S Logan, D B Macaulay, W. A McCurdy, J C McFarland, G McLoughlin, J Morgan, G W Paton, H E Pearson, Mary T Penrice, D E P Pritchard, A. V Russell, M R Sheridan, Mary A Silcock, N P Slade, I Thomas, G D Thompson J E Wallace, Kathleen M Ward, A K Wilson, Nora M Wilson

Part II—S W Adler, A B Anderson, T Blezard *W S Brindle, H C Calvey, A N Cameron *†J K Cameron S Canter, E Cohen, F R Craddock, W S Creer, A Dala, A Dodd, T L Dowell, W J Eastwood, Lilian W Edwards, Ruth M Fennell, J J Graham, Elsie A. Griffiths, G T Harris, *E D Irvine, K Jilani, R. N Johnson, O V Jones, I Kossew, *†T Lasker, Theresa J Lee, J L. Lewis, F E Lomas, J McHugh, T C Newman J Pasvolsky, J W Pickup, E E Prebble, C Rigby, N W Riley, G L Roberts, J B Rushton, †M. Silverstone V J M Taylor, J P Thomas, S L Tunnicliffe, A. J Walsh E N Wardle, P H Whitaker, A L Williams, and R L Wynne

* With distinction in Public Health

† With distinction in Forensic Medicine and Toxicology

Part I—J G Hattingh, R E Jackson, G W Phillips, and J Williamson

Diploma in Public Health—W E Haigh, J E Power, J A Scott, and A E Wall

Diploma in Tropical Hygiene—W J Aitken, N Bligh-Peacock, T Cullen, E G A. Don, H P Fowler, D Lennox, A G Mackay, F Oppenheimer, S A Talib, and N S Turnbull

University of Durham—At Convocations held on June 29th and 30th the following medical degrees were conferred —

Doctor of Medicine—Ram Mansoor (*in absentia*), James H Saint (*in absentia*), Margaret Scoresby Jackson, Thomas H. Blench, Charles R Smith, and Edward A Welsh

Doctor of Medicine for Practitioners of 15 Years' Standing—Vincent P Norman.

Bachelor of Medicine and Bachelor of Surgery—William B Allan, Max Coll, Dorothy E Crisp, Mabel Dodds, Jessie S Dunlop, William L Fulthorpe, Hugh Gass, Dorothy Hopkinson James H Horsley Grace C Howie, Daniel S Jackson, Ernest E Kendall, Kenneth A W Law, John A Livingston, Graeme M Macintyre, Grace E McVitie, Alexander D Miller, Hyman Moross, Myer A Phillips, Mabel Popham Raymond H Robinson Henry Rosenbloom, Phyllis Routledge, Reginald C F Smith, Moses M Suzman, Charlotte M Thomson, Robert Y Carter Arthur D W Cooke, Francis P Forrest, Hugh D Golder, Richard A Goodall, Charles V Harrison, Francis McGuckin, Sidney McD Selby, and Frank G Sinclair

Bachelor of Hygiene—Madge Hopper and George Wilson

The following received the Diploma in Public Health (D P H) —

Madge Hopper and George Wilson

The following received the Licence in Dental Surgery (L D S) —

John Chalmers, George G Clark, Philip W Eddy, Godfrey E Hutchinson, Alexander J Munro, Henry R Myers, and Charles H Richardson

Victoria University of Manchester—At recent examinations the following candidates were successful —

Final M B and Ch B Examination

* † Kathleen Sheehan (First-class Honours), Florence Whitrow (Second class Honours), J K Anderson, Frank Appleton, Florence M Blades, George Bridge, J F Caithness, Marguerite E Cliff, T K Clifford, Joseph Crowther, Harriet M Dick, Margaret Dyson, Alec Fleming, I H Freedlander, C F Garfit, E St G Gilmore, F S Hawkins, †Fanny Howe, T J Kay, H B Kilroe, J H Kitson, †C T Mills, G S de W Moll, Richard Pendlebury, Marjorie Reekie, C D Roff, Maurice Sheehan, Olive de la W Turner, W C D Walmsley, E J Warburton, and J T Whitley

* Distinction in Medicine

† Distinction in Forensic Medicine

Forensic Medicine, Hygiene, and Preventive Medicine—Lillie M Burton, Joseph Parness, and Mary I Prentice

Hygiene and Preventive Medicine.—Pieter Bester, R H Blackburn, G W Jones, B R Sandiford, W S Slater, and G R Walker

Obstetrics and Surgery—R H Barnes, Helen G M Bennett, Soloman Bernstein, J W Brooks, Louie J Burton, J F Caithness H V Crabtree, Harriet M Dick, Margaret Dyson, Ralph Edmondson, Margaret Egan, Ernest Firth, I H Freedlander, J S Goller, Ernest Heard, Fanny Howe, E P Johnson, J H Kitson, George Metcalfe, G L Normington R H Poyser, I M Preston, Marjorie Reekie, Nora Ridehalgh, C D Roff, R F Sheppard, Donald Starr, Florence V. Stephen, C E Sykes, and R T Wimmer

Obstetrics—Leonard Rosenthal

Third Examination for M B and Ch B Degrees

Pathology—Leslie Bold, H J Brennan, Mary G Davies, G B Hardman, Morris Levine, Kathleen McGowan, Mary E P Mackay, S L Rowley, and Henry Tickle

Pharmacology—M M Barritt ‡G L Brown, Alice M Butterworth, Alexandra W Groves, W S Ramsden, Marian M Reekie, G F Rowbotham, J F Wilkinson and Frederick Wraith

‡ Distinction in Pharmacology

Diploma in Public Health.

Gladys F A McLean

Diploma in Bacteriology.

A. F. Abbassi and M A Omar

UNIVERSITY OF ABERDEEN —At the Graduation ceremony held on July 9th the following degrees were conferred —

DOCTOR OF MEDICINE.

*John Fiddes, †William Buchan, †John S Taylor, Wallace J Gill, and Charles Shearer

* Awarded highest honours for thesis
† Awarded honours for thesis

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY

Charles Anderson, James G Bremner, Charles H Cave, *Harry D Christie, Charles C Connochie, James Coutts, Archibald N Forsyth, John W Foster, John L Gammie, Douglas J T Glennie Evelyn Goldie, James R W Hay, Robert W. Hendry, *William J Hogg, Reginald A M Humphrey, Frederick Hunter, George P Middleton, Alexander Paterson Catherine Peat, Margaret S M Reid, Charles E. Saunders, Andrew D Sinclair, James I Smith, *George Stephen, Arthur J W Wilkins, and Alexander Wood

* Completed Final Examination with distinction

UNIVERSITY OF DUBLIN SCHOOL OF PHYSIC TRINITY COLLEGE.—At recent examinations the following candidates were successful —

FINAL MEDICAL EXAMINATION

Part I, Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene Pathology and Bacteriology—*T J Millin *Cecil P Martin, William J E Jessop, Dermot F Walsh, Henry R. F Tweedy, Gordon W F Pratt, Thomas J O'Reilly Richard F W K. Allen, Francis O W. A Mahon-Daly, Julius Sayers Harold S North, Alexander J Burden, and Samuel B Dalrymple

Part II, Medicine—*Gilbert T L Archer, *Victor St. G Vaughan, Robert E Hadden, Herbert A. Brittain, James F MacMahon, Annette K Wood-Martin, John J O'Dwyer, Arthur N B Odbert, Douglas Bluett, Stella C Ross, Albert Sachs, Henry M Nevin, George E. Dodds, Lionel B Somerville-Large, Gladys L. Craig, Herbert Nelson, George S Gardner Victor G Horan, Robert C U Warrington, and Daniel A. O'C Quinlan

Surgery—*Henry O Clarke, Thomas J W Keown, Robert E Hadden Ernest E Satchwell, John C T Sanctuary Silver M. E Deane Oliver Derek St C Mackenzie, Gerald V A. Griffith Herbert A Brittain, Henrietta Armstrong Thomas F M. Woods, James Craig, Robert H Mitchell, George S Gardner, Margaret H Donaldson, Nancie N Lowther, Evelyn E Connolly, Douglas Bluett, George R. L Jordan, John Quigley, Samuel Smyth, George E. Dodds, Ernest H Hall, Henry A. Ferguson, Isabella K. M'Neilly, Ernest E Malone, Menzies L M Cauley, Charles H Wilson Kathleen L. Purdy, James G M Dowell, and Richard T P Tweedy

Midwifery—*Robert R. Woods *Solomon Behr, *Robert A Q O'Meara, *Wilhelm F Knobel, Edmund P. N M Early, Edward G Montgomery, Joseph A. Kevin FitzGerald, Evelyn E Connolly Maiben A. W. Roberts, Christiaan de Wet Meintjes Ralph W T. J Stewart, Gerald S Smyth, Gerald N Taylor, Edward A. Ellis, and Herbert Nelson.

DIPLOMA IN PUBLIC HEALTH

Part I—Pauline K O Flanagan,
Part II—Anna J O Reilly and Mary B Quinn.

UNIVERSITY OF SHEFFIELD —Mr Denton Guest, M.B, was on July 9th appointed to the combined post of demonstrator in pathology and assistant pathologist to the Royal Infirmary.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION, VENTNOR.—The Prince of Wales will open the Nurses' Home on Thursday, July 22nd, at 2 30 P.M.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION —On Monday, July 19th, at 3 P.M., Mr Letchworth will give a special demonstration in clinical ophthalmology at the Royal Eye Hospital; this will be free to all members of the medical profession. An intensive course in medicine, surgery, and the specialties will be held at the Prince of Wales's General Hospital (North-East London Post-Graduate College), Tottenham, N, from July 19th to 31st, daily from 10 30 A.M. to 5 30 P.M. It will include demonstrations, operations, general hospital clinics, clinical lectures, and the practice of clinical laboratory methods From July 19th to August 12th, at 5 P.M. daily, the West End Hospital for Nervous Diseases is to hold a course of lectures on the diagnosis and treatment of common diseases of the nervous system, clinical demonstrations will be included. During August courses will be given at the Queen Mary's Hospital for the East End Stratford (August 23rd to Sept. 4th) in medicine, surgery, and the specialties, and at the Queen's Hospital for Children, Hackney-road London (August 18th to 28th), in diseases of children. Both these courses will last all day Practical courses in anæsthetics are arranged at any time to suit post-graduates and usually last about three weeks Weekly practical courses in obstetrics and child welfare are arranged at the City of London Maternity Hospital (fee £2 2*s*) Personal application must be made at the Fellowship offices Copies of all syllabuses, of the *Post-Graduate Medical Journal*, and of the General Course programme may be had on application to the Secretary of the Fellowship at 1, Wimpole-street, London, W 1.

MRS Stanley Baldwin last week laid the foundation stone of the new West London Hospital Chapel

THE Twickenham Urban District Council has received a charter of incorporation, and Dr. J R Leeson has been elected the first mayor of the new borough.

AN EDINBURGH WAITING-LIST —On July 1st the waiting-list of Edinburgh Royal Infirmary was 2469, the largest on record

WEST END HOSPITAL FOR NERVOUS DISEASES —The annual report of this hospital at Gloucester-gate, Regent's Park, records that two extra clinic rooms have been provided in the out-patient department, one of which is devoted to psychotherapy.

HOSPITAL ACCOMMODATION AT SWINDON.—There has long been a serious difficulty about hospital accommodation at Swindon and the town council has just made purchases of land as sites for a general hospital and a maternity and infant hospital.

DONATIONS AND BEQUESTS —Mr William Shaw of Holywood co Down, gave £1000 to the Royal Victoria Hospital Belfast to endow a ward to be called "The Shaw Holywood" Ward —Miss Rose Emily Boden of Whittington, Lichfield, left £1000 to the Derbyshire Royal Infirmary

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.—When the foundation-stone of the new school was laid by the Minister of Health on July 7th a message of cordial greeting and renewed acknowledgments was despatched to the Trustees of the Rockefeller Foundation. The Minister announced that he was appointing a committee to report to him on the permanent hospital facilities needed by the School Sir Alfred Mond (chairman of the board of management) said that during his own period of office as Minister of Health the Trustees of the Rockefeller Foundation had made their magnificent offer of $2,000,000 for the building and equipment of a school of hygiene It had been necessary to consult the Chancellor of the Exchequer of the day upon a condition of the offer that the British Government should make themselves responsible for the maintenance of the School after it was built The necessary undertaking was forthcoming In acknowledging the help received from the Senate of the University of London Sir Alfred Mond cordially acknowledged the debt which the School owed to Sir Cooper Perry Mr Ormsby-Gore (Under-Secretary for the Colonies) spoke of the relation to the Dominions and Colonies of the tropical division of the School of which he could not exaggerate the importance In British tropical possessions the mortality and sickness rates in many areas were at present appalling If men and women trained to deal with diseases and still more with the causes of these diseases could be got to work there the problems could be solved with comparative ease Mr Neville Chamberlain (the Minister of Health) said that although the diagnosis and treatment of tropical diseases must remain in the domain of the specialist, the establishment of this School was a recognition of the fact that tropical medicine and hygiene had now become merged in a wider conception of preventive medicine The Athlone Committee had recommended in 1921 that post-graduate instruction in all branches of public health and hygiene should be concentrated at one institution which should be an affiliated school of the London University and should have a much wider scope than the training of medical officers of health for the home and colonial services The Athlone report fortunately gave expression to ideas which the Rockefeller Trustees had for some time had in mind, and they had accepted that report as an appropriate interpretation of what could be carried out in this country The general lines of the curriculum afforded some indication of the very wide scope of the proposed activities of the School They embraced physiology as applied to hygiene chemistry and biochemistry, bacteriology and immunology, medical biology (this division would absorb the greater part of the work of the old London School of Tropical Medicine); epidemiology and vital statistics and finally the group of subjects comprising the practice and principles of sanitary administration and public health The ceremony marked the beginning of a building which was the result of a combination of the two great English-speaking nations and which was probably destined to be famous as the greatest centre in the world of research and instruction in one of the most beneficent of all activities for the human race.

In connexion with the foundation of this School, its Director, Dr Andrew Balfour, who has already done so much work in its organisation, is to receive a presentation at 5 30 P.M. on July 23rd in the library of the temporary premises of the School at 23, Endsleigh-gardens, N W.

Society of Apothecaries of London —The Rogers Prize, of the value of 150 guineas, for the best essay on the treatment of the sick poor and the preservation of the health of the poor, has been awarded by the trustees (Sir John Rose Bradford, President of the Royal College of Physicians, and Dr T Vincent Dickinson, Master of the Society of Apothecaries) to Mr Hugh J McCurrich M S, F R C S Numerous essays, many of them of considerable merit, were received from different parts of the country and from as far afield as India and South Africa

Royal College of Surgeons of England —At a quarterly meeting of the Council, held on July 8th, Sir John Bland-Sutton in the chair, Mr E W Hey Groves, Mr G Grey Turner, Mr V Warren Low, and Mr Victor Bonney, having been elected at the annual meeting of Fellows, were introduced and took their seats on the Council Mr George E Gask was appointed a member of the committee of management of the Examining Board in England in place of Mr W G Spencer, resigned —Sir Arthur Keith, Mr V Zachary Cope, Mr James E H Roberts Mr Ernest M Cowell, Mr Arthur H Southam, Mr Bernard W Williams, and Mr John Howell Evans were elected Hunterian professors Mr Ralph St L Brockman, Dr Hildred Carlill, and Dr Alfred Piney were elected Arris and Gale lecturers Mr Clement E Shattock was elected Erasmus Wilson lecturer, and Sir Arthur Keith was elected Arnott demonstrator for the ensuing year —Sir Berkeley Moynihan, Bart, K C M G, C B, was elected president, and Sir Cuthbert Wallace and Mr Francis J Steward, vice-presidents, for the ensuing collegiate year —A letter was read from Sir John Rose Bradford, chairman of the Lister Medical Committee, reporting that at a meeting of the Committee on June 3rd the Lister Medal for distinguished contributions to surgical science, with the honorarium of £500, was awarded to Prof A F von Eiselsberg, of Vienna, and that, in compliance with the conditions of the Trust, Prof von Eiselsberg had undertaken to give an address at the Royal College of Surgeons on some date in 1927 convenient to the president and Council —The Museum of the College will be closed from July 19th until Oct 1st for painting and redecoration

Licences to practise dentistry have been conferred upon 68 candidates who have passed the requisite examinations and have complied with the by-laws of the College The following are the names and dental schools of the successful candidates, viz —

L C Abrahams, London, A M M. Anderson, Bristol G Baker Durham A G Batten, Bristol, R G Beck, Middlesex, A Bendelstein, London, M Berman, Guy's, J H Bernstein, London, R Bliden and R V Bradlaw, Guy's, A F Brazenor, London, S Brett, Charing Cross, H Brindle, Royal Dental C E Brittan, Guy's, N S S Brooks, Manchester, H Brown and I E Brown, Guy's, E M Buckley, Royal Dental, I E Buxton, O St L Campion and J W S Coe, Guy's J E. Curnock, Charing Cross, R Cutler, Guy's C I Davies, London, A M Davis, Royal Dental, W N Farrar, G Fellows Smith, A. W Francis, and M Gerson Guy's, A E Gordon, London, J W Hampton and Gladys M Harwood, Royal Dental, A H B Heesom and K T Hops, Guy's, A Joffe, London, G N R Jones, Guy's, O M S Jones, Bristol, S L Kaplan, Charing Cross, R F Keet, Guy's, D W Lamb, Univ Coll, G N Lewin and C E Long, Guy's, C Maude, Leeds, A S Moore and W H Naylor Guy's, Marjorie A Newland Royal Dental, J N Noriskin, London G W Oliphant, Guy's, H V Pell, Royal Dental, V C Penberthy, Guy's, E J Perks, Royal Dental, P Perl, Middlesex, C A Pollard and F Popper, Guy's, F H M Preston, K E Rispin, and H F Ritson, Royal Dental, S A Romain, London, R. Y Simpson, Bristol, H N Squire, King's Coll, N v Zyl Smit, Guy's, H B Smith, Bristol, C L Steyn and R G Swiss, Guy's, Catherine Watterson, Univ Coll, R G Wheeler, London, J White, Guy's, and A P J Williams, Univ Coll

The diploma of Member was conferred upon Alison Marianne Clark, Royal Free and St Mary's Hospitals

University of Liverpool —At recent examinations the following candidates were successful —

Degree of M D

R G Cooke and C W Healey

Degrees of M B and Ch B (Honours)

Class I —*†R G Walmsley
Class II —‡R M Ainsworth, † J F Galloway, *F Murgatroyd

* Distinction in Medicine † Distinction in Midwifery
‡ Distinction in Surgery

Final Examination for Degrees of M B and Ch B

Part III —Grace A. Austin, B Brickman, G E Church, J L Clegg, D Cohen, R. F Corlett, J C Edwards, Elinor M Gelling, E H Glynn, A J Goss, Dorothy A Gough, J Halton, D G Henry, B S Jarvis, T A Jermy, A N Jones, C Kaufman, G T Krajewski, J S Logan, D B Macaulay, W A McCurdy, J C McFarland, G McLoughlin, J Morgan, G W Paton, H E Pearson, Mary T Penrice, D E P Pritchard, A V Russell, M R Sheridan, Mary A Silcock, N P Slade, I Thomas, G D Thompson, J E Wallace, Kathleen M Ward, A K Wilson, Nora M Wilson

Part II —S W Adler, A B Anderson, T Blezard *W S Brindle, H C Calvey A N Cameron *†J K Cameron, S Canter, E Cohen, F R Craddock, W S Creer, A Dala, A Dodd, T L Dowell, W J Eastwood, Lilian W Edwards, Ruth M Fennell, J J Graham, Elsie A. Griffiths, G T Harris, *E D Irvine, K Jilani, R. N Johnson, O V Jones, I Kossew, *†T Lasker, Theresa J Lee, J L. Lewis, F E Lomas, J McHugh, T C Newman J Pasvolsky, J W Pickup E E Prebble, C Rigby, N W Riley, G L Roberts, J B Rushton, †M Silverstone V J M. Taylor, J P Thomas, S L Tunnicliffe, A. J Walsh, E N Wardle, P H Whitaker, A L Williams, and R L Wynne

* With distinction in Public Health
† With distinction in Forensic Medicine and Toxicology

Part I —J G Hattingh, R E Jackson, G W Phillips, and J Williamson

Diploma in Public Health —W E Haigh, J E Power, J A Scott, and A E Wall

Diploma in Tropical Hygiene —W J Aitken, N Bligh-Peacock, T Cullen, E G A Don, H P Fowler, D Lennox, A G Mackay, F Oppenheimer, S A. Talib, and N S Turnbull

University of Durham —At Convocations held on June 29th and 30th the following medical degrees were conferred —

Doctor of Medicine —Ram Mansoor (*in absentia*), James H Saint (*in absentia*), Margaret Scoresby Jackson, Thomas H. Blench, Charles R Smith, and Edward A Welsh

Doctor of Medicine for Practitioners of 15 Years' Standing —Vincent P Norman

Bachelor of Medicine and Bachelor of Surgery —William B Allan, Max Coll, Dorothy E Crisp, Mabel Dodds, Jessie S Dunlop, William L Fulthorpe, Hugh Gass, Dorothy Hopkinson, James H Horsley, Grace C Howie, Daniel S Jackson, Ernest E Kendall, Kenneth A W Law, John A Livingston, Graeme M Macintyre, Grace E McVitie, Alexander D Miller, Hyman Moross, Myer A Phillips, Mabel Popham, Raymond H Robinson, Henry Rosenbloom, Phyllis Routledge, Reginald C F Smith, Moses M. Suzman, Charlotte M Thomson, Robert Y Carter Arthur D W Cooke, Francis P Forrest, Hugh D Golder, Richard A Goodall, Charles V Harrison, Francis McGuckin, Sidney McD Selby, and Frank G Sinclair

Bachelor of Hygiene —Madge Hopper and George Wilson.

The following received the Diploma in Public Health (D P H) —

Madge Hopper and George Wilson

The following received the Licence in Dental Surgery (L D S) —

John Chalmers, George G Clark, Philip W Eddy, Godfrey E Hutchinson Alexander J Munro, Henry R Myers, and Charles H Richardson

Victoria University of Manchester —At recent examinations the following candidates were successful —

Final M B and Ch.B Examination

* † Kathleen Sheehan (First class Honours) J K Anderson, Florence Whitrow (Second class Honours), George Bridge J F Frank Appleton, Florence M Blades, T K Clifford, Joseph Caithness, Marguerite E Cliff, Alec Fleming, Crowther, Harriet M Dick, Margaret Dyson, E St G Gilmore, F S I H Freedlander, C F Garfit, H B Kilroe, J H Hawkins, †Fanny Howe, T J Kay, Richard Pendle-Kitson, †C T Mills, G S de W Moll, Maurice Sheehan, bury, Marjorie Reekie, C. D Roff, E J Warburton, Olive de la W Turner, W C D Walmsley, and J T Whitley

* Distinction in Medicine
† Distinction in Forensic Medicine

Forensic Medicine, Hygiene, and Preventive Medicine —Lillie M Burton, Joseph Parness, and Mary I Prentice

Hygiene and Preventive Medicine —Pieter Bester, R H Blackburn G W Jones, B R Sandiford, W S Slater, and G R Walker

Obstetrics and Surgery —R H Barnes, Helen G M Bennett, Soloman Bernstein, J W Brooks, Louie J Burton, J F Caithness H V Crabtree, Harriet M Dick, Margaret Dyson, Ralph Edmondson, Margaret Egan, Ernest Firth, I H Freedlander, J S Goller, Ernest Heard, Fanny Howe, E P Johnson, J H Kitson, George Metcalfe, G L Normington, R H Poyser, I M Preston, Marjorie Reekie, Nora Ridehalgh, C D Roff, R F Sheppard, Donald Starr, Florence V Stephen, C E Sykes, and R T Wimmer

Obstetrics —Leonard Rosenthal

Third Examination for M B and Ch B Degrees

Pathology —Leslie Bold H J Brennan, Mary G Davies, G B Hardman, Morris Levine, Kathleen McGowan, Mary E P Mackay, S L Rowley, and Henry Tickle

Pharmacology —M M Barritt ‡G L Brown, Alice M Butterworth, Alexandra W Groves, W S Ramsden, Marian M Reekie, G F Rowbotham, J F Wilkinson, and Frederick Wraith

‡ Distinction in Pharmacology

Diploma in Public Health.

Gladys F A. McLean

Diploma in Bacteriology.

A F. Abbassi and M A Omar

UNIVERSITY OF ABERDEEN—At the Graduation ceremony held on July 9th the following degrees were conferred —

DOCTOR OF MEDICINE

*John Fiddes, † William Buchan, † John S Taylor, Wallace J Gill, and Charles Shearer

* Awarded highest honours for thesis
† Awarded honours for thesis

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY

Charles Anderson, James G Bremner Charles H Cave, *Harry D Christie, Charles C Connochie, James Coutts, Archibald N Forsyth, John W Foster, John L Gammie, Douglas J T Glennie Evelyn Goldie, James R W Hay, Robert W Hendry *William J Hogg, Reginald A M Humphrey, Frederick Hunter, George P Middleton, Alexander Paterson, Catherine Peat Margaret S M Reid, Charles E Saunders Andrew D Sinclair James I Smith, *George Stephen, Arthur J W Wilkins, and Alexander Wood

* Completed Final Examination with distinction

UNIVERSITY OF DUBLIN SCHOOL OF PHYSIC, TRINITY COLLEGE.—At recent examinations the following candidates were successful .—

FINAL MEDICAL EXAMINATION

Part I, *Materia Medica and Therapeutics*, *Medical Jurisprudence and Hygiene Pathology and Bacteriology*—*T J Millin *Cecil P Martin, William J E Jessop, Dermot F Walsh, Henry R F Tweedy, Gordon W F Pratt, Thomas J O'Reilly Richard F W K Allen, Francis O W A Mahon-Daly, Julius Sayers, Harold S North, Alexander J Burden, and Samuel B Dalrymple
Part II, *Medicine*—*Gilbert T L Archer, *Victor St G Vaughan, Robert E Hadden, Herbert A Brittain, James F MacMahon, Annette K Wood Martin John J O'Dwyer, Arthur N B Odbert, Douglas Bluett, Stella C Ross, Albert Sachs, Henry M Nevin George E Dodds Lionel B Somerville Large, Gladys L Craig, Herbert Nelson George S Gardner Victor G Horan, Robert C U Warrington, and Daniel A O'C Quinlan
Surgery—*Henry O Clarke, Thomas J W Keown Robert E Hadden, Ernest E Satchwell John C T Sanctuary Silver M E Deane Oliver, Derek St C Mackenzie Gerald V A Griffith Herbert A Brittain, Henrietta Armstrong Thomas F M Woods, James Craig, Robert H Mitchell, George S Gardner, Margaret H Donaldson, Nancie N Lowther, Evelyn E Connolly, Douglas Bluett, George R L Jordan, John Quigley, Samuel Smyth, George E Dodds, Ernest H Hall, Henry A Ferguson, Isabella K M'Neilly, Ernest E Malone, Menzies L M Cauley, Charles H Wilson, Kathleen I Purdy, James G M Dowell, and Richard T P Tweedy
Midwifery—*Robert R Woods *Solomon Behr, *Robert A Q O'Meara *Wilhelm F Knobel, Edmund P N M Early, Edward G Montgomery, Joseph A Kevin FitzGerald, Evelyn E Connolly, Maiben A W Roberts, Christiaan de Wet Meintjes Ralph W T J Stewart, Gerald S Smyth, Gerald N Taylor, Edward A Ellis, and Herbert Nelson

DIPLOMA IN PUBLIC HEALTH.

Part I—Pauline K O Flanagan
Part II—Anna J O'Reilly and Mary B Quinn

UNIVERSITY OF SHEFFIELD—Mr Denton Guest, M B, was on July 9th appointed to the combined post of demonstrator in pathology and assistant pathologist to the Royal Infirmary

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION, VENTNOR—The Prince of Wales will open the Nurses' Home on Thursday, July 22nd, at 2 30 P M.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION—On Monday, July 19th, at 3 P M., Mr Letchworth will give a special demonstration in clinical ophthalmology at the Royal Eye Hospital, this will be free to all members of the medical profession. An intensive course in medicine, surgery, and the specialties will be held at the Prince of Wales s General Hospital (North-East London Post-Graduate College), Tottenham, N, from July 19th to 31st, daily from 10 30 A.M. to 5 30 P M. It will include demonstrations, operations, general hospital clinics, clinical lectures, and the practice of clinical laboratory methods From July 19th to August 12th, at 5 P M daily, the West End Hospital for Nervous Diseases is to hold a course of lectures on the diagnosis and treatment of common diseases of the nervous system, clinical demonstrations will be included During August courses will be given at the Queen Mary's Hospital for the East End, Stratford (August 23rd to Sept 4th) in medicine, surgery, and the specialties, and at the Queen's Hospital for Children, Hackney-road, London (August 18th to 28th), in diseases of children. Both these courses will last all day Practical courses in anæsthetics are arranged at any time to suit post-graduates and usually last about three weeks Weekly practical courses in obstetrics and child welfare are arranged at the City of London Maternity Hospital (fee £2 2s) Personal application must be made at the Fellowship offices Copies of all syllabuses, of the *Post-Graduate Medical Journal*, and of the General Course programme may be had on application to the Secretary of the Fellowship at 1, Wimpole-street, London, W 1

MR Stanley Baldwin last week laid the foundation stone of the new West London Hospital Chapel

THE Twickenham Urban District Council has received a charter of incorporation and Dr J R Leeson has been elected the first mayor of the new borough

AN EDINBURGH WAITING-LIST—On July 1st the waiting-list of Edinburgh Royal Infirmary was 2169, the largest on record

WEST END HOSPITAL FOR NERVOUS DISEASES—The annual report of this hospital at Gloucester-gate, Regent's Park, records that two extra clinic rooms have been provided in the out-patient department, one of which is devoted to psychotherapy

HOSPITAL ACCOMMODATION AT SWINDON—There has long been a serious difficulty about hospital accommodation at Swindon and the town council has just made purchases of land as sites for a general hospital and a maternity and infant hospital

DONATIONS AND BEQUESTS—Mr William Shaw, of Holywood co Down, gave £1000 to the Royal Victoria Hospital, Belfast to endow a ward to be called "The Shaw Holywood" Ward —Miss Rose Emily Boden of Whittington, Lichfield, left £1000 to the Derbyshire Royal Infirmary

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.—When the foundation-stone of the new school was laid by the Minister of Health on July 7th a message of cordial greeting and renewed acknowledgments was despatched to the Trustees of the Rockefeller Foundation The Minister announced that he was appointing a committee to report to him on the permanent hospital facilities needed by the School Sir Alfred Mond (chairman of the board of management) said that during his own period of office as Minister of Health the Trustees of the Rockefeller Foundation had made their magnificent offer of $2,000,000 for the building and equipment of a school of hygiene It had been necessary to consult the Chancellor of the Exchequer of the day upon a condition of the offer that the British Government should make themselves responsible for the maintenance of the School after it was built. The necessary undertaking was forthcoming In acknowledging the help received from the Senate of the University of London, Sir Alfred Mond cordially acknowledged the debt which the School owed to Sir Cooper Perry Mr Ormsby-Gore (Under-Secretary for the Colonies) spoke of the relation to the Dominions and Colonies of the tropical division of the School, of which he could not exaggerate the importance In British tropical possessions the mortality and sickness rates in many areas were at present appalling If men and women trained to deal with diseases, and still more with the causes of these diseases, could be got to work there the problems could be solved with comparative ease Mr Neville Chamberlain (the Minister of Health) said that although the diagnosis and treatment of tropical diseases must remain in the domain of the specialist, the establishment of this School was a recognition of the fact that tropical medicine and hygiene had now become merged in a wider conception of preventive medicine The Athlone Committee had recommended in 1921 that post-graduate instruction in all branches of public health and hygiene should be concentrated at one institution, which should be an affiliated school of the London University and should have a much wider scope than the training of medical officers of health for the home and colonial services The Athlone report fortunately gave expression to ideas which the Rockefeller Trustees had for some time had in mind and they had accepted that report as an appropriate interpretation of what could be carried out in this country The general lines of the curriculum afforded some indication of the very wide scope of the proposed activities of the School They embraced physiology as applied to hygiene chemistry and biochemistry, bacteriology and immunology, medical biology (this division would absorb the greater part of the work of the old London School of Tropical Medicine), epidemiology and vital statistics, and finally, the group of subjects comprising the practice and principles of sanitary administration and public health The ceremony marked the beginning of a building which was the result of a combination of the two great English-speaking nations and which was probably destined to be famous as the greatest centre in the world of research and instruction in one of the most beneficent of all activities for the human race

In connexion with the foundation of this School, its Director, Dr Andrew Balfour, who has already done so much work in its organisation, is to receive a presentation at 5 30 P M. on July 23rd in the library of the temporary premises of the School at 23, Endsleigh-gardens, N W.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Bethlem Hospital Bill

THE Bethlem Hospital Bill, which has passed through the House of Lords, was read a third time

HOUSE OF LORDS

THURSDAY, JULY 8TH

University of London Bill

The House went into Committee on the University of London Bill, the Earl of **DONOUGHMORE** in the chair

Clause 7 (Provisions as to incorporation of colleges and schools in the University) provides as follows —

(1) No statute made under this Act shall alter the incorporation in the University of the colleges known respectively as University of London, University College, and University of London, King's College, or the vesting, disposition, or management of any emoluments, endowments, trusts, foundations, gifts offices, or institutions in or connected with either of those colleges so far as those matters are or have been regulated respectively by or under the University College, London (Transfer) Act 1905, or the King's College, London (Transfer) Act, 1908, and no such statute shall provide for the incorporation in the University of any school of the University or other college, school, or institution, but if at any time it is agreed between the University and the governing body of either of the first mentioned colleges that it is expedient that as respects that college any such alteration as aforesaid should be made, or if at any time it is agreed between the University and the governing body of any school of the University or other college, school or institution that it is expedient that provision should be made for the incorporation thereof in the University, then, in any such case, it shall be lawful for the University and the governing body jointly to make application to His Majesty in Council for a charter in that behalf, and any charter which His Majesty in Council is pleased to grant upon any such application shall have full effect notwithstanding anything in any Act of Parliament or in any previous charter, deed, or other instrument whatsoever

Earl **BEAUCHAMP** moved after Subsection (1) to insert the following new subsection —

(2) Provided always that no Statute may be made under this Bill affecting any institution which was existing on Jan 1st, 1925, except with the consent of its governing body

He said that on the second reading the Earl of Balfour was good enough to say that he would consider this point, and the amendment had been put down with a view to carrying out his wishes The amendment would exclude existing colleges from the operation of the Bill He hoped that the Government would accept it

Lord **ASKWITH** supported the amendment The Bill was founded on the report of the Committee which dealt with the University as a whole and also in certain respects with the incorporated colleges and schools Clause 7 dealt with certain colleges of the University and said that statutes affecting them should not be altered at all That was perfectly reasonable If any statutes were to be altered it should only be by agreement with the particular colleges The clause provided that new colleges ought only be incorporated by agreement In Clause 4 there was a provision concerning existing colleges, but that clause was confined to cases where statutes were made not being statutes of the University There seemed, therefore, to be a gap

The Earl of **BALFOUR**, Lord President of the Council, said that the powers given to the University of making conditions with regard to these matters were distinctly excluded with regard to existing schools Where, then, was the danger against which the noble earl wished to guard? If it was really felt that with regard to the future of the colleges or with regard to any of the present colleges some safeguard in regard to religion was required His Majesty's Government had no objection to it The whole object of this Bill was to improve the position of the constituent bodies They did the teaching work of the University and it was their prosperity which was chiefly necessary if the internal side of the University was to carry out the functions which they all desired to see it exercise The notion that they were going to reform the University without in any way affecting the constituent colleges was evidently illusory In these circumstances he felt sure that the noble earl would not press his amendment in its present form

Viscount **HALDANE** said that he entirely agreed with what the Earl of Balfour had said The amendment would paralyse the work of the Commissioners and make it impossible for them to do a number of things for which they were looking It would be infinitely better to take the Bill as it stood, which restricted the powers of the Commissioners to the substance of the plan in the report and enabled them to survey the whole field and to deal with it in the only way in which it could be dealt with As to what outside colleges should come in, that was a question only to be decided by the Commissioners after examining the evidence

The amendment was by leave withdrawn, and the Bill passed through Committee and was reported to the House

HOUSE OF COMMONS

THURSDAY, JULY 8TH

Progress of Housing in England and Wales

Mr **HERBERT WILLIAMS** asked the Minister of Health if he was now in a position to state the total number of houses completed in England and Wales in the 12 months ended March 31st, 1926 —Mr **NEVILLE CHAMBERLAIN** replied The total number of houses completed in England and Wales during the year ended March 31st, 1926, was 173,426—106,987 with State assistance and 66,439 without State assistance

Registration of Manipulative Practitioners

Colonel **DAY** asked the Minister of Health if would consider an inquiry into manipulative surgery with a view to the recognition and registration of manipulative practitioners —Mr **NEVILLE CHAMBERLAIN** replied No, Sir This question was fully discussed in the debate on Feb 9th on the motion of the hon Member for London University and I have nothing to add to the statement which I then made

Appointment of a Lay Member of the G M C

Mr **ERSKINE** asked the Vice-Chamberlain of the Household, as representing the Lord President of the Council what was the object in appointing a lay member on the General Medical Council —Major **HENNESSY** replied It would be contrary to practice to disclose the grounds upon which the Privy Council advised His Majesty to make the recent appointment No doubt my hon friend is acquainted with public discussion which has taken place in connexion with the constitution of the General Medical Council

Sir N **GRATTAN DOYLE** asked whether the appointment of a lay member signified any change of policy from that adopted by the General Medical Council in regard to Dr Axham.—Major **HENNESSY** I cannot answer that question, but I do not think so

Mr **ERSKINE** Is the hon and gallant gentleman aware that Dr Cowie, a registered practitioner, was now acting in the same capacity as Dr Axham had acted in times gone by to Mr (now Sir H) Barker

The **SPEAKER** said that seemed to involve individuals and might carry some implication which was not plain to him at the moment For that reason he would like to see the question in writing before it was put

Mr **MACQUISTEN** asked if it was not the case that the appointment of a lay member on the General Medical Council was to abate the autocracy of the medical profession and to dilute the fanatical trade unionism with which they were obsessed?

The **SPEAKER** said that the hon. Member must try to abate some of his adjectives

MONDAY, JULY 12TH

Medical Inspection of Maternity Homes

Mr **PENNY** asked the Minister of Health whether, in view of the inability of nursing association committees to deal with the technical side of their activities, he would introduce legislation enforcing the composition of an advisory committee of local medical men in all cases in addition to the regulations for inspection now in force —Sir **KINGSLEY WOOD** replied It is clearly desirable that a nursing association which undertakes the management of an institution such as a maternity home should have the benefit of medical advice, but my right hon friend doubts whether it would be expedient to attempt to enforce, by legislation, such a condition as my hon friend suggests

Mr **PENNY** asked if the hon gentleman would consider any alternative way of doing this As these institutions were to a very large extent local institutions, would it not be better if local medical men inspected them periodically?

Sir K **WOOD** My right hon friend, as the hon Member knows, has already made various suggestions with regard to this particular case, with a view to improvement, and if my hon friend has any suggestion to make I have no doubt that he will consider it

External Degrees at London University

Mr **HORE-BELISHA** asked the President of the Board of Education whether the Government proposed to take steps by legislation to set up a statutory commission to give effect to the report of the Departmental Committee on London University, which would favour the abolishing of the external degrees of that University —Lord E **PERCY** replied The Government have introduced a Bill in another place to set up a Statutory Commission to give effect to the recommendations of the Departmental Committee But if the hon Member will look at paragraph 8 of the Committee's report he will see that it is explicitly stated that none of their recommendations is in any way designed to restrict the present facilities available for external students, or to prevent their development This statement corresponds with the views of the Government and it will be the duty of the Statutory Commission under the Bill to carry out the Committee's intentions in this matter

Infectious Illness among Members of the O T C

Mr RENNIE SMITH asked the Secretary of State for War if he could give an analysis of the infectious illness of 3660 members of the junior division of the Officers' Training Corps who were for this reason prevented from attending camp in 1925 —Sir L WORTHINGTON-EVANS There are no records in possession of the department from which the desired information could be furnished as the boys in question did not attend camp I might add that it would be erroneous to assume that the 3660 members in question were ill. The great majority were "contacts" who are not allowed to attend camp owing to the risk of spreading infection

TUESDAY, JULY 13TH

PROGRESS OF PUBLIC HEALTH

The House went into Committee of Supply on the Ministry of Health vote, Mr J F HOPE in the chair

On a vote of £18 117 048 for the salaries and expenses of the Department and other expenses in connexion with housing grants to local authorities for public health services, National Health Insurance administration, &c

Mr NEVILLE CHAMBERLAIN (Minister of Health) said that cancer was increasing at an alarming rate Last year in this country, 1336 deaths from cancer occurred per 1 000,000, which was equivalent in our population to the death of 50,000 persons It had been estimated that out of every seven persons in this country who reached the age of 30 one would die of cancer It was important that the public should be educated so that the disease could be treated in its early stages The significance of the discovery of Dr Gye and Mr Barnard was that cancer was due to a virus which entered the body from outside, but which did not produce cancer until it was associated in the body with some other factor, the nature of which had not yet been clearly ascertained The right hon gentleman directed the attention of local authorities to the experiment which was being carried out at Papworth, near Cambridge, by Dr Varrier-Jones in regard to the after treatment of tuberculosis Here, he said, was a chance for one of our big progressive local authorities to start a settlement of its own on Papworth lines Dealing with small-pox, Mr Chamberlain stated that the disease was rapidly increasing in this country The number of cases were as follows —In 1922, 973, 1923, 2500, 1024 3800, 1025, 5300, and in the first six months of this year, 5500 cases This increase could not be regarded without a great deal of anxiety It was true that at the present time the disease was present in a very mild form, but in the past they had had this mild form coexisting with a form which was one of the most deadly and depressing of maladies If this virulent form were to reappear, those who fulminated against vaccination would rush to the vaccination officer for protection. Vaccination in connexion with small-pox was regarded wtih prejudice by a large number of people but of course, our vaccination laws were framed a good many years ago, and knowledge had increased and widened since then At present there were 70 different diseases, to secure immunity against which vaccination was practised Small-pox was the only disease in regard to which compulsory vaccination was applied It might be that the very fact that this particular disease was picked out and separated from the others for this exceptional legislative treatment had served to inflame the fanatical feelings against it which had led to so large a proportion of the population going without vaccination At any rate he had recently set up a Committee under the chairmanship of Sir H. D Rolleston, then President of the Royal College of Physicians to investigate the whole subject, and he was content for the present to await that report and any recommendation which they might make on the subject The only other disease which he would say a word about was sleepy sickness He thought a good deal of alarm had been created in this country by the very distressing after-effects of this disease There had been some very painful cases of after-effects showing the moral changes due to this particular complaint and it was unfortunately the case that as matters stood at present there was considerable difficulty in giving what they might regard as proper treatment to cases of this kind The legal definition of mental deficiency would not cover cases of persons who had been affected by *Encephalitis lethargica* There was something in certification for lunacy which was quite inappropriate for cases of this kind. That was a matter which was engaging his very serious attention, and it might be that he would have proposals to make to Parliament before very long to meet it In the meantime it might reassure hon Members to know that the disease appeared to be distinctly on the wane In 1924 the number of cases was 5039 In 1925 it came down to 2635, and therefore he thought they were justified in drawing the conclusion that this complaint which appeared so suddenly and developed so rapidly had reached its maximum and was now passing away; and that soon it would become, not a matter which could be neglected but one which would no longer give them serious concern and anxiety There were many other subjects which he had not touched upon If he had not said anything about the details of maternity and child welfare or venereal disease, or the much larger question of the future of the voluntary hospitals, it was not because he underrated their importance, but merely because he recognised that there must be some limit even to the patience and toleration of the Committee. He hoped however that he had said enough to show the huge extent of the field which was covered by his department and to point to the earnestness, and he thought also on the whole to the success with which they were grappling with the problems which confront them

Mr A GREENWOOD moved to reduce the vote by £100

Lieut -Colonel FREMANTLE said that the newspapers were full of statements with regard to the starvation of the children of the miners but he had seen no evidence in support of those assertions On the other hand, evidence from medical clinics and welfare centres went to show that the health of the children was better now than before the strike. Dealing with the question of deaths in childbirth Lieut -Colonel Fremantle said that in the interesting report on public health published for 1924, there were very serious figures showing how unprogressive had been the treatment of that question. Although there had been a considerable reduction in maternal mortality, it had not been anything in proportion to the reduction in infantile mortality Much more than that, there had been an actual increase in the mortality of women in childbirth. This showed that there was great room for an increase in the number of beds in maternity homes, especially in view of the lack of proper accommodation in working-class homes He was of opinion at the same time, that maternity homes should be regarded, not as permanent institutions, but as makeshifts until proper accommodation for maternity cases was provided in all homes In regard to town planning from the health point of view they saw really no earnestness on the part of local authorities to take the matter up Another question of great importance was the supply of clean milk. There was no provision for the supervision of health in coal-mines They heard of certain diseases among the men which were exceedingly troublesome The Ministry of Health ought to take up the attitude, more and more, of being responsible for the health of the people in every department, and of knowing what health conditions were all over the country

Dr VERNON DAVIES said that it was true that for the last 50 years there had been a very happy and steady decrease in the rate of tuberculosis, except in the war years 1913 to 1918 when, for temporary reasons, there was an increase But, despite that decrease, consumption was still our great white scourge, which took a terrible toll of the younger people Dealing with the machinery at the Ministry of Health for dealing with the disease, Dr Davies paid a tribute to the work of the panel practitioner who, he said, was the first link in the system of treatment The Ministry had added to the panel doctor the tuberculosis officers, who were expert in the diagnosis and treatment of consumption To get the full benefit of sanatorium treatment the cases must be taken early The great failure in the system of the Ministry of Health was the lack of village settlements and the Minister of Health ought to give a lead in that matter The Ministry should divide the cases of tuberculosis into two groups, those that could be cured and those which were too far advanced Sanatoria should be kept absolutely for the curable cases and the unfortunate people who could not be cured should be removed from their homes to the Poor-law hospitals His visit to Mr Spahlinger had convinced him that he had made out a *prima facie* case for his treatment The difficulty lay with Mr Spahlinger He was one of the most charming men and the very soul of honour He was a wonderfully clever scientist and was working on strictly scientific lines His whole object was the alleviation of distress among his fellow beings, and his determination if possible to stamp out the disease He was without the slightest desire for money But they found a difficulty in tying him down to any definite legal agreement. Now he had no money at all having spent £80 000 in his experiments for the good of humanity, and he was living from hand to mouth by taking odd patients who gave a subscription or donation to his institution. The one essential thing for Mr Spahlinger was to be able to produce his

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Bethlem Hospital Bill

THE Bethlem Hospital Bill, which has passed through the House of Lords, was read a third time

HOUSE OF LORDS

THURSDAY, JULY 8TH

University of London Bill

The House went into Committee on the University of London Bill, the Earl of DONOUGHMORE in the chair

Clause 7 (Provisions as to incorporation of colleges and schools in the University) provides as follows —

> (1) No statute made under this Act shall alter the incorporation in the University of the colleges known respectively as University of London, University College, and University of London, King's College, or the vesting, disposition, or management of any emoluments, endowments trusts, foundations, gifts offices, or institutions in or connected with either of those colleges so far as those matters are or have been regulated respectively by or under the University College, London (Transfer) Act 1905, or the King's College, London (Transfer) Act, 1908, and no such statute shall provide for the incorporation in the University of any school of the University or other college, school, or institution, but if at any time it is agreed between the University and the governing body of either of the first mentioned colleges that it is expedient that as respects that college any such alteration as aforesaid should be made, or if at any time it is agreed between the University and the governing body of any school of the University or other college, school or institution that it is expedient that provision should be made for the incorporation thereof in the University, then, in any such case, it shall be lawful for the University and the governing body jointly to make application to His Majesty in Council for a charter in that behalf, and any charter which His Majesty in Council is pleased to grant upon any such application shall have full effect notwithstanding anything in any Act of Parliament or in any previous charter, deed, or other instrument whatsoever

Earl BEAUCHAMP moved after Subsection (1) to insert the following new subsection —

> (2) Provided always that no Statute may be made under this Bill affecting any institution which was existing on Jan 1st, 1925, except with the consent of its governing body

He said that on the second reading the Earl of Balfour was good enough to say that he would consider this point, and the amendment had been put down with a view to carrying out his wishes The amendment would exclude existing colleges from the operation of the Bill He hoped that the Government would accept it

Lord ASKWITH supported the amendment The Bill was founded on the report of the Committee which dealt with the University as a whole and also in certain respects with the incorporated colleges and schools Clause 7 dealt with certain colleges of the University and said that statutes affecting them should not be altered at all That was perfectly reasonable If any statutes were to be altered it should only be by agreement with the particular colleges The clause provided that new colleges ought only be incorporated by agreement In Clause 4 there was a provision concerning existing colleges, but that clause was confined to cases where statutes were made not being statutes of the University There seemed, therefore, to be a gap

The Earl of BALFOUR, Lord President of the Council, said that the powers given to the University of making conditions with regard to these matters were distinctly excluded with regard to existing schools Where, then, was the danger against which the noble earl wished to guard? If it was really felt that with regard to the future of the colleges or with regard to any of the present colleges some safeguard in regard to religion was required His Majesty's Government had no objection to it The whole object of this Bill was to improve the position of the constituent bodies They did the teaching work of the University and it was their prosperity which was chiefly necessary if the internal side of the University was to carry out the functions which they all desired to see it exercise The notion that they were going to reform the University without in any way affecting the constituent colleges was evidently illusory In these circumstances he felt sure that the noble earl would not press his amendment in its present form

Viscount HALDANE said that he entirely agreed with what the Earl of Balfour had said The amendment would paralyse the work of the Commissioners and make it impossible for them to do a number of things for which they were looking It would be infinitely better to take the Bill as it stood, which restricted the powers of the Commissioners to the substance of the plan in the report and enabled them to survey the whole field and to deal with it in the only way in which it could be dealt with As to what outside colleges should come in that was a question only to be decided by the Commissioners after examining the evidence

The amendment was by leave withdrawn, and the Bill passed through Committee and was reported to the House

HOUSE OF COMMONS

THURSDAY, JULY 8TH

Progress of Housing in England and Wales

Mr HERBERT WILLIAMS asked the Minister of Health if he was now in a position to state the total number of houses completed in England and Wales in the 12 months ended March 31st, 1926 —Mr NEVILLE CHAMBERLAIN replied The total number of houses completed in England and Wales during the year ended March 31st, 1926, was 173,426—106,987 with State assistance and 66,439 without State assistance

Registration of Manipulative Practitioners

Colonel DAY asked the Minister of Health if would consider an inquiry into manipulative surgery with a view to the recognition and registration of manipulative practitioners —Mr NEVILLE CHAMBERLAIN replied No, Sir This question was fully discussed in the debate on Feb 9th on the motion of the hon Member for London University and I have nothing to add to the statement which I then made

Appointment of a Lay Member of the G M C

Mr ERSKINE asked the Vice-Chamberlain of the Household, as representing the Lord President of the Council what was the object in appointing a lay member on the General Medical Council —Major HENNESSY replied It would be contrary to practice to disclose the grounds upon which the Privy Council advised His Majesty to make the recent appointment No doubt my hon friend is acquainted with public discussion which has taken place in connexion with the constitution of the General Medical Council

Sir N GRATTAN DOYLE asked whether the appointment of a lay member signified any change of policy from that adopted by the General Medical Council in regard to Dr Axham —Major HENNESSY I cannot answer that question, but I do not think so

Mr ERSKINE Is the hon and gallant gentleman aware that Dr Cowie a registered practitioner, was now acting in the same capacity as Dr Axham had acted in times gone by to Mr (now Sir H) Barker

The SPEAKER said that seemed to involve individuals and might carry some implication which was not plain to him at the moment For that reason he would like to see the question in writing before it was put

Mr MACQUISTEN asked if it was not the case that the appointment of a lay member on the General Medical Council was to abate the autocracy of the medical profession and to dilute the fanatical trade unionism with which they were obsessed?

The SPEAKER said that the hon Member must try to abate some of his adjectives

MONDAY, JULY 12TH

Medical Inspection of Maternity Homes

Mr PENNY asked the Minister of Health whether, in view of the inability of nursing association committees to deal with the technical side of their activities, he would introduce legislation enforcing the composition of an advisory committee of local medical men in all cases in addition to the regulations for inspection now in force —Sir KINGSLEY WOOD replied It is clearly desirable that a nursing association which undertakes the management of an institution such as a maternity home should have the benefit of medical advice, but my right hon friend doubts whether it would be expedient to attempt to enforce, by legislation, such a condition as my hon friend suggests

Mr PENNY asked if the hon gentleman would consider any alternative way of doing this As these institutions were to a very large extent local institutions, would it not be better if local medical men inspected them periodically?

Sir K WOOD My right hon. friend, as the hon Member knows, has already made various suggestions with regard to this particular case, with a view to improvement, and if my hon friend has any suggestion to make I have no doubt that he will consider it.

External Degrees at London University

Mr HORE-BELISHA asked the President of the Board of Education whether the Government proposed to take steps by legislation to set up a statutory commission to give effect to the report of the Departmental Committee on London University, which would favour the abolishing of the external degrees of that University —Lord E PERCY replied The Government have introduced a Bill in another place to set up a Statutory Commission to give effect to the recommendations of the Departmental Committee But if the hon Member will look at paragraph 8 of the Committee's report he will see that it is explicitly stated that none of their recommendations is in any way designed to restrict the present facilities available for external students, or to prevent their development This statement corresponds with the views of the Government and it will be the duty of the Statutory Commission under the Bill to carry out the Committee s intentions in this matter

Infectious Illness among Members of the O T C

Mr **Rennie Smith** asked the Secretary of State for War if he could give an analysis of the infectious illness of 3660 members of the junior division of the Officers Training Corps who were for this reason prevented from attending camp in 1925 —Sir L. **Worthington-Evans** There are no records in possession of the department from which the desired information could be furnished as the boys in question did not attend camp I might add that it would be erroneous to assume that the 3660 members in question were ill The great majority were "contacts" who are not allowed to attend camp owing to the risk of spreading infection

Tuesday, July 13th

Progress of Public Health

The House went into Committee of Supply on the Ministry of Health vote, Mr J F **Hope** in the chair

On a vote of £18 117 048 for the salaries and expenses of the Department and other expenses in connexion with housing grants to local authorities for public health services, National Health Insurance administration &c

Mr **Neville Chamberlain** (Minister of Health) said that cancer was increasing at an alarming rate Last year in this country 1336 deaths from cancer occurred per 1 000,000, which was equivalent in our population to the death of 50,000 persons It had been estimated that out of every seven persons in this country who reached the age of 30 one would die of cancer It was important that the public should be educated so that the disease could be treated in its early stages The significance of the discovery of Dr Gye and Mr Barnard was that cancer was due to a virus which entered the body from outside, but which did not produce cancer until it was associated in the body with some other factor, the nature of which had not yet been clearly ascertained The right hon gentleman directed the attention of local authorities to the experiment which was being carried out at Papworth, near Cambridge, by Dr Varrier-Jones in regard to the after treatment of tuberculosis Here, he said, was a chance for one of our big progressive local authorities to start a settlement of its own on Papworth lines Dealing with small-pox Mr Chamberlain stated that the disease was rapidly increasing in this country The number of cases were as follows :—In 1922 973, 1923 2500 1924, 3800 1925, 5300 and in the first six months of this year, 5500 cases This increase could not be regarded without a great deal of anxiety It was true that at the present time the disease was present in a very mild form, but in the past they had had this mild form coexisting with a form which was one of the most deadly and depressing of maladies If this virulent form were to reappear, those who fulminated against vaccination would rush to the vaccination officer for protection. Vaccination in connexion with small-pox was regarded wtih prejudice by a large number of people but of course, our vaccination laws were framed a good many years ago, and knowledge had increased and widened since then. At present there were 70 different diseases, to secure immunity against which vaccination was practised Small-pox was the only disease in regard to which compulsory vaccination was applied It might be that the very fact that this particular disease was picked out and separated from the others for this exceptional legislative treatment had served to inflame the fanatical feelings against it which had led to so large a proportion of the population going without vaccination At any rate he had recently set up a Committee under the chairmanship of Sir H D Rolleston, then President of the Royal College of Physicians to investigate the whole subject and he was content for the present to await that report and any recommendation which they might make on the subject The only other disease which he would say a word about was sleepy sickness He thought a good deal of alarm had been created in this country by the very distressing after-effects of this disease There had been some very painful cases of after-effects showing the moral changes due to this particular complaint and it was unfortunately the case that as matters stood at present there was considerable difficulty in giving what they might regard as proper treatment to cases of this kind The legal definition of mental deficiency would not cover cases of persons who had been affected by *Encephalitis lethargica* There was something in certification for lunacy which was quite inappropriate for cases of this kind That was a matter which was engaging his very serious attention, and it might be that he would have proposals to make to Parliament before very long to meet it In the meantime it might reassure hon Members to know that the disease appeared to be distinctly on the wane In 1924 the number of cases was 5039 In 1925 it came down to 2635, and therefore he thought they were justified in drawing the conclusion that this complaint which appeared so suddenly and developed so rapidly had reached its maximum and was now passing away, and that soon it would become, not a matter which could be neglected but one which would no longer give them serious concern and anxiety There were many other subjects which he had not touched upon If he had not said anything about the details of maternity and child welfare or venereal disease or the much larger question of the future of the voluntary hospitals, it was not because he underrated their importance, but merely because he recognised that there must be some limit even to the patience and toleration of the Committee He hoped, however that he had said enough to show the huge extent of the field which was covered by his department and to point to the earnestness, and he thought also on the whole to the success with which they were grappling with the problems which confront them

Mr **A. Greenwood** moved to reduce the vote by £100

Lieut -Colonel **Fremantle** said that the newspapers were full of statements with regard to the starvation of the children of the miners but he had seen no evidence in support of those assertions On the other hand evidence from medical clinics and welfare centres went to show that the health of the children was better now than before the strike Dealing with the question of deaths in childbirth Lieut -Colonel Fremantle said that in the interesting report on public health published for 1924 there were very serious figures showing how unprogressive had been the treatment of that question Although there had been a considerable reduction in maternal mortality, it had not been anything in proportion to the reduction in infantile mortality. Much more than that there had been an actual increase in the mortality of women in childbirth. This showed that there was great room for an increase in the number of beds in maternity homes, especially in view of the lack of proper accommodation in working-class homes He was of opinion at the same time, that maternity homes should be regarded, not as permanent institutions, but as makeshifts until proper accommodation for maternity cases was provided in all homes In regard to town planning from the health point of view they saw really no earnestness on the part of local authorities to take the matter up Another question of great importance was the supply of clean milk. There was no provision for the supervision of health in coal-mines They heard of certain diseases among the men which were exceedingly troublesome. The Ministry of Health ought to take up the attitude, more and more, of being responsible for the health of the people in every department, and of knowing what health conditions were all over the country

Dr **Vernon Davies** said that it was true that for the last 50 years there had been a very happy and steady decrease in the rate of tuberculosis, except in the war years 1913 to 1918, when for temporary reasons, there was an increase But, despite that decrease, consumption was still our great white scourge which took a terrible toll of the younger people Dealing with the machinery at the Ministry of Health for dealing with the disease, Dr Davies paid a tribute to the work of the panel practitioner who, he said, was the first link in the system of treatment. The Ministry had added to the panel doctor the tuberculosis officers, who were expert in the diagnosis and treatment of consumption To get the full benefit of sanatorium treatment the cases must be taken early The great failure in the system of the Ministry of Health was the lack of village settlements and the Minister of Health ought to give a lead in that matter The Ministry should divide the cases of tuberculosis into two groups, those that could be cured and those which were too far advanced Sanatoria should be kept absolutely for the curable cases and the unfortunate people who could not be cured should be removed from their homes to the Poor-law hospitals His visit to Mr Spahlinger had convinced him that he had made out a *prima facie* case for his treatment The difficulty lay with Mr Spahlinger He was one of the most charming men and the very soul of honour He was a wonderfully clever scientist and was working on strictly scientific lines His whole object was the alleviation of distress among his fellow beings, and his determination if possible to stamp out the disease He was without the slightest desire for money But they found a difficulty in tying him down to any definite legal agreement Now he had no money at all, having spent £80 000 in his experiments for the good of humanity, and he was living from hand to mouth by taking odd patients who gave a subscription or donation to his institution. The one essential thing for Mr Spahlinger was to be able to produce his serum and enlarge his laboratory and stock He (Dr Davies) appealed to the Minister of Health to vote a certain sum, say, £50,000 or £100,000, to Mr Spahlinger for the purposes of his research work

Dr Watts said that the vaccination laws were administered in too lax a manner Only a small proportion of infants were vaccinated This was due more to the carelessness of parents than to conscientious objection to vaccination Yet there were very few prosecutions for breaches of the law The increase in the number of cases of small-pox was due to this laxity, and it also explained the action taken by foreign countries, such as the United States, to see that British sailors were vaccinated before they were allowed to land

Dr Haden Guest said that he thought that Mr Spahlinger's work might be of value, but it was an occasion for private rather than public enterprise He hoped that something might be done in that way He thought he was speaking for medical opinion as a whole when he said that the real way of dealing with tuberculosis was by preventive rather than curative methods If, for instance, they could make such an improvement in the standard of life of the people in this country that everybody every day in the year would have an adequate amount of food and would not do an excessive amount of work, the consumption statistics would fade almost out of existence He thought that experiments which had been undertaken in providing workshops for men who had been discharged from sanatoria, where they could learn to take up life again under normal conditions, were on the right lines, and would be of great assistance to such men

Sir M Macnaghten referred to a letter issued by the Ministry of Health to the Edmonton District Council, which, he said, placed an absolute prohibition on a doctor in a maternity centre giving advice or information to a woman on the subject of birth control The letter stated that while a doctor could not give the advice himself, he might refer the woman for advice to a private practitioner or to a hospital If the instruction was not complied with, the grant would be withdrawn. Obviously, he said, maternity centres ought not to be converted into birth control clinics, but all that was asked was that in the case of a poor woman a doctor should be in a position to give this advice and information without incurring the penalty attached to the instructions of the Ministry

Dr Shiels said he associated himself with other speakers in appreciation of the results of the Spahlinger treatment, but there were considerable difficulties to be faced He thought that the Minister should keep his mind open in regard to the possibility of acquiring this treatment for those who suffered from tuberculosis He was glad that the Ministry would encourage local authorities to show initiative in the establishment of village settlements Sunlight and artificial sunlight treatment had a great effect on certain types of tuberculosis, especially surgical tuberculosis There had been some misunderstanding of the position of the Ministry in the matter, because many local authorities had the impression that the Ministry did not encourage the setting up of installations for this treatment He hoped the misunderstanding would be cleared up, because the treatment was long past the experimental stage It was also of great value in the treatment of rickets in children The milk-supply of this country was by no means what it should be, and was far behind that of the United States The Ministry should continue its efforts to try to eliminate tuberculous milk altogether This country consumed, per head of the population, far too little milk, but they could not really urge mothers to give their children more milk unless they were sure that it was safe More broad-mindedness should be shown, also, in the allocation of financial assistance for cancer research

Sir Kingsley Wood, replying to the debate, said that undoubtedly the corner had been turned so far as housing was concerned, and at last they were beginning to catch up the shortage He could give an assurance that whatever decision was reached in regard to the housing subsidy in October, no alteration would be made in the financial contributions for the removal of slums Thanks to the Economy Bill, the Minister had now been able to give the following increases and additional benefits to all men belonging to the Army and Navy They would have an extra sickness benefit over and above the ordinary amount received of 3*s* a week, making the total up to 18*s* The disablement benefit would be increased by 1*s* 6*d* a week making a total of 9*s* a week The maternity benefit would be increased by 6*s*, making the maternity benefit to people in the Army, Navy, and Air Force Insurance Fund up to no less than 46*s* They would also receive extra benefits in the way of dental and ophthalmic treatment In regard to the Spahlinger treatment, offers had been made to Mr Spahlinger, and it was no fault of the various Ministers of Health that no further trial had been made in this matter It was utterly impossible for the Minister of Health to make a gamble of £100,000 in the present circumstances In regard to the question of medical men being allowed to give advice on birth control at maternity centres before the Minister could make an alteration in public policy on that matter, there must be a much greater measure of public opinion behind it

The amendment to reduce the vote was rejected by 255 votes to 107, and the debate was adjourned

Doctors on British Cargo Ships

Mr Ponsonby asked the President of the Board of Trade with what number of crew and passengers British cargo ships were allowed to sail without having any doctor on board whether this number was fixed by departmental regulation, and was he satisfied that no hardship was involved by the absence of a doctor on ships not carrying the requisite number, more especially in cases where the ship was not fitted with wireless apparatus —Sir P Cunliffe-Lister replied Section 209 of the Merchant Shipping Act, 1894, requires a doctor to be carried on every foreign-going ship having 100 persons or upwards on board I think in all the circumstances the rule is a reasonable one The hon Member will appreciate that it would be impracticable to compel ships of a size so small as to be exempt from carrying a wireless apparatus to maintain a doctor

Payment of Sickness Benefit in Scotland

Mr Johnston asked the Under-Secretary to the Scottish Board of Health whether he was aware of the delays which took place in Scotland in the payment of sickness benefit to persons insured under the National Health Insurance Act, and whether he would take steps to prevent health insurance societies delaying payments of sickness benefit while corrections of a trivial and technical nature were being made on the claim form or the proposal form where these conflicted —Major Elliot replied I am not aware that any considerable delay takes place in Scotland in the payment of sickness benefit to insured persons This question was recently considered by the Royal Commission on National Health Insurance, to whom evidence was submitted by the Scottish Board of Health on an analysis of 8000 cases Of this number it was found that more than 83 per cent of the insured persons involved received payment within four days to a week of the dates of the claims, about 14 per cent received payment within 14 days, and that therefore only a very small residue of cases were delayed longer than a fortnight, sometimes on account of causes for which the insured persons were themselves responsible I do not think therefore that any action on my part is called for such as is suggested in the second part of the question, but if any case where avoidable delay has taken place is brought to my notice I shall make inquiries

Pure Milk Regulations

Colonel Day asked the Minister of Health when the pure milk regulations were likely to be brought into effect —Sir Kingsley Wood replied The Milk and Dairies Order, 1926, will come into operation on Oct 1st next The Public Health (Imported Milk) Regulations, 1926, will come into operation on Jan 1st, 1927

Brigadier-General Clifton Brown asked the Minister of Health what steps were taken to ensure that foreign condensed skimmed milk and other milk products imported from abroad were free from deleterious matter and whether, in view of the proposed milk and dairy orders enforcing milk producers in this country to provide clean milk, he would prevent distributors in this country mixing British milk with any imported substance —Sir Kingsley Wood replied The Public Health (Imported Milk) Regulations, 1926, impose a standard for the bacterial content of imported milk and require it to be free from tubercle bacilli I am sending my hon, and gallant friend a copy of those Regulations and also of the Public Health (Imported Food) Regulations, 1925 I may further refer him to the provisions of Section 1 of the Sale of Food and Drugs Act 1899, which deals with the importation of adulteration or impoverished milk or cream The addition of any dried or condensed milk or any fluid reconstructed therefrom or any skimmed milk or separated milk to milk intended for sale is prohibited by Section 4 of the Milk and Dairies (Amendment) Act, 1922

THE LANCET · SUBSCRIPTION RATES

INLAND	One Year	£2 2 0
	Six Months	1 1 0
	Three Months	0 10 6
ABROAD	One Year	2 10 0
	Six Months	1 5 0
	Three Months	0 12 6

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole street W

TUESDAY, July 20th.—GENERAL MEETING OF FELLOWS 5 30 P.M., Ballot for Election to the Fellowship

BIOCHEMICAL SOCIETY.

TUESDAY, July 20th.—11 A.M., Joint Meeting of the Biochemical Society with the London Section of the Society of Chemical Industry (in the Regent Rooms Hotel Great Central) on the Scientific and Industrial Problems presented by the Hormones—the Natural Drugs of the Body Chairman. The Rt Hon Sir Alfred Mond M.P Papers will be read by: Dr H H. Dale The Experimental Study and Use of Hormones Dr H. W. Dudley The Chemistry of the Pituitary Gland and of Insulin Mr F H Carr The Commercial Production of Hormones Dr H A. D Jowett The History of Adrenaline Prof. G Barger Recent Progress in the Chemistry of Thyroxine Dr J W Trevan Biological Assay of Hormones A general discussion will follow the papers

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street, W

MONDAY, July 19th, to SATURDAY, July 24th.—Special afternoon demonstration in Clinical Ophthalmology at the Royal Eye Hospital, St George s Circus S E., on July 19th, at 3 P M by Mr Letchworth. Open to all members of the medical profession without fee —PRINCE OF WALES S GENERAL HOSPITAL, Tottenham, N; Intensive Course in Medicine, Surgery, and the Specialties Daily, 10 30 A.M. to 5 30 P.M. Clinical and laboratory methods, demonstrations, operations general hospital clinics and clinical lectures —WEST END HOSPITAL FOR NERVOUS DISEASES Welbeck-street, W. A series of lectures, including clinical demonstrations on selected cases, on the diagnosis and treatment of common diseases of the nervous system. Daily, 5 P.M. Monday to Friday inclusive —ROYAL EYE HOSPITAL, St George s Circus Southwark, S E. A series of demonstrations on the diagnosis and treatment of diseases of the eye. Daily at 3 P.M. Further information from the Secretary of the Fellowship

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales s General Hospital, Tottenham, N.

MONDAY, July 19th, to SATURDAY, July 31st.—Special Vacation Course First week daily to Friday 10 30 A.M. to 12 45 P.M. Demonstrations of clinical and "side-room" methods 2 P.M. to 2 45 P.M., Demonstrations of Groups of Clinical Cases. 2 30 P.M. onwards General Hospital Work, Clinics &c 4.30 P.M., Clinical Lectures. Monday, Dr T Watts Eden Antenatal Care as it Affects the Child in utero Tuesday, Dr F G Crookshank Influenza. Wednesday, Mr. E Gillespie Colitis from the Surgical Aspect Thursday Mr. J Howell Evans Intestinal Diverticula and Diverticulitis Friday Dr C E. Sundell. Abdominal Tuberculosis in Children.

SATURDAY.—11 A.M. Dr F Thomson: Demonstration of Cases illustrating the Early Diagnosis and Treatment of the Infectious Fevers (at the North-Eastern Fever Hospital St Ann s road N)

LONDON SCHOOL OF DERMATOLOGY, St John s Hospital, Leicester-square W C

TUESDAY July 20th.—5 P.M., Dr H. W. Barber Scleroderma.

THURSDAY July 22nd.—5 P.M., Dr J H. Sequeira. Skin Affections of Animals Transmissible to Man.

Appointments.

HORSFORD CYRIL, M D Edin., F R.C.S has been appointed Hon. Laryngologist to the Royal College of Music.

PARKER, W M.B, Ch.B Edin. D P.H., County Medical Officer Worcestershire

PLATT H, M.D Manch., M.S Lond. F R.C.S Eng Honorary Clinical Lecturer in Orthopædics in the University of Manchester

WILLIAMS ANNA M. M.B Edin., D.P H, Assistant Medical Officer, Birkenhead.

WOODMAN MUSGRAVE, M.S Lond., F.R.C S Eng Lecturer, Diseases of the Nose and Throat University of Birmingham.

Sheffield Royal Hospital HOLMES, E. M.B, M R.C S, Resident Surgical Officer FRIZELLA, E., M.B M.Ch. Casualty Officer FLINT R. L M B B Ch. JAGO, J W M.B, Ch.B House Surgeons BEATTIE, W. M.B, Ch B, SYKES E. M B Ch.B House Physicians: JAGO, J. L. M B, Ch.B, Aural House Surgeon BLAKELOCK, J H M B., Ch B Ophthalmic House Surgeon FAIRCLOUGH J H M.B Ch B CALLCUTT J S M.B Ch.B. Casualty Officers TOWNROW, V. M.B, B S Lond., Assistant Supernumerary Surgeon to Ear, Nose and Throat Department, YATES, H B M.B, Ch.B Camb, F R.C S. Eng, Assistant Honorary Surgeon: CHISHOLM, J, M.B, Ch.B. Edin., Honorary Consulting Gynæcological Surgeon.

University of Sheffield GUEST, DENTON M B, Ch.B Sheff, combined post of Demonstrator in Pathology and Assistant Pathologist to the Royal Infirmary

Vacancies.

For further information refer to the advertisement columns

Bangor Carnarvonshire and Anglesey Infirmary —H S £200

Bolingbroke Hospital, Wandsworth Common.—Asst. Hon. Phys

Bury Infirmary —Radiologist £150.

Cambridge, Addenbrooke's Hospital —Cas Officer. £130.

Cardiff City Council —Pupil Asst M.O. £300

City of London Hospital for Diseases of the Heart, &c.—Two H Phys £100 each

Darlington County Borough —M.O.H £900

Derbyshire County Council —Asst County M.O £750.

East African Medical Service.—Sanitation Officer £660

Evelina Hospital for Children South-wark.—House Surg At rate of £120 Also Hon. Dental Surg

Grosvenor Hospital for Women, Vincent-square, S W.—Hon. Asst. Gynæcologist

Halifax Royal Infirmary —First H S £250

Hospital for Consumption and Diseases of the Chest, Brompton, S W —Pathologist £750.

Inverness The Northern Infirmary —Sen. H S £120

Liverpool County Borough —Junior Asst School M.O £600.

Liverpool, Royal Liverpool Children's Hospital —Two R.H.P. and two R.H.S At rate of £60 each p a. R.M.O. £150.

London Skin Hospital —Hon. Phys

Manchester Ear Hospital —H S £150

Manchester, St Mary s Hospitals —Two H.S 's Each at rate of £50

Metropolitan Hospital, Kingsland-road —Hon. Anæsthetist and Ophth Surg

Miller General Hospital, Greenwich-road —S.R.M.O £250

Nottingham Education Committee.—Asst. School M.O £600

Rotherham Hospital —Jun. H S. £150

St Helen's County Borough —Asst M.O £600 Also Asst. M.O H (Tuberculosis) £450.

St John s Hospital for Diseases of the Skin, 49, Leicester-square W C —Pathologist £100

St Paul s Hospital for Skin Diseases —Res. M.O £250.

Seychelles Government —Asst M.O R 6500 per annum.

Staffordshire County Council —Bacteriologist £10 10s per week.

West End Hospital for Nervous Diseases —Hon. Phys and Hon. Surg

West London Hospital, Hammersmith-road, W.—Res Asst S. £200

Wolverhampton and Staffordshire Hospital.—H.S At rate of £150

Wrexham and East Denbighshire War Memorial Hospital —S and J H Surgeons £120 and £80 respectively

York, County Hospital —H S. £150

The Chief Inspector of Factories, Home Office, Whitehall, S W, announces a vacancy for a Certifying Factory Surgeon at Weston-super Mare (Somerset)

Births, Marriages, and Deaths.

BIRTHS

ANDREWS —On July 9th at a nursing home Faversham Kent, the wife of R. Collingwood Andrews, L.D S R.C S Eng, of a son.

GODSON —On July 9th, at Welbeck-street the wife of Lieut.-Colonel C A. Godson, M.C, I.M.S., of a son.

MILLER.—On July 6th, at Emperor s-gate, S W, the wife of Dr Wm. Duff Miller, of a daughter

SCOTT —On July 7th at Fellows-road Hampstead, N W the wife of Edward Spencer Scott, M.D., of a son.

MARRIAGES

FARR—CAPPER.—On July 10th, at Holy Trinity Church Brompton, Valentine Francis, M.B, B Sc Lond., to Margery Bayliss, younger daughter of Mr and Mrs. H. W. Capper, of Harvard-road, Gunnersbury.

WISHART—BEDALE.—On July 7th at St Thomas s Church, Coventry, George Macfeat Wishart, M.D, to Elizabeth Mary, second daughter of the late Canon Bedale.

DEATHS

CADGE.—On July 9th, at Helmingham House, Kirkley Cliff-road Lowestoft William Hotson Cadge Lieut.-Colonel, I.M.S (retd.), in his 73rd year.

HANSON —On July 6th the result of an accident Dr Helen Beatrice de Lastricke Hanson, Assistant Medical Officer, L.C C

PARKER.—On July 10th at the Fanings, Lewes G F. Parker, M.R.C.S and L.S.A. aged 89.

SHERBURN —On July 7th at Brantinghamthorpe, Brough East Yorks John Sherburn, M B, C.M. Edin., J P, in his 75th year

WEEKES —On July 3rd at Modbury South Devon, Reginald Newton Weekes L.R.C P, M.R.C.S

N.B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

THE PREVENTION OF INSANITY *

A PRELIMINARY SURVEY OF THE PROBLEM

By Prof George M Robertson, F R C P Edin

Prophylaxis

Prophylaxis may be defined simply as the prevention of an attack of insanity when it threatens but before definite symptoms have appeared It goes further than this however as it includes the taking of measures to avoid conditions which would favour an attack, for hygiene of the mind and of the body is prophylaxis in a general way The term is applied here to particular steps taken with the immediate object of protecting the mind when threatened by danger There are certain persons for whom prophylaxis is almost essential—for example, those with a known hereditary predisposition who have already suffered from an attack, and more especially those in whom the attack has been of a recurrent type, such as manic-depressive insanity When such a case occurs the family physician should also bear in mind that the other members of the family inherit a similar predisposition

Danger Signals

Loss of sleep is first among the indications or warnings that should be attended to The neuropath is usually a bad sleeper, so that every time he loses a night's sleep, it must not be assumed that an attack of insanity is impending But extreme or prolonged insomnia is a danger and precautions should then be taken Sleep should be sought for in natural ways and encouraged by avoiding everything that might prevent it, but a time comes when hypnotics administered with knowledge and under strict medical supervision are of the very greatest value The public hear much of drug addiction or mania, the general physician is familiar with the craving for "tonics" and other medicines, but only the psychiatric physician comes in contact with the layman's horror of hypnotic drugs, which, despite its manifest advantages interferes occasionally with prophylaxis

Prolonged anxiety that cannot be dislodged runs insomnia close as a danger signal The evils that follow in its train are many and at the climacteric and presenile periods of life they may culminate in a mental breakdown The causes of the anxiety may be real and it may be very difficult to ease the tension before matters grow worse The victims of the strain of anxiety may complain of restlessness, of irritability, of being unable to settle down to work, of having difficulty in fixing attention, and of insomnia

Another danger signal is *mental and physical exhaustion* While rest alone will benefit those cases which are simply due to overwork and want of sleep, in other cases unless the primary cause be discovered and removed the improvement will be only temporary The functions of the nervous system may be lowered in tone and a state of neurasthenic fatigue produced by prolonged poisoning from a septic focus Mental depression is also accompanied by a failure of energy both mental and physical and a neurasthenic state may be associated with anxiety

A *change of character* not amounting to actual insanity, is another important sign, particularly in those who are subject to manic-depressive insanity In this form of insanity there are periodic phases of variable duration in which the patient is morbidly elated and others in which he is morbidly depressed Many people, including some of the most able and brilliant, are subject to similar moods, not amounting to insanity, these are said to suffer from cyclothymia or to possess the cyclic temperament These changes of mood can be controlled only to a limited extent, but much can be done to prevent their exaggeration into something definitely morbid The measures employed in such prophylaxis are of the simplest kind change of surroundings, relaxation, new interests, life in the open air, rest sleep, moderation in all things, and attention to the bodily health

The one important rule for the predisposed is not to ignore danger signals or warnings A sign may seem simple, even trivial, yet it may mean much

Early Treatment

It is a common-place that the earlier treatment is begun, the more hopeful are its results, but early treatment implies a recognition of the early symptoms of disease There is still much difference of opinion as to the early symptoms of insanity It is believed by many that some of the cases receiving treatment for the prevention of insanity would not develop insanity were they to receive none They believe that these cases of the psychoneuroses which others regard as exhibiting the early stage of insanity, suffer really from a definite mental disorder of a different kind It is even alleged that the presence of a psychoneurosis is a protection against insanity This is a point of some importance since if it is true, neurologists and others who have had little experience of true, insanity may perhaps be over-valuing the services they render At the International Congress of Mental Medicine held in Paris in 1889, when this question was considered (*Comptes Rendus*, p 36) it was agreed that psychasthenia, consisting of obsessions accompanied by anxiety, hesitancy in thought and action and physical phenomena, preserves the same psychic character throughout the whole life of affected individuals and does not change into other forms of mental disease In rare instances it may be complicated with delusions of persecution, with anxious melancholia, and with hallucinations I am inclined to agree that once a psychoneurosis has assumed a definite form, although it varies from time to time in its severity and in the details of its symptomatology, it does not tend to alter its character or to assume that of insanity, any more than one definite form of fully developed insanity tends to alter into another To this extent the treatment of the psychoneuroses is not the early treatment of insanity, nor can such treatment claim to prevent insanity from developing where that danger does not exist To this extent also the existence of a definite type of psychoneurosis, except in rare instances, may be said to protect the individual from the occurrence of actual insanity He must, however, qualify this opinion by the observation, that at an early stage it is impossible to foretell whether transient, vague, and disorderly mental phenomena will develop into a typical psychoneurosis or into a definite form of insanity There are thus two stages, an initial stage when anything is possible, and a later stage when the type is fixed

Prevention of the Acquired Insanities

In the middle period of life when the acquired insanities are prevalent the benefits of prevention are more noticeable because they are more immediate Alcoholic insanity and general paralysis occur at this period, and there are many other forms, for example, the confusional insanities, called from their causation the infective-exhaustive-toxic insanities Although in these, as in all forms of insanity, hereditary predisposition plays its part, they are largely acquired and can often be prevented Nothing need be said about these forms of insanity excepting that due to myxœdema, which has diminished almost to vanishing point since the discovery of its cause was made Just as heredity is a factor to be reckoned with to a greater or lesser extent, in every case of insanity, so we are beginning to recognise that disturbance of the internal secretions plays a more or less important part in all forms of mental disorder If the future holds for us a great therapeutic discovery in the domain of mental disease, it will probably be found in a knowledge and control of the internal secretions

Alcoholism and Temperance

As regards the prevention or abolition of alcoholic insanity, there is a very simple way of effecting this, provided it is voluntary But even if alcohol were prohibited not in the legal but in the real sense, the total number of cases of insanity would not be diminished by the full number of cases diagnosed as alcoholic insanity Many of these, owing to inherent instability, would break down from other causes in the absence of alcohol On the other hand alcohol is a contributing factor but not the principal cause of insanity in many other cases, and in these abstinence might be the means of averting insanity altogether Alcoholic insanity is diminishing, though not so rapidly as most people desire

G P I —Education and Salvarsan

Another important form of acquired insanity is general paralysis of the insane There are two promising remedies, for its treatment benign tertian malaria and tryparsamide, after it has actually appeared An astounding fall in the number of deaths was recorded in 1919, the fact that this fall has continued is of supreme interest from the point of view of prevention From 1907 to 1918 inclusive the number of male deaths was steady, and for eight years the biennial numbers did not vary more than ten In 1919–20 there was a sudden drop of 26 per cent The probable explanation of this sudden fall in the number of deaths is as follows General paralysis may appear within three years after syphilis has been contracted, but it is not till seven years have elapsed that it occurs with any frequency Of those attacked more than a half die within two years after the first appearance of the symptoms, which are usually present for a year before the patient is admitted to a mental hospital If, therefore, persons develop general paralysis seven years r infection, and if half die within two years, we require o back nine years to find an explanation for any variation the death-rate. In other words to explain a sudden in the number of deaths in 1919 we require to investigate ditions in 1910. If this be done an explanation is found the employment during that year of salvarsan and the re by its use of those males who contracted syphilis the fall in the number of deaths in 1919–20 is 26 per cent., is certain that many who had contracted syphilis previous 1910 and 1911 also took advantage of the discovery the new remedy. As to females there was a steady ll from 1907 to 1918, doubtless due to the gradual education males as to the danger of passing on an infection.

---

* An abstract of the concluding part of the Maudsley lecture, of the Royal Medico Psychological Association, delivered on July 15th, 1926

There was a further fall of 33 per cent. in the number of male deaths from general paralysis in 1919–20 as compared th the two previous years. This corresponds exactly th the fall in the deaths of males in time and proportion ut it was not directly due to treatment by salvarsan as as the case with males. It may, however, be traced to the mployment of a rapid method of curing syphilis with the esult that the infectious stage of the disease in males was ut short by salvarsan and fewer women became infected.

These observations teach us two lessons. The first the success of modern scientific methods in preventing this terrible sequela of syphilis, and the second, the effect of educational propaganda. I attribute the whole fall in the number of deaths from general paralysis among females up to the year 1919 to the instruction given to infected males. It must not be concluded that as striking results will follow the appeal to women as have followed the appeal to men. The majority being innocently infected do not at present spread infection. There is, however, a virulent minority of immoral women to whom an appeal would be made in vain. Such women can be induced to come for treatment only in their own interest, and they are coming.

Prevention of Senile Insanity

As to measures for the prevention of insanity during senility we are guided by the knowledge that the later in life insanity begins the less important is the factor of hereditary predisposition in its causation, and that in all forms of insanity occurring during senility the influence of the body, if not paramount, predominates. The margin of bodily resistance to mental breakdown is less in old age than at any other period of life, but senescence is a period of retirement, of a withdrawal from the fierce zone of life's battle. There is then not only decreased alertness of mind and diminished vigour but a lowering of the sensibility which softens the effects of the harsh blows of fate. Sickness benefit, old age pensions, improved housing, better sanitation, and a higher standard of living may also be expected to have a direct effect in reducing the amount of insanity during this period of life. Without doubt preparation for a healthy old age by careful living during the middle period of life is the best insurance against senile insanity. In spite of this, however, hereditary tendencies to special diseases, such as vascular degeneration, may produce mental collapse as well as shorten life.

Is Insanity on the Increase?

All nations seem to pass through periodic phases in which fears arise that among them the occurrence of insanity is on the increase. So far as can be judged, the outlook in Scotland at the present time is distinctly favourable. Taking the last 15 years, the total number of insane persons has fallen from 390 per 100 000 in the first quinquennium to 369 in the last, and the number of insane persons registered annually for the first time has fallen from 2828 in the first quinquennium to 2731 in the last, although the population has increased in number. In these statistics there is no cause whatever for alarm.

Conclusion

It must be apparent to everyone that the problem of preventing mental disorder is not a simple one. The possible causes of mental derangement are legion, and the possible combination of these in individual cases beyond counting. It is clear that when sickness of mind threatens or occurs mental health cannot be regained by any royal road.

In the opening up of preventive channels a great responsibility rests on practising psychiatrists. It is futile to lament that those of unstable equilibrium turn elsewhere for help—to the quack, to the charlatan, to the barren ritual of the latest cult. The blame for this state of affairs must be shared by the psychiatrist. Far too long has he sulked in his cave; now he must come out into the market-place and offer his wares to all who need them. He must not confine his interests to his duties in the mental hospital. He must coöperate with the general practitioner and get into touch with the outer world through the agency of out-patient clinics.

An expert body of psychiatrists trained in every device of medicine and psychology and diligently applying themselves to the clamant needs of their generation might avert much needless suffering on the part of those in mental difficulties or about to be overwhelmed. Let none be daunted by the magnitude of the enterprise that is envisaged, but rather find in it an incentive to continued and combined effort.

WOMEN'S ORGANISATIONS IN RELATION TO SOCIAL HYGIENE

In The Lancet of June 26th we gave a general account of the annual general meeting of the British Social Hygiene Council held at 1, Wimpole-street, London, W., Mr. E. B. Turner presiding. The annual report and accounts having been adopted, officers and members of the Executive Committee for the ensuing year were elected. The new President is Lord Willingdon, formerly a Vice-President; the other Vice-Presidents and the principal officers remain unchanged. Dr. Valeria Parker, Director of the Department of Protective Measures, American Social Hygiene Association, and President, National Council of Women, United States of America, gave an address on the

Relation of Women's Organisations to the Social Hygiene Programme in the United States

She recalled the origin of a social hygiene programme in the United States when the National Women's Christian Temperance Union was organised in the early seventies. The Purity Committee of this union, later known as the Social Morality Committee, was concerned with the breaking down of the system of prostitution that had grown up in some of the larger cities and was determined to promote a high and equal standard of morals for both sexes. Social hygiene committees had since been formed in connexion with the National League of Women Voters, with the National Congress of Parents and Teachers and with the General Federation of Women's Clubs. The National Women's Medical Association had formed a committee for race betterment, and that a special committee, of which the speaker was chairman, was making a study of the number of clinics and number of antenatal clinics which are undertaking the proper diagnosis and treatment of venereal diseases for expectant mothers; Dr. Parker was therefore particularly interested in the report of the work in this direction carried out in Great Britain. She said that in the United States a grant was made from the Government, through the Children's Bureau, for the protection of maternity and infancy, and it was desired to know accurately to what extent such clinics are including the diagnosis and treatment of venereal disease. It was felt that the mother and the child should be given the benefit of such scientific discoveries as have been made for their protection.

The women's organisations in the United States had a very strong influence; they formed not only a channel through which education can be brought to the public in general, but are also a very powerful means of changing public opinion and of bringing about action.

In 1918 funds were provided by the American Government for education, research, and legal measures, and the reduction of venereal disease by means of public clinics, but to enable them to avail themselves of a proportionate amount of this money each State was required to agree to classify venereal disease as contagious. Each of the 48 States complied, Nevada being the last in 1922. The central funds were no longer available, but each State now financed its own work. The women's organisations had made no public protest against the classification of the venereal diseases, but they were opposed to the tendency to regard all women leading the lives of prostitutes as carriers of disease, this tendency having been carried in some cities to the extreme of subjecting all prostitutes arrested to an examination for venereal disease before conviction; those found free were released at once, and those found infected were detained. This procedure was being overcome by education as to the danger of male disease carriers and a persistent demand for equal administration of the law. Dr. Parker considered that the feeling of the majority in her country was that the fact that the law had been misused was not evidence that the law should be repealed, but that a strong effort should be made to secure the equal administration of the law for both men and women.

After the war a peace-time programme was formulated of which the educational side was still considered one of the most important factors. As a result of the change in public opinion, only one city—Reno, Nevada—remained where a segregated district is permitted.

In conclusion Dr. Parker emphasised the desirability of enlisting the support of all women by interesting them in the subject, and expressed her opinion that the appointment of women police in communities was a most important step that should be taken. She urged the British Social Hygiene Council to consider how best to use women's organisations as one of the means of carrying forward the excellent programme that she had heard outlined.

MALARIA IN ITALY

One of the landmarks in the progress of medicine is the mastery gained over malaria, which has been responsible for such countless deaths since the beginning of historic record As Baron Bernardo Quaranta di San Severino said in a lecture illustrated by a cinematograph film at the Royal Army Medical College on July 12th under the auspices of the London School of Hygiene and Tropical Medicine, the fixed idea of "bad air," "mala-aria," created an irresistible legend which forced people to run away from malarial zones with the consequent neglect and abandonment of those areas, thus making local conditions worse He pointed out that the Etruscans in earliest times mastered the art of building canals for draining, while later in the Roman epoch, when the conditions of the city during the first rulers were the cause of marsh fever, the Tarquins built a marvellous drainage system which is even in use at the present day As, however, the danger of malaria never disappeared there were inaugurated the worship of the goddess of fever, and of Castor and Pollux, the gods of health, of Lucifer, of Æsculapius, and of Apollo, whose statues were discovered near the Fons Juturna famous for the healing power of its waters The disease then was attributed to bad water as well as bad air and many ideas were conceived as a means of purifying malaria-infected spots In quite recent times trees and plants exhaling peculiar resinous perfumes have been cultivated with this object, such as eucalyptus, cypress, pines, and sunflowers but the cause of the spread of malaria evaded all theories until recently It is interesting therefore, to learn that from the most remote times certain African tribes protected themselves from malaria with a kind of mosquito net The lecturer alluded to the well-known writings of Giovanni Maria Lancisi, a celebrated physician of the seventeenth century, as containing a clear allusion to the mosquito as a malaria carrier and showed that modern science had concisely defined this idea in its particulars From this point he went on to describe, with the help of the films, the birth of the mosquito, its infection and the transference of this to the human being, while the rest of the lecture graphically described the measures which Italy has devised to fight the disease and which have given that country the most thorough anti-malarial legislation in the world In 1887, said the lecturer, there were 21,000 deaths from malaria in the whole population of Italy—namely 71 per 100,000, to-day the deaths are about 5 per 100,000; malaria is practically on its way to disappearing from the country At the close of the lecture a telegram was sent to the Italian Ministry of the Interior conveying an admiration of Italy's splendid work on the part of British science

THE TEACHING OF SWIMMING

To the Editor of The Lancet

Sir,—The letter from Mr Walter Edmunds which appeared in your issue of June 19th, was both interesting and timely But when Mr Edmunds says that "the education authorities do not undertake the teaching of swimming," I think he cannot be aware of what is being done not only in his own neighbourhood of Putney but all over London elementary schools

Swimming *is* taught in London elementary schools Though it is not an obligatory subject of the curriculum, the great majority of schools send pupils to the baths during school hours In a report which my committee presented to the Council last July it is shown that about 94,000 boys and 60,000 girls—i e, about 75 per cent of the total number of pupils of 11 years and upwards—are receiving instruction in swimming each year Some 21,000 boys and 15,000 girls, unable to swim at the beginning, are able to swim at the end of the season, and it is reckoned that approximately four out of every five boys and one out of every two girls leaving elementary schools have been taught to swim under the Council's scheme As a rule, the boys are taught by their class teachers, but for the girls special instructresses are engaged Over 50 public baths, together with three baths under the control of the Education Committee, are used during the summer practically every day in the school week by classes from elementary schools, many of which continue to take swimming throughout the winter

The flourishing position which swimming has attained in the London elementary school system is due in a large measure to the energies of the London Schools Swimming Association, a central association of teachers working in a voluntary capacity, which coördinates the efforts of the local schools swimming associations in directing the out-of-school swimming activities of the children This Association organises annual galas and competitions, publishes books of instruction, and conducts examinations Last year, under the auspices of the Association, no less than 8500 boys received certificates for being able to swim 100 yards and 8000 girls for swimming 50 yards, while over 7000 children were awarded certificates for life-saving

I can only speak of the schools maintained by the London County Council, but in justice to my committee and to the teachers who, both individually and through their associations have been so successful in developing the instruction in swimming, I feel I ought to put these facts before Mr Edmunds and your other readers

I am, Sir, yours faithfully,

W H Webbe,

Chairman of the London County Council
Education Committee

County Hall, London, S E, July 12th, 1926

THE PANEL DOCTOR'S WAITING-ROOM

A correspondent has addressed us on the possibility of panel patients in doctors' waiting-rooms proving dangerous foci of infection He declares that men, women, and children are herded in these rooms sometimes for hours and that while some have little the matter with them, others may be in the most infectious stage of diphtheria or measles In many cases, he adds, the waiting-room is badly ventilated, and the patients waiting attention vary in degrees of cleanliness

We must demur at the suggestion that patients are kept waiting for long periods in overcrowded and unhygienic waiting-rooms Great efforts have been made to ensure that panel patients are seen as promptly as possible, and very large panels are now exceptional unless the practitioner has partners The public have, moreover, been educated to recognise the possible significance of a rash or a sore throat, and seldom bring a really sick child to a waiting-room for diagnosis Our correspondent may feel assured that while this method of spread of infections cannot entirely be excluded, it is not a danger to which patients are commonly exposed

THE "PURA" TEAPOT

We have received from Messrs Joseph Gilbert and Sons, of Sun Works, Bissell-street, Birmingham, a patent teapot, devised to enable the spout to be more easily cleaned than is possible with the ordinary make At the same time spent tea-leaves are prevented from blocking up the spout and the various unpleasant accumulations are obviated This is made possible by the use of a movable strainer which slides down through a slot in the rim of the teapot and screens the large opening of the spout within the pot On removing the strainer the internal spout opening is exposed to view for the purpose of cleaning A coffee pot is also made on the same principle, and both vessels can be had in silver-plated nickel or Britannia metal, the price varying from *40s 6d* to *131s 6d* according to size, material, and pattern The invention makes for cleanliness, and these pots should prove convenient in the home and particularly desirable acquisitions for hotels and restaurants

PASTEURISATION OF LONDON'S MILK

A number of medical officers of health were amongst those present on June 29th when Lord Kenyon opened a new milk pasteurising and bottling plant at Valley Farm, Streatham

Every gallon of milk dealt with at this farm is pasteurised, bottled, and sealed without being touched by hand The milk is heated to a temperature of 145° F and held in glass-lined tanks at that temperature for 30 minutes After pasteurisation, it flows by gravity over coolers, situated in a glass-lined room into which fresh air is filtered, and thence to bottle filters and cappers In this way 25,000 gallons (250,000 bottles) of pure milk can be treated daily Two giant bottle washers have been installed, and each bottle is washed and sterilised for 20 minutes by 23 different operations Churns are subject to a similar but shorter process At a bacteriological laboratory on the premises tests are made to ensure the cleanliness and purity of the milk supplied to the consumer

Lord Kenyon, in performing the opening ceremony, congratulated the United Dairies on the excellence of the new depôt's equipment He was, he said, chairman of an Advisory Committee on Milk, and he was glad to be able to say that 90 per cent of the milk drunk in London was pasteurised He looked forward to seeing it all so treated Mr J H Maggs chairman of the United Dairies Ltd, claimed that the milk trade was now in advance of legislation, and remarked that if medical officers of health could move the Legislature to further action the United Dairies would not complain

Guy's Hospital Dental School—Mr Francis Dyke Acland, Chairman of the Dental Board of the United Kingdom, last week opened an extension of the dental school of Guy's Hospital which has cost £23,000, £5000 of it contributed by the Dental Board When the school was opened in 1889 approximately 4000 patients attended - last year the number was 84,000 The number of students enrolled exceeds 2000

An Address

ON THE

MEDICAL PRACTITIONER AND THE PUBLIC.

Being the Presidential Address delivered at the Annual Meeting of the British Medical Association at Nottingham, on Tuesday, July 20th,

BY ROBERT GEORGE HOGARTH, C.B.E., F.R.C.S. ENG.,
SENIOR SURGEON, GENERAL HOSPITAL, NOTTINGHAM

[THE President commenced by expressing his heartfelt appreciation of the honour done him by his election, and by calling attention to the march of medical science as expressed by the great decrease in the general rate of mortality during the last 50 years. He continued :—]

Far more desirable than to make a brave show in the statistical tables and increase the number of nonagenarians and centenarians is to raise the general standard of health among all ages of the community. Let us look at this question from the point of view of the State, since our duty to the State, according to some people, seems to be reckoned higher than our duty to ourselves. During the war public opinion was shocked to discover that the C3 category was so large in comparison, not with the A1, but with the B's and even with the C's. But it did not surprise the doctors, who knew the long catalogue of disabling ailments which afflict the general mass of the people.

The first sets of figures published by those who medically examined the school-children in the elementary schools had already given clear warning. If such distressing percentages prevailed among the children between the ages of 5 and 15, what was to be expected when they grew to manhood? Moreover, a swollen C3 category of men between 18 and 45 necessarily means a still larger percentage of the same category between 45 and 65, after which year, presumably, very few of these damaged people contrive to earn a livelihood. What is true of the men applies no less to the women, and so we have throughout the country an enormous mass of bruised and damaged humanity which never enjoys robust health, which is continually ailing, which provides a multitude of victims for every epidemic, and which, regarded from the purely economic standpoint, never approaches full industrial efficiency, because it is never fit and alert.

I would not paint the picture in too sombre colours. Most of the world's work is routine work, which can be got through more or less satisfactorily at ordinary times whether, for the purpose of the military category, a man is classed C3 or B2. Nevertheless, the C3 man will be oftener on the sick list: he will make more mistakes; he will produce less; he will lose his job sooner; and at any moment of emergency he will be less trustworthy and reliable. His physical deficiencies will increase with the passing years; he will be less able to protect himself and his family; he is more likely to seek support or stimulant from alcohol and then begin to suffer from its cumulative effect. Would it not therefore be better for the State if we took pride, not in rewriting the tables of mortality, but in raising the C3 people to a higher category—not in view of distant military contingencies, but for the immediate purpose of rendering them more efficient citizens, more valuable producers of wealth, parents of a healthier stock, and themselves more contented with their lot.

If we regard the great stagnant pools of ill-health and the infinite variety of debilitating ailments, deep-seated and chronic, we are driven to the conclusion that physical inefficiency is at once the most permanent and fruitful cause of individual unhappiness and social discontent.

Walt Whitman's lines are worth recalling in this connexion:

> "I think I could turn and live with animals, they are so placid and self-contained;
> I stand and look at them long and long.
> They do not sweat and whine about their condition,
> They do not lie awake in the dark and weep for their sins . .
> *Not one is dissatisfied—not one is demented with the mania of owning things .*
> Not one is respectable or industrious over the whole earth."

Humans are like animals at least in this, that if they are to be happy and contented they must either keep fit or be kept fit; and the honour of being considered the greatest benefactor to mankind belongs not, as is so often said, to him who can make two blades of grass grow where only one grew before, but to him who can add most to the science of health and raise the standard of fitness throughout the whole community. Surely that would be of more instant value to the State than the preservation of infant life in the first year of existence and the indefinite prolongation of what used to be called the allotted span. If there be any who dislike such a comparison of human values, they may be reassured by the reflection that whatever measures are taken to raise the general standard of life can hardly fail to benefit the infant in the cradle and the aged patient in the Poor-law infirmary.

THE STATE AND THE NATION'S HEALTH: PREVENTIVE LEGISLATION

If these considerations have weight, it must be one of the paramount duties of the State to concern itself more and more intimately with the health of the nation. It can do that by its solicitude for those who are sick, and by taking whatever measures are possible to keep them from becoming sick. Its action, in a word, must be both curative and preventive. While the science of medicine was mainly empirical and the causes of disease were either unknown or wrongly attributed, preventive measures by the State were little thought of. To-day a long series of Public Health Acts and the still recent creation of a Ministry of Health attest the full recognition and acceptance by the State of this essential administrative function. The right of the State and of the public authority to invade this particular domain is no longer challenged. It is seen to be for the common good that the sanitary and the factory inspector are armed with the sanction of the public authority; and as the ameliorative possibilities, latent in preventive measures are better understood, there will be a growing impatience with the obstacles placed in their way by selfish or interested parties. The establishment of the Ministry of Health bore witness, not to the sudden discovery of a new truth, but to the proved results of much admirable work which had been done in the previous half century and to the need of its more resolute prosecution. We are now accustomed to the blessings of a pure water-supply and efficient systems of drainage and sewerage; we have grown intolerant of the most offensive features of a slum; we have a clearly defined standard of, say, the minimum hygienic requirements of a new house. Throughout the wide field of industrial hygiene we know what conditions are desirable and what are dangerous to health. Our knowledge is fairly complete; the practical difficulties are connected with administration—how to deal with the borderline cases, and how to make the best use of the money at disposal, for improvements are always costly and public expenditure can only be met either out of rates or out of taxes. Public opinion has to be educated continuously all the time. As a rule it proves amenable to tactful handling. For example, the compulsory notification of diseases is now extended far beyond its original scope to as many as 22 notifiable diseases, and will probably be extended much further within the near future. The agitation when the National Health Insurance Act was being passed is now remembered with a smile for the broken vows that were registered never to lick Mr. Lloyd George's new-fangled stamps. But even the greatest changes are very soon accepted as if they had always been,

5369

provided that on the whole the new institution functions well and promotes, in spite of whatever defects, the general well-being

The scope of preventive legislation is almost limitless, and we are likely to see the State interfering —or shall I say intervening?—more and more in the interests of public health For example all the Licensing Acts of the last half-century are based in the last instance on the argument that stricter regulation is necessary for the general public health and safety, and it is obvious that that particular field of controversial legislation is by no means exhausted Moreover, the State is beginning to assert its regulative powers in departments of social and even of family life from which hitherto it has held aloof, and its justification will always be that the interests of public health override the personal interest of the individual, who, as a member of the community, does not and cannot act to himself alone We may expect sharp controversy, for example, if and when the State concerns itself directly with eugenics, and asserts its solicitude for a generation not yet born, not by the provision of cradles and nurseries, but even by the very determination of parentage itself This might have seemed fantastic a few years ago But now that the idol of State socialism has been set up for our worship, we may be sure that sooner or later the theorists will attempt to invest the Ministry of Health with increasingly autocratic powers, and will seek to transform the whole medical service of this country into a State service, with State hospitals, State examinations for degrees, and the State payment of doctors This would be a perfectly logical development in a socialist State, nor can it be pretended that such a system could not be worked But whether it would be as efficient as our present system, whether it would be as acceptable to the general body of the people, and whether the vastly increased cost would be repaid by equivalent advancement of medical knowledge or improvement in the public health, there is room for the very gravest doubts

DOCTOR AND PATIENT

The patient's right to choose his medical adviser—which right is indispensable to the creation of a perfect relationship between them—has contributed largely to the smooth working of the National Health Insurance Act There are roughly 13 million insured persons and rather more than 13,000 medical practitioners on the panels These are not, as some ill-informed critics of the service would seem to assume, a separate and inferior class of medical men They are in every sense of the word general practitioners, and the service they give is a general practitioner's service

To each patient on his list the insurance practitioner accepts the relationship of a family doctor, just as he would do if he were called in by a private patient He gives to each the skill and the attention within his power, and he gives them, as a rule, cheerfully and willingly, as he has contracted to do One sometimes hears general complaints of too rapid and casual a diagnosis, but when the waiting-room is full the same complaints are not wholly unheard even in the most august thoroughfares of the London specialists The true test of value of the service given is to be found in the fact that in 1924 only 404 complaints were received by insurance committees and investigated by their expert subcommittees, and in only four cases did the more serious charges result in the removal of the practitioners' names from the Medical List

Is it likely that a better service would be provided if each insurance practitioner were selected for inclusion in the list by some official of the Ministry of Health and if he were required to give an even more detailed and minute account of his practice and submit still more voluminous reports? The panel would still be composed of exactly the same people, and even if the allotted quota of patients were reduced, is it at all certain that the individual patient would receive a greater share of the doctor's attention?

We know what happens in all State services The red-tape machine would soon be started, more and more reports would be called for, the doctor might see fewer patients, but the volume of his activities would be in no wise lessened, and the cost of the service to the taxpayer would be enormously increased You will not make the panel doctor a better doctor by making him more of a civil servant and less of a doctor, nor will you make the 13 million patients more contented with their treatment

The reform that is most required in connexion with the insurance service is one which shall link up the insurance practitioner with the consultant physician and the consultant surgeon, and give the insured patient the benefit of the profession's specialised as well as of its general knowledge

HOSPITALS AND THE STATE THE VOLUNTARY HOSPITALS

Nowhere is the principle of voluntaryism so well worth maintaining as in connexion with the hospitals, nowhere has it been so triumphantly maintained It is sometimes suggested that the chief virtue of voluntary agencies is to do the rough pioneer work in difficult and intractable places, to create a favourable public opinion, and then, in due process of time, to hand over control to some department of State which will carry on the work upon an altogether larger scale Indeed, I have seen it stated that voluntaryists ought to be proud to merge their small individualities into the larger being of a public department and to lose themselves like rivers in the sea But the enthusiastic friends of the voluntary hospitals are human beings, not mere charitable machines which function altruistically because their well-disciplined hearts happen to be set that way They are proud of their work They love it They see results which encourage and inspire them They do not want to sink themselves, but to express themselves The gratitude of those who are healed is sweet in their ears Voluntaryism is the very life and soul of the whole hospital movement It is not suggested that the hospitals would wither if the voluntary principle were abandoned They would still multiply and prosper Their orderly routine might well show an even more brilliant and imposing efficiency But the rules and regulations would lengthen The spirit of the institution would suffer change and lose something —I fear much—of its geniality and kindliness Why is it that such a difference exists to-day between the voluntary hospital and the Poor-law infirmary, which is often better constructed and much better equipped? If you ask a patient to which he would rather be sent, why does he always say the hospital? To some extent the old hard, unforgettable associations and traditions of the Poor-law still chill the heart. But that is not the whole truth There is something inherent in officialdom which freezes the genial current of the soul, and thaw it as you will by the application of whatever new principles of kindliness and mercy, it can never be thawed right out

Let us stand by the principle of voluntaryism in the hospitals at whatever cost of energy and patience required for their adequate provision and efficient maintenance I need not remind this audience that it will take a vast and sustained effort to provide the 10,000 additional beds which the Voluntary Hospitals Commission has declared to be necessary For that effort the friends of the hospitals will soon have to brace themselves There is to be no financial assistance from the State The Minister of Health last February very reluctantly came to the conclusion that no subvention was possible, at any rate at the moment, and so the hope that the Government might repeat its unconditional grant of half a million to the hospitals after the war, in recognition of their invaluable war work and of the utter impossibility during the war period of keeping abreast of their requirements, has been cast to the ground Unless this second grant had been as unconditional as the first I do not know that I am altogether sorry at the Government s decision. If the Ministry had begun to impose conditions of control it might well have marked the beginning of the end of the voluntary system I contend that the work done by the hospitals is of such inestimable value, and the confidence placed in them by the public is so well justified that the State if it makes any subvention at all should do so without restrictions, knowing that the money will be judiciously expended. The hospitals should beware of even the mildest beginnings of State control and the relentless, however friendly. grip of any State department However, as there is to be no grant these particular anxieties do not arise and the supporters of the hospitals must shoulder their burden So large a sum as 4 or 5 millions for new capital expenditure will take a very considerable time to raise; for. over and above all this the maintenance cost has to be found for each new bed provided, and this means an additional recurrent annual cost of £148 per bed Many of us were disappointed that once again the Chancellor of the Exchequer in the last Budget failed to exempt bequests to hospitals from liability to legacy duty. That is claimed as an act rather of justice than of grace The toll taken by the State is an interception of charity which is repugnant to good feeling and a sense of fair play to the suffering The hospitals, of course, in their turn. owe to their generous supporters the duty of sound economic management, which in turn depends primarily upon the choice of governors Those which show the best financial balance sheets usually have upon their board of management some outstanding figure of marked ability who has made the local hospital his hobby. his interest, his care and his pride However that may be, there must be the undoubted assurance of economic and prudent management if the full support of the public is to be continued It may well be that a closer coöperation between hospitals—large and small, general and special—is possible and desirable and that considerable economies might be effected without infringing the real autonomy of each institution, which is so properly and jealously guarded Charitable effort in this country has always been specially subject to the besetting sin of overlapping and wasteful management; voluntaryists must be ready to face a searching criticism of their accounts by business men whom, if they are wise they will invite and welcome to their councils

CHANGING TYPE OF HOSPITAL PATIENT

The hospital is no longer the lazar-house of the destitute the place to which homeless and plague-stricken outcasts crawled to die or into which they were herded if they seemed too noisome and dangerous to be tolerated at large Such it was in mediæval times; then came the period, which lasted more or less down to our own day, when the hospital was still exclusively used by such as were too poor to pay for the ministrations of a doctor. Some people still hold that this should be the fundamental function of any hospital which is supported by public subscriptions, and I agree that this primary purpose for which hospitals exist—namely that of taking in and caring for the indigent poor—must in no way be shelved or neglected But we have advanced far beyond that simple conception in these days, and we shall advance much further still if only because the hospitals from being mere infirmaries have become the centres of the best medical and surgical skill in the areas they serve The best nursing the latest scientific apparatus all are concentrated there for the service of the poor, and while the rich and the well-to-do can look after themselves there remain large intermediary classes of the population who are cut off from the best skill because on the one hand, they cannot afford the fees and on the other they are not of the class for which the hospitals were intended If that were pressed it would indeed be intolerable especially in view of the increasing expensiveness of any serious operation or illness the cost of nursing homes and the palpable unfairness of leaving out in the cold the great body of the middle classes. whose financial betterment has by no means kept pace with that of the superior artisan class, and who have been in the past according to their means, good and loyal friends of the hospitals.

Wards for Paying Patients

It is certain. therefore, in my opinion. that we shall see a steady extension of the principle of the paying ward, and even of the paying hospital for the use of the patient who pays in accordance with his means. In many hospitals to-day all but the very poorest patients are expected to contribute to the cost of their healing, and there is little need to lament the disappearance of the old principle that the hospitals were absolutely free—a principle which. in fact was often grossly abused The interests of the middle classes deserve attention no less than those of any other class May we not therefore look forward to a time when every general hospital will be well equipped with paying wards or will have a paying hospital in association with it, served by the same staff and the same nurses? A middle-class patient who is a suitable hospital case could be seen by the almoner of the hospital and, after stating his income and position terms could be arranged according to means Naturally that will open up the question of fees for the surgeon or the physician and some obvious and possibly difficult adjustments would have to be made: but no vital principle that I can see would be endangered by the payment of these special fees or even by the hospital itself making a substantial profit on such cases which would help towards the maintenance of more beds in the non-paying wards Such changes are likely to be gradual; we can carefully note what effect. if any. they have upon the flow of subscriptions Personally. I do not think that the charitable donor is likely to object to a middle-class paying patient receiving a share of the fruits of his bounty He had a much more valid grievance against those who abused the freedom of the hospital and never contributed a penny to its funds The medical profession is generous in accommodating its fees according to the patient s income But every medical man knows cases where the serious illness of the bread-winner or the wife or child has exhausted the savings of a middle-class home or crippled it with a load of debt. The middle-class patient moreover. is the principal sufferer from the high fees of the nursing home another institution which has a necessary place in our existing system for dealing with the cure of disease but which is by no means immune from well justified criticism Is it. indeed too much to say that the extreme expensiveness of nursing homes—I speak of course. in purely general terms—is contributing as much as anything else to the extension of the system of paying wards in hospitals and the call for its rapid development.

Working-Class Contributions to Hospitals

There is also another important development in process with regard to the hospitals. More and more in the large cities and industrial areas the hospitals are coming to rely upon the subscriptions of the working classes, contributed through a general hospital Sunday collection or through a direct trade union levy In this district for example the Hospital Saturday Committee are very good friends of the hospitals contributing willingly. cheerfully, and without condition or stipulation as to the hospital service for their members they will receive in return This trust is not misplaced They lose nothing by not dealing in terms of contract and demanding the strict recognition of a right Many county hospitals are stimulating interest in their work by forming a collecting committee in every village and persuading the cottagers to subscribe to its funds almost in the same way that they subscribe to a sick or benefit club This will necessarily lead to a great extension of the hospitals for those who pay will expect to receive hospital treatment as *a right* in case of serious illness When the small contributor begins to talk about "our hospital," the vitalising spirit of voluntaryism is at work Open the door to State direction and control and the cold east wind of officialism will contrive an entrance too.

THE GENERAL MEDICAL COUNCIL

Another aspect of the relationship of the medical profession to the public has been much discussed of late in connexion with certain punitive action taken by the General Medical Council This discussion has removed many misconceptions as to the specific purposes for which the Council was created by the Legislature—not, as was too often supposed, to serve as the executive of a powerful professional organisation protecting the interests of its members but as a body entrusted with powers, clearly defined first by Parliament and later by the judges, for the protection of the public against the incompetence and the imposture of unqualified medical practitioners Practically the only criticism directed against the Council rises from the fidelity with which, in these days of growing laxity, it has maintained its jealous regard for the purity of its register of membership There are really two main questions in which the lay public is interested The first is Is it or is it not to the public advantage that the General Medical Council should set its face like flint against professional self-advertisement? The second is Is it or is it not to the public advantage that the Council should show a less uncompromising attitude towards the unqualified practitioner and a greater leniency towards those who transgress its stringent rule against covering?

The rule against professional self-advertisement is unquestionably in the public interest The publicity agents of the commercial world may sound their slogan as they will about "Truth in advertising" But, as Dr. Johnson once shrewdly observed, the secret of advertising is "large promise"; and large, limitless, boundless promise is wholly out of place in the practice of the medical art Inseparable from quackery, it is the sign manual of the unqualified nostrum-monger In my view, this most salutary rule against professional self-advertisement needs to be observed more than ever now that the old reticences are being broken down in so many directions, and in view of the growing disposition to discuss all medical subjects freely in the public press

Whether we like it or not, that school of thought is prevailing which holds that the open forum is the best of all popular educators, that ignorance is the greatest of all dangers, and that publicity alone can create the new public opinion out of which it is hoped there may issue a higher moral sense and a stronger self-control The public press will devote more and more space to the manifold problems of public health, and it is obviously desirable that what is written should be written with authority No anonymous article on a technical or professional subject carries the weight of the signed contribution, and if doctors write for the lay press, as they will be urged to do with an ever-increasing insistence, the opportunities of professional self-advertisement will greatly multiply.

Nevertheless, it is to the common interest of the profession and of the public that these temptations —not, indeed, to inform the public of what is for its good, but to inform it in such a way as to advertise and glorify the writer and conduce to his personal gain —shall be resisted, and that the Medical Council shall still continue to exercise its powerful restraints In other countries a different practice may be followed, but till it is shown that their method is more conducive than ours, either to the dignity and character of the profession or to the protection of the public from the charlatan and the quack, these restraints should not be weakened. Many borderline cases are bound to occur as they do at present, but I assume that the Council will continue to act with that judicial discretion which has on several occasions received the acknowledgment of the highest legal authorities

UNQUALIFIED PRACTITIONERS

As for the unqualified practitioner, I say without hesitation that the Medical Council cannot and must not recognise him, and therefore cannot and must not abate its strong reprobation of covering To do so would be to stultify itself and the Register, which is its special creation and instrument It cannot, to borrow an expression from another profession, recognise any orders but its own. I do not mean that it should seek to induce the State, as is done in some countries, to make unqualified practice illegal Even if that were desirable, the public would not permit it Public opinion, if I may say so, has a sporting fancy for the outsider, and outsiders, even the rankest, do sometimes win But, though rare and exceptional cases may arise, the Council cannot extend either the bow of friendship or the nod of recognition to any unqualified practitioner without placing itself in a false position If an unqualified practitioner really discovers a new cure or treatment for one of the ills of humanity, his consulting room will not long remain empty of patients If his method is genuine it will endure, and, soon or late, it will win general recognition But no one can reasonably expect admission to the Medical Register—or to any appendix thereto—by any except the approved channel Admission is not a question of initiation and secret rite, it is a plain question whether the entrant has gone through certain courses of medical training and passed the presented examinations How can either be abandoned with safety to the public interest? The unqualified practitioner may or may not have sufficient general medical knowledge to enable him to make a diagnosis A few may have gone through some sort of a medical course, the majority have not It takes the ordinary medical man five years or more to complete his course, the unqualified man often does not give as many months He professes to be a specialist without even elementary grounding in the essential rudiments of medical knowledge I say nothing against the science of osteopathy or these uses of the manipulative treatment I only say that those who practise these arts should have the medical knowledge without which they may do their patients infinite harm

The champions of the unqualified practitioner fall into two main classes One consists of those good people, invincibly credulous and optimistic by nature, who chatter about cures and treatment as others chatter about politics, and on whose ears well-syllabled words like "osteopathy" and "manipulation" fall with a sweetly modulated cadence of solace and hope The other class consists of the ingenious rebels against all authority but their own, the sophists of the day, who deride professional etiquette and grimace at professional tradition Perhaps here and there certain solemn pomposities do linger even yet in our profession, and an occasional grin at these may do no harm, but the health of the public is no grinning matter. The plain truth remains that behind the rare—the very rare—unqualified practitioners of whose success so much is made, but whose failures pass unrecorded, there are scores of other practitioners of technique ancient and modern, Chaldean and transatlantic, who are eager to take advantage of any momentary opening of the door, which it is the declared policy of the General Medical Council to keep tightly shut A selfish, obscurantist policy would be totally contrary to the free spirit of inquiry which animates the medical science of to-day But this is neither selfish nor obscurantist Whatever in any modern technique is tested and proved good is sure of eventual adoption, and not even the gates of the General Medical Council will prevail against it But the tests and the proofs must be such as are recognised by that universal medical science which talks a common language throughout the world and which alone can securely judge The public mind was, perhaps, never more impatient of authority than it is to-day Unable to distinguish with certainty where the trained expert alone has any claim to be heard, multitudes of people are still prepared to accept offhand the morning and the evening stunt of their favourite newspapers, which are then forgotten as soon as read So many romantic impossibilities of yesterday have become the casual scientific commonplace of to-day that the very word "miracle" itself has shrunk back to its original connotation, and even the wisest have still no effective retort to Hamlet's gibe as to the inadequacy of their philosophy to embrace the content of heaven and earth Nevertheless, Authority remains unshaken on her intellectual throne, though the gusts of change may a little disorder her raiment, and Authority herself acquires a riper wisdom and a larger experience with the passage of the years

The medical profession is a living profession It is for ever breaking new ground, mapping and charting as it goes, and the necessary correction of a too hasty observation or faulty induction, as well as the need to include new knowledge, requires us from time to time to revise our atlases And though we may be fairly confident that the older continents are now accurately charted, there is always the need to be prepared for the crash of old-established notions and for restless movements of insurgence along boundaries which once appeared to have been fixed for all time It is a sobering reflection that, but for the violent wrench out of its true direction which medical science suffered two thousand years ago, some of our most recent discoveries might well have been among the oldest blessings to suffering humanity. With the abandonment of the one true scientific method of patient observation and careful induction there was also unhappily discarded that sagest of all the medical maxims of ancient Hellas, that the physician is the servant of Nature The human race has suffered sorely because medical art and science took so tragically wrong a turning, after making so brilliant a start Probably the perversity of the patient was largely responsible Popular demand has always been insistent for the bottle of medicine and the charm Science, under the lead of Aristotle, had sought to exorcise the potion-monger and the thaumaturgist, but back they came with a rush, and when the ancient scientist candidly admitted that he was uncertain as to the nature or the cure of the complaint, the patient soon betook himself to one who promised a safe, quick, and pleasant cure

The great truth that the supernatural and the scientific do not run well in double harness needs, I believe, a resonant restatement to-day. The profession is often blamed for its instinctive repugnance to the introduction of the supernatural into the art of healing This is attributed to that professional jealousy which is supposed to seize every doctor when an unregistered hand assumes the gold-headed cane which is the symbol of his craft I do not know that there is more professional jealousy among doctors than there is among lawyers; I doubt if there is as much as among plumbers and bricklayers No professional body loves an outsider who usurps its own particular functions, and long experience has shown that the unqualified practitioner of medicine is in double measure an unqualified danger to the public And yet how clients troop to his door or run in upon him a shower of post-office orders if he is a shrewd exploiter at once of the foibles and the earnest longings of mankind So it has ever been, so it will ever be As the cynic long ago said "If the public want to be deceived, let them" But the obvious fact is that the public want not to be deceived but to be cured, and that is why, if an authorised prescription in our cryptic Latin fails to bring relief they will cheerfully take a free medical tip in plain English from their Sunday paper's answers to correspondents, or accept as gospel the large promise of displayed advertisement, or if they are of a more serious and contemplative type, they will haunt the temples of those who say that they possess the secret of permanent good health.

THE RELIGIOUS HEALER.

With respect to the religious and quasi-religious healer, the medical profession is in a difficult position. It is precluded by the memory of its own empirical past from adorning its robes with the fragile fringes of infallibility Dedicated to science and conscious of boundless horizons still beyond its ken, whatever face the profession may present to the outer world, it must display in the intimate presence of truth the modesty of the neophyte Nor can it refuse to acknowledge the sincerity of other searchers after truth travelling upon roads other than that on which its own feet are set Nevertheless, the profession owes to itself and to the public the duty of speaking out.

There is no difficulty, of course, in dealing with the vulgar quack who sells a bottled panacea to the joint benefit of himself and the Inland Revenue, and who leaves the deluded purchaser, if he be lucky, much the same as he was before But obvious difficulty arises when a new theory and practice of the art of healing is proclaimed and health is taught in terms of religion, and religion in terms of health In that company the medical scientist has no place His facts are not theirs Their terminology is not his. There is no meeting ground in common He knows what he understands by science; he does not know what they mean Even if he were willing to join the new cult, its complete refusal to recognise the need of a medical art, such as that which he practises, must effectually keep the door of communication closed Science has long since framed her own laws of method and proof which are recognised throughout the world, and the medical profession can have no commerce with any newly organised cult which denies the very bases on which these laws are founded. But this is not to say that no friendly cooperation is possible between doctors and those who are earnestly studying the healing power of the mind. Let there be no contention about names, when we speak of mind or soul, let us freely admit that we cannot take a specimen of either on a slide and put it under a microscope. That there is a certain healing power, a true *vis medicatrix*, in religion as in nature, few careful observers would, I think, deny Between religion and nature, between mind and body, there exists not an opposition but a relation. Every medical man of experience must have known cases in which his own scientific skill has seemed to be helped, sometimes most strangely and wonderfully, by some serenity of mind in the patient, some quiet confidence in the ultimate issue, some realisation of sure dependence upon a higher power, some tranquillising influence of the soul upon the physical stress and tumult of the senses—beneficent, soothing, healing activities in which he and his art have had little or no share.

These facts are not reducible to formulæ Science cannot explain them as she can explain the operation of an anodyne stealing along the passage ways of sense We do not, indeed, know very much about that mysterious parallel road, which always lies in deep shadow, where the mind or the soul, reacting to a spirit which seems to come from without, influences profoundly in its turn the body which the doctor is trying to heal There is no place in respect of this region for dogmatic utterance; but there is always room for patient and reverent inquiry. The whole of our profession will await with impartial mind the result of the labours of the joint committee which was appointed some months ago to investigate the phenomena of what is generally called spiritual healing Meanwhile, I say with confidence that any systematised creed which professes to dispense with the art of medicine and surgery is false to the Divine. But if any possess the precious gift of ministering to the mind diseased or of imparting to those who walk in the shadow of the valley the courage to move serenely among the phantoms and terrors which haunt that road, let us be sure that so divine a gift can only emanate from a divine source, and let us welcome the help of any unseen wings that stir the air with healing. In such moments the old tradition is confirmed that the doctor stands in a different relation to his fellow from most other professional men I do not claim that the doctor consciously lives, like the priest, what is called a dedicated life—though I have known men to whom that noble phrase might well be applied—but there is a special nexus between doctor and patient which is independent of, as it is unpurchased by, the fee which passes between them The public expect much of the doctor and take much for granted I like that old story of the woman of Selkirk who, observing her doctor ride by, said to the neighbour with whom she was gossiping, "Aye, there goes the doctor—honest man! He's brought all my ten bairns into the world and never got a rap for one of them"

The Real Doctor

The national health insurance scheme has at any rate checked the more unconscionable draughts which once used to be made upon the deep well of medical disinterestedness, but the profession still gives much for which it receives no direct return but gratitude, and sometimes even that is left unspoken That, however, is the penalty of altruism and an established reputation for kindness of heart, and that is partly why the doctor holds his place in the public esteem, despite the satirists, the playwrights, and the novelists who still delight to poke their fun—on the whole not unfriendly—at his etiquette, his bedside manner, his scraps of weird Latinity, and the artifice with which the wild surmise of an impossible diagnosis may still be masked under the grave, slow smile of apparently assumed certainty

If we want the portrait of the real doctor we go, not to books, but to life We expect him, not in vain, to combine with knowledge the understanding that springs from intuition till it is most richly reinforced by experience, to bear a tranquillising influence, and to radiate confidence and hope We expect him to exemplify, like the surgeon of whom Henley wrote

> "Faultless patience and unyielding will
> Beautiful gentleness and splendid skill,"

caring always for life as a thing most precious, quick—and now happily well able—to spare the sufferer one unnecessary pang, the restorer of health, a strong sure help in the more supreme moments

> "In many a house of care, when pain has forced a footing there
> And there's a Darkness on the stair will not be turned away"

Such is the doctor, the family doctor, who is more to the public at large than the most learned and the most wise who dwell in those two long, unlovely, parallel streets of London, where the waters of healing are laid on at the main He is still the same, even though he is called upon in these days to enter the service—the preventive service—of the Ministry of Health, disarming disease before it strikes, saving the firstborn, not by a smear of blood on the lintel, but by a dash of disinfectant in the drain, and sometimes purchasing the immunity of millions as cheaply as the restoration of a few convalescents to health The doctor's professional qualifications may change as medical science advances, the qualifications he needs to win him the confidence of his fellows are unchangeable as human nature itself That confidence it is the policy of this great Association and the desire of every one of its members always to deserve and for ever to retain

---

Founders of Westminster Hospital — On July 14th the Lord Chancellor, Lord Cave, unveiled at Westminster Hospital a tablet recording the names of the founders in 1719, and of the presidents, chairmen, and treasurers at the time of its erection on the present site in 1834, and of its reconstruction in 1923–24 The original founders were Henry Hoare, William Wogan, Robert Whitham, Patrick Cockburn, and Thomas Wisdome The Hoare family have continued to be closely connected with the hospital, but no descendants of the other founders have been traced

---

An Address
ON
PROGRESS IN PSYCHIATRY

Delivered before the Section of Psychiatry, Royal Society of Medicine

By R H COLE, M D, F R C P Lond,

PHYSICIAN FOR MENTAL DISEASES, ST MARY'S HOSPITAL, LONDON, PRESIDENT OF THE SECTION

The practice of psychiatry is partly science, partly art It is not unlike war, where the unchanging principles of strategy are but little influenced by the ever-progressing science of tactics The pathology and treatment of the insane make steady strides, while the problems presented by the relationship of law and public opinion to disordered conduct seem to remain remarkably constant, and require adjustment by successive generations I am able to recall changes and progress in the medical aspects of psychiatry, while I find a recurrence to-day of many ethical and legal questions which were being raised in similar terms when psychiatry first claimed my attention From the days of my boyhood I was interested in that ancient institution at Hanwell, by reason of its proximity to my home When I began practice over three decades ago, London was a city of hansoms and horse 'buses, motor-cars were a joke, houses were mainly lit by gas, and the telephone was an uncertain luxury Flight in heavier than air machines was scarcely dreamed of outside the laboratories of scientific folk, and the gramophone and wireless were still far from finding a place in every home I should like to remind you of some of the dominating figures in our specialty at that period Their names will aid me in outlining the position of psychiatry and its handmaiden psychology, in the days to which I refer I shall then proceed to indicate some of the steps that I consider to have been the most important advances during my professional life, and the influences they are likely to exert on the future In Britain we had Maudsley, Blandford, Hack Tuke, Savage, and Clouston, all of whom were in active work I had the good fortune to be closely associated with Maudsley during my early days, and I could dilate at length upon the sayings of this remarkable sage Mercier was commencing a steady output of valuable writings, which are now, I regret to think, too little studied Crichton-Browne was already renowned as an orator, and him we happily have with us to-day The late Clifford Allbutt became a member of the Lunacy Commission, now the Board of Control, and the present Lunacy Acts were coming into operation, not without some travail to the psychiatrists of the day

Both psychiatry and psychology were on the eve of great developments The French school was pushing hypnotism, and was sharply divided by Bernheim at Nancy, and Charcot in Paris, both of which centres I proceeded to visit The subject of hypnotism was very much in evidence at home, and was investigated by a committee of the British Medical Association Extensive claims were being made for the future of this method of treatment, but in England, Germany, and America it was not found to be of great use in the psychoses, though its value was recognised when applied to hysteria G M Robertson of Edinburgh, and Percy Smith in London did a great deal to give hypnotism its proper place as a means of treatment The interest in hypnotism was very wide and had far-reaching results It acted as a stimulus to many who were, like myself, confronted with mental phenomena that seemed to have little or no explanation

Early Difficulties in the Study of Psychiatry

Let me give you some idea of the perplexity of a young medical man who wished to engage in psychiatry in the times of which I am now speaking Medical students still "walked" the London hospitals, though it was necessary to hold clinical clerkships and dresserships before being admitted to the final examinations At my own hospital, as with many others, no lectures were given on psychological medicine, the subject being for the most part lightly dealt with from the medico-legal standpoint by the lecturer on forensic medicine Many of us qualified without ever having seen a clinical demonstration, though some of us attempted to remedy matters by attending Bethlem or St Luke's Hospital

Psychology was a closed book, and was regarded as a subject for philosophers and divines, and outside the scope of medicine As a consequence a medical man took up an asylum appointment with a sublime ignorance of the mental maladies of the patients he was to treat, and the novel clinical material was at first confusing and disheartening Psychology was then focused on the cognitive aspect of mental processes The older methods of introspection had been modified by the experimental psychologists. Weber and Fechner had originated psycho-physical researches Helmholtz had given us his fine work on sensation Wundt was still absorbed in research along experimental lines The purely academic student still perused the writings of Mill, Spencer Sully, and others, though the classical text-book of William James in America soon became the standard work after its publication in 1890 Psychology almost seemed to deserve the epithets hurled at it by the energetic young psychiatrist It did little to assist him in his special study, and seemed remote from human affairs

Psychiatry was almost as sterile, although Maudsley Clouston, and Savage did much to awaken it by their stimulating writings Clinical descriptions in the text-books of the times were good, but pathology was little understood and psycho-pathology was practically non-existent Tuke's dictionary may perhaps serve as the most useful guide to the psychiatric ideas of this era

PROGRESS IN RESEARCH ON THE NERVOUS SYSTEM.

Progress in psychiatry is closely linked with progress in psychology, and advances in many sciences beside medicine I should like to refer here to the accumulation of knowledge that has taken place in my time on the structure of the nervous system and its functions For long it was held that if enough were known of the brain and cord, the mystery of mind would be explained An immense amount of work has been done on anatomical embryological, physiological, and clinical lines to define with increasing accuracy the structure and proper functioning of the nervous system Moreover, the knowledge of the autonomic system, its functions and relation to the later cerebro-spinal system, together with the structure and biochemistry of the endocrine glands has grown in a manner which seems to leave little to be discovered with our present means of investigation

Most of this work has been done in the past three decades, and when I entered medicine a great impetus was being given to the histology of the nervous system by improved methods of staining and the development of the microscope It may serve to remind you of the scope and detail of these and allied investigations if I recall to your memory the names of workers like Hughlings Jackson, Flechsig, Mott Bolton, Elliot Smith Golgi, Gaskell Langley, Sherrington, Head, Pavlow. and many others The work of Orr and Rows on the path of infection in the nervous system by means of the lymphatic circulation was an important contribution to psychiatry, and is a fine example of the use that can be made of pathological material in mental hospitals The distinguished physiologist Sharpey Schafer has taught us much of the endocrines closely followed by the introduction of glandular therapy. It may be speculation to suggest that further progress may result from the introduction of the use of ultra-violet rays in microscopy It does seem that advance in the anatomy and physiology of the nervous system must depend upon progress in laboratory methods and the results of researches which we may expect to increase the field of the microscope and teach us more of the properties of the living cell

In spite of this work on the central nervous system we have much yet to learn to establish the physical basis of mind on a satisfactory foundation. Few will maintain that consciousness can exist without brain It has become obvious that the size quality and structure of the brain is an index of the intelligence of its possessor But we cannot yet speak of mind in terms of cerebral function with all that we have learned of the cortex, both in health and disease

NEW PSYCHOLOGICAL CONCEPTIONS

These observations bring one to the almost startling growth of fresh psychological views which have thrown new light on the mechanism of insane conduct and symptoms, and provide new hopes for the future

I regard the illuminating writings of Janet as a landmark in the progress of psychiatry. His conceptions of dissociation and his clear descriptions of the possible psycho-pathology of hysteria and psychasthenia were an inspiration to many, and merit careful study to-day His views were taken up in America by Morton Prince and others, and paved the way for the psycho-analytic movement based upon the work of Freud This movement has attracted followers all over the world and has produced an immense literature Original psycho-analytic conceptions have met with powerful opposition, some of which is reflected in the establishment of separate schools headed by Jung and Adler There are certain features of the work of Freud which are worthy of careful notice. Firstly, it is based upon clinical observations Secondly, it appears to obtain biological confirmation That is to say, it is claimed that the concept of primitive mental processes, obeying the pleasure principle, receives some support when applied to child study fairy tales, folk-lore, philology. and anthropology Further no work has done so much to attach meaning to the apparently meaningless symptoms of insanity

As I have indicated, psychology in my early days of practice was academic and attention was centred upon the intellectual aspect of consciousness The psycho-analytic and other schools have moved the interest to the field of instinct Indeed psychology has since become vitalised and brought into very close relation to psychiatry Many workers have contributed to this desirable result McDougall's work on instinct and social psychology has educated many beside the psychiatrist, so also did the work of Rivers Trotter's original enunciation of the herd instinct is a splendid contribution from a surgeon. and has done a great deal to clarify the conception of conflict in psychiatry.

Psychology is making new demands and is being applied to social as well as medical problems There has recently developed most instructive work on industrial psychology. initiated by C S Myers. His investigations into fatigue in industrialism, and the conditions which govern the output of work in factories and workshops make fascinating reading It seems to me that medical psychology has an increasing responsibility in relation to social life Not only must we be called in to place on a scientific basis the nature of occupation hours of work and repose, and proper recreation but studies are necessary on such questions as the influence of alcohol and tobacco on work, the conditions which affect sleep, and the selection of careers by the young There are yet more general questions which the psychiatrist must assist in solving Recent controversies indicate that some modern trends in art are abnormal and have a psycho-pathology of their own Changes are taking place in religious beliefs. The political world is disturbed and full of unrest'

The underlying causes are psychological and the medical psychologist should be able to elucidate them There is no end to the applications of modern psychology Why, for example, should engineers be more susceptible to Communism than miners or factory workers, as has recently been alleged ?

But to us the application of the new psychology to psychiatry is of chief importance What has it done ? What is it going to do in the future ? The answers may be summarised by the three words psycho-pathology, psychotherapy, and prevention

Psycho-pathology has been given a reincarnation It is evident that many of the novel concepts concerning the mechanism of mind are finding a permanent place in the literature of psychiatry Terms like conflict, repression, projection, sublimation, transference, and libido are familiar to us all, and provide us with fresh implements for research and treatment The causation of the psychoses has been placed in a new light, and for the first time in the history of psychiatry a scientific explanation of the bizarre conduct of the psychotic patient is available The future holds great things in store for psycho-pathology, and I venture to point out the scope for psycho-pathological research to be found in our mental hospitals The chronic type of patient has much to teach us as to the sources and development of delusions and hallucinations

Psychotherapy has advanced far during my time Its practice is capturing the attention of the general physician more and more and its place in medicine is assured Psycho-analysis is one method of several approaches to psychotherapy, but it is yet early to speak with conviction concerning the results of analysis The method seems of little use in the established psychoses No army of analysts could successfully return to normal life the chronic patients living sheltered lives in the institutions of our country As to early cases and psychoneurotics there seems to be little information available to determine whether psycho-analysis obtains better results than older methods of treatment Discussion concerning the nature and functions of the unconscious mind continues Different schools have their own methods of treatment and investigation, and seem to diverge along paths whose end is not yet in sight Some writers there are who have done great service in coordinating the somewhat confusing views and teachings of clinical psychologists Both psycho-pathology and psychotherapy in this country owe a debt to Bernard Hart, whose incisive style presents to the medical profession a well-defined picture of the psychology of insanity and its application to methods of treatment

Prevention of disease which is one of the chief aims of medicine will as regards mental disorders be augmented by the lessons of the new psychology The after-care of patients discharged from mental hospitals is receiving close attention Thirty years ago the investigation of child psychology was in its infancy. Among other developments the organised tests for intelligence have reached a high standard The last 15 years have seen great progress in the investigation, care, and treatment of defectives of all grades, though more remains to be done The teaching that the foundation of neuroses or psychoses can be laid in the first few years of a child's existence is one which requires earnest consideration The ignorance of the public concerning mental hygiene is still a serious matter, and the spread of education in such knowledge is of the utmost importance to the coming generation

General Paralysis

I return to the consideration of brain pathology, the study of general paralysis best illustrates the progress that has been made It is hard to realise that when my student days were over, the pathology of general paralysis was not yet understood The disease was mostly attributed to sexual and alcoholic excesses Some authorities described the paralytic diathesis and maintained that paretics were " born not made " Clouston at one time even used to say that paresis was a certificate of general intelligence Yet the specific origin of the disease was suspected as far back as 1857 I regard the elucidation of the pathology of general paralysis as the greatest step that has been made in cerebral pathology in my generation, for not only has the establishment of the spirochæte as the cause of paresis definitely cleared up an old problem, but the work has opened up many new questions As is almost the rule in scientific progress, the answer to one query raises a host of others Why should paresis only occur in a small percentage of syphilitics ? What is the meaning of the long latent period between infection and the onset of symptoms ? Is another factor beside the spirochæte necessary to produce the clinical entity we know as general paralysis ? Or is there a special strain of the organism responsible for the disease ? It is not yet definitely known, indeed, how the organism invades the brain, nor why the application of arsenical compounds is so disappointing when applied to nervous syphilis One cannot leave this absorbing chapter in mental pathology without mentioning the work of Sir Frederick Mott He taught the specific origin of paresis with a persistence and insight that were fully justified by the demonstration of the organism in the brain of a sufferer by Noguchi in 1911 We have gained increasing assistance in the diagnosis of the forms of syphilis of the nervous system during the last 25 years Wassermann has given us a test, which, if properly carried out, enables the presence of syphilis to be determined with certainty The new knowledge of the composition of the cerebro-spinal fluid, and its behaviour in the presence of various infections, has been of inestimable value General paralysis was always regarded as a hopeless disease, although I believe that energetic treatment by mercury and the more recent arsenical compounds invariably influenced the course of the disorder Of late years the malarial treatment has introduced new hope for the victim of paresis Men are now living comparatively normal lives who were so treated a few years ago It seems definitely established that the method applied to suitable patients gives the best chance of improvement or even recovery that medicine has yet been able to offer Looking back over 30 and more years and recalling the uncertain pathology of the disease, its subjects for the most part untreated until the inevitable end in institutions all over the world, there is no more dramatic instance of progressive triumphs in psychiatry in which clinicians and laboratory workers have happily shared

Progress in Clinical Conceptions

Noteworthy progress has been made in the improvement of our clinical conceptions, older views have been attacked, new and sound entities established Korsakow's description of the alcoholic psycho-polyneuritis was being made known over here when I first studied the literature The syndrome has stood the test of time It is now becoming uncommon, but appears at intervals and was associated with arsenic in a medico-legal case of importance which occurred a few years back Of all those writers who have taken part in the advances of clinical psychiatry, Prof Kraepelin, of Munich, has perhaps claims to the premier position He has given us the conception of the manic-depressive psychosis, and has defined the conditions now grouped under the term dementia præcox His writings are models of close observation and description Not only do we owe to him new clinical ideas, but he has done much to produce our existing system of classification Moreover, he has re-educated us in the importance of the longitudinal section in psychiatry, by his insistence on the careful study of the life-history of mental cases

Clinical conceptions are becoming once more in a state of fluidity. Increasing difficulty is being experienced in placing a patient in any definite category The puerperium, the climacterium, and the senium are being dethroned as specific factors in producing insanity More satisfactory ætiological foundations are being formed for confusional states. One of the chief difficulties of clinical description is the diversity of meanings attached to the same terms when used in different countries. An early standardisation of our nomenclature is desirable, and would mark a step forward in the psychiatric progress of the world.

PROGRESS IN THE CARE AND TREATMENT OF THE INSANE

Both care and treatment of patients have received unremitting attention during my experience of psychiatry, and I think that in some respects care has outstripped progress in treatment. As regards institutions for private patients, in many of them not only have fabric and equipment been brought up to date, but the treatment aspect is paramount and the element of detention is receding as is illustrated by the increase of voluntary admissions. Up to the time of the 1890 Act and even afterwards, there was great activity in building rate-supported institutions, some of which reached an immense size. Of later years there has been a return to smaller hospitals, and this is desirable on many grounds. Those of you who can look back on the asylums of 35 years ago will probably agree with me that the most striking change on entering a large institution to-day is the comparative absence of noise in and about the buildings. When I first became familiar with mental hospitals I was much impressed by the restless excitement that prevailed, the shouting, singing, and constant chatter of conversation. All that has changed and the quietude even where large numbers are resident is in itself a testimonial to the way in which the gradual hospitalisation of our mental institutions is taking place. I believe that one of the chief factors responsible for this change from noise to peace has been the withdrawal of beer from the diets of our patients. Also the steady diminution of acute and chronic alcoholic insanities from the wards of our institutions during the term of my practice has been remarkable. Alcohol was an exciting or predisposing factor in at least 23 per cent of cases admitted to asylums round about 1890. This figure had fallen to less than half in 1920.

I can recall many improvements in the administration of large hospitals. All of us have gladly seen the last of the old term "Pauper Lunatic Asylum." Rate-aided patients are better clothed, and their dresses and suits are less like uniforms than they were. Provision for occupation, both in and out of doors is more generous, and work is often rewarded with some local currency with which patients may make simple purchases in a shop or store provided for the purpose. Contact with the outer world is maintained more completely, by newspapers, wireless, and an increasing system of leave and parole. Cases are separated into categories as far as that is possible, and few institutions are now without a reception ward or wards for each sex, even if a separate building is not available for the recent cases.

Another necessary change for the better in the care aspect of our patients has been the improvement in the dietary scales. There is, in my opinion, a close connexion between diet and the occurrence of those preventable maladies, tuberculosis and dysentery, which were endemic in many large institutions. The high incidence of tuberculosis caused great concern between 1890 and 1900, and one often heard that all mental hospitals should build adequate open-air wards for the isolation and treatment of cases which were bound to occur. Much argument was forthcoming concerning the statistics of tuberculosis cases occurring in mental hospitals as compared with its appearance in the general population. Some authorities maintained that it was ten times as high in asylums as in the sane community. While this figure may be too severe, there is no doubt that tuberculosis was very prevalent in institutions for the care of the insane. Deaths from tuberculosis, indeed, in mental hospitals rose to alarming proportions during the war, when diets were necessarily cut down to a minimum. What used to be known as "asylum dysentery" is a phenomenon of great interest and its causation and proper treatment has now been accurately determined. It is noteworthy that deaths from tuberculosis or dysentery are very rare in registered hospitals. In licensed houses, where the meals closely resemble those enjoyed by the middle and upper classes, cases of either disease are practically unknown. It would seem as if these two scourges tend to decrease as the standard of living improves. Much attention used to be paid to caloric values, and it may well be that some of the scales of diet have lacked those elements known as vitamins which we have learned are essential to a state of good health, and consequently a high resistance. Dietary scales, it is satisfactory to record, have been much improved of late, and it will be interesting and instructive to observe the effects on the incidence of dysentery and tuberculosis, as well as on the recovery rate.

Coincident with the growth of the hospital idea we find the slowly developing practice of employing female nurses for male patients. This has had excellent results, but is still in a somewhat experimental stage, and I do not believe that the good male nurse will ever entirely disappear. The progress in the standard of nursing in mental hospitals can best be described as amazing. The Royal Medico-Psychological Association must be given much of the credit for this work. The syllabus of training and examinations for the proficiency certificate in mental nursing was commenced 35 years ago. The official handbook has grown in size with successive editions, and the seventh and latest, published in 1923, is a most informative and complete guide to nurses, and might well be studied by practitioners and students. General as well as special training is being insisted upon, and the formation of a State Register on which mental nurses may be included is a step in the right direction. Rates of pay and hours of work have been improved, until there is a danger of professional nurses losing sight of the nature of their calling, and regarding their hours of labour as so much routine, which true nursing can never be. I believe that the arduous training now necessary for nurses to qualify will remove entirely such tendencies, and that interest in the work will be essential if a nurse is to pass the necessary examinations.

There is one excellent movement which I have seen developing, and which is likely to become more general. I refer to occupational therapy. It is true that patients have been employed in workshops, laundries, and farms, where they have been largely engaged in routine work, often of a lowly nature. But occupational therapy is meant to inform, to recreate, and re-educate. We owe a good deal to American practice for this aspect of treatment. Not only is occupation of great value in convalescent states, but terminal dementia may be held off for many years if some regular occupational interest be provided. Instructors are necessary, and a great variety of work can be made available. At the Bloomingdale Hospital, New York State, 80 per cent of the patients take up some daily task during their residence. Some American hospitals have adopted physical training classes, conducted by a resident instructor who may have a gymnasium at his or her disposal. Pioneer work of this kind is now being carried out in this country, and I hope the system will take its place in the equipment of all our large hospitals.

Progress in treatment must ultimately result from research and advances that are made in other branches of science. The whole of the past 35 years has been marked by a slow but increasing equipment in laboratories and devoted laboratory workers. In this psychiatry owes a debt to the London County Council, who established the central laboratory at Claybury 35 years ago, now moved to Denmark Hill. While London may rightly be considered the centre of psychiatric research, much activity has been shown by workers scattered throughout Britain. I recall the labours of Bevan Lewis at Wakefield, the for research, generous contributions to the funds of mental institutions, and, above all, the trust that has been happily given to medical men in every other branch of practice

And now nothing remains for me but to thank you for your kind attention To those of you who are about to take up the difficult and sombre study of insanity I would say that the future is bright with hope. In spite of all that has been done, wide tracts of virgin soil still lie before us Let our interest direct our work, there is a place for all, be it at the bedside or in the laboratory We shall need patience and tolerance; and if we serve faithfully the needs of our patients, continued progress in psychiatry will be assured

A CASE OF
ENCEPHALITIS LETHARGICA OF SEVERE TYPE.

TREATED SUCCESSFULLY BY INJECTIONS OF ELECTRO-COLLOIDAL GOLD AND SILVER

By ARTHUR W FULLER, M D Edin

As a good deal of attention is being given at the present time to encephalitis lethargica and its treatment, especially by medical officers of health, the following clinical report may be of interest

The patient, a lady aged 68, after complaining of recurring pain in the right temporal region for a few weeks, had an attack of vertigo in the street, she was brought home and relapsed speedily into a condition of stupor from which, however, she could be aroused Sir William Willcox was called in consultation, and the diagnosis of encephalitis lethargica was made, with a grave prognosis The cerebrospinal fluid, which was examined by Dr A B Porteous, was found to be normal, except for a very slight lymphocytosis, there being no excess of globulin. Cultures were sterile and no T B present.

Symptoms and Course of the Disease

The face was expressionless and mask-like The mental condition was stuporose alternating with delirium, especially at night She spoke with great difficulty and hardly above a whisper. There was spasmodic twitching of the face and muscles of the neck, and she complained of pain on the right side of the face and temporal region, also of frontal headache The antra and nasal sinuses were examined by Sir James Dundas-Grant and found normal The urine showed a trace of sugar All the reflexes were present There was no diplopia, but the ocular movements were performed with difficulty, especially the upward and downward, the horizontal movements being much less impaired, bilateral ptosis was also present There was great dryness of the throat and deglutition was very slow The patient lay almost immobile, except for involuntary movements of the right arm and hand resembling those of paralysis agitans

Third day The general asthenia was more marked, the stupor increased, and incontinence of urine and fæces supervened The temperature rose to 102° F and then dropped in the evening to 100°, with a morning drop to 99°, probably as the result of the fever mixture which was given The pulse-rate was about 90 per minute and became very small and weak at times, necessitating the administration of small doses of brandy. The left arm was now completely paralysed and she could only move the legs a little and with difficulty

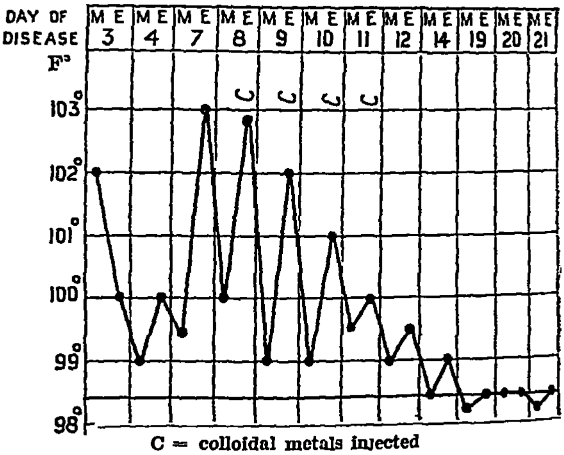
Fifth day There was considerable erythema on the buttocks and round the hip-joint

Sixth day There were increased spasmodic twitchings of the face, eyelids, and right hand and leg, great stiffness of the neck muscles, increased difficulty in articulation and swallowing, and deep stupor, from which it was extremely hard to rouse the patient

Seventh day The temperature rose to 103° It was now almost impossible to rouse the patient, and feeding by the mouth had become quite impossible The respirations, which had been about 28, suddenly rose to 52 on the eighth day

There appeared little chance of recovery, but, knowing that electro-colloidal metals, particularly colloids of silver and a combination of silver and gold, had been employed successfully in the treatment of general infections, I decided to give an intravenous injection of 0 05 per cent suspension of gold-silver colloid The first result was a return to consciousness within an hour, the temperature dropped one degree, the respirations became 36 per minute instead of 52, and the pulse, which had been 140, fell to 120

Next day the temperature rose again to 102° at 10 P.M. when another intravenous injection was given. After this the temperature commenced to fall steadily, and at 2 P.M. the following day it was 99° There was a marked improvement both in swallowing and in articulation, and the patient was much more easily aroused The maximum temperature at night was now only 101°. Two more injections were given on this and the following evening, intramuscularly They were then suspended altogether for a few days, but the improvement persisted



C = colloidal metals injected

On the tenth day the mental condition was markedly better, but there was still incontinence of urine and fæces The maximum evening temperature was 100°

On the twelfth day there was some powers of movement in the left arm and hand.

On the fourteenth day her speech was almost normal, albeit a little slow, and she moved her arms and legs more readily, but there was still some nocturnal delirium. The maximum temperature, which had shown a slight improvement each day, was now 99° the ophthalmoplegia became less marked, the fibrillary muscular movements and twitching of the face and neck muscles subsided, and the power of voluntary movement gradually returned

On the sixteenth day the silver-gold colloidal injections were resumed daily for four days, as the mental condition was not satisfactory and was not improving pari passu with the other symptoms, for she still had some nocturnal delirium and illusions The result was marked, for she began to take an interest in her surroundings, to converse intelligently, the delirium at night was less, and the incontinence ceased a few days later The temperature was now normal at night

At the end of four weeks the patient could sit up and eat simple ordinary diet There was still asthenia, but she was gaining strength steadily At the end of five weeks she was able to walk about her room and her mental condition was nearly normal, her memory being fairly good

At the end of the sixth week, beyond general debility, there were no abnormal symptoms except that sometimes she complained of sleeplessness and some stiffness of the muscles of the neck

It is now five *months* since the acute symptoms subsided; there are no abnormal physical or mental signs, and she is resuming her usual social life

Remarks on Treatment

Besides the gold-silver injections, which acted like a specific in this case, the great desideratum is good nursing, which happily was available The stuporose, almost comatose, condition of the patient, the complete incontinence and general utter helplessness, are a heavy tax both on the skill and patience of the nurses The subsidiary treatments included the use of an ice-bag and various analgesics for the pains in the head, which at times were very severe, antiseptic swabbing of the mouth and the administration, during sleepless and restless periods, of mild hypnotics But beyond all these in importance is the question of nutrition In this case rectal feeding never had to be resorted to. Stimulants must be given occasionally, and both brandy and hypodermic injections of liq strychninæ ♏v were administered, when there were signs of collapse, which were not infrequent Milk, Brand's meat juice, malted milk, coffee, Allenbury's food, Eatan, jellies, &c, were all found useful during the acute stage

With regard to the colloids, their action is that of a protein stimulant, but, unlike many other stimulants, there appears to be no subsequent depression if given in small enough doses There is a reaction of course, but it is a reaction against the disease, similar to that produced by a vaccine, and is not a severe one Their advantage over vaccines in cases where the specific organism cannot be isolated lies in the fact that they are always ready to hand and can be given at once either as a substitute for, or as a preliminary to, vaccine therapy, and with as good if not better results It would be interesting to know if the gold-silver colloids have been used before in this country in epidemic encephalitis for the most gratifying results of their employment in this case has been that the changed mental condition and various types of paralysis so frequently observed as sequelæ have not occurred

Among other treatments recommended for this disease are intramuscular injections of 4 c cm of a 25 per cent solution of magnesium sulphate (Edwin Matthew, THE LANCET, 1924, i., 1157), intravenous injections of sod salicylate 1–30 solution have been used with reported good results by Rathery, Gournay, Courcoux, and Maignant A vaccine has been made from the fixed virus of encephalitis lethargica and improvement from its use has been reported, but the evidence is inconclusive

The bacteriology of the disease is at present unsatisfactory, but Loewe, Strauss and Thelhimer have grown an organism resembling that of Flexner in poliomyelitis

The infectivity is very low and contacts rarely appear to suffer

The clinical picture is that of a general infection, and the organism is probably a filtering bacillus producing a virus, which has a selective action on the brain and spinal cord by way of the cerebrospinal fluid, the symptoms varying according to the damage which may result whether in the meninges, cerebral hemispheres, basal ganglia, pyramidal tracts, &c The incontinence which is so constant a symptom is mainly due to the lethargy and general stuporose condition

The after-treatment is the treatment of convalescence, with special reference to abundance of rest and sleep and rigid exclusion of all excitement, the avoidance of strong tonics, and the recognition that the time may be considerable before complete restoration takes place

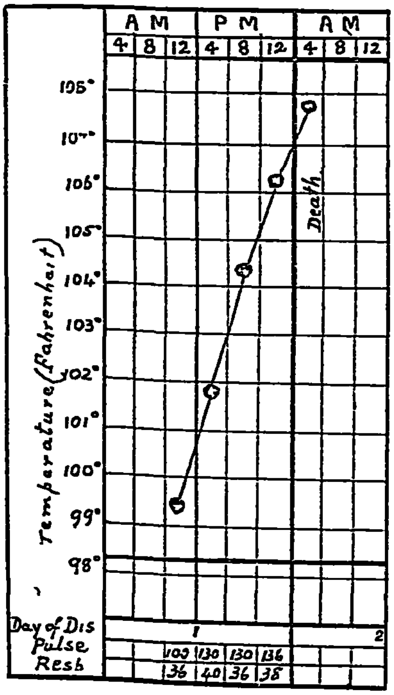
A NOTE ON TWO CASES OF CENTRAL PONTINE HÆMORRHAGE

By A MUIR CRAWFORD, M D, F R F P S GLASG,
ASSISTANT PHYSICIAN, ROYAL INFIRMARY, GLASGOW

A STUDY of the symptomatology of hæmorrhage into the pons demands on the part of the clinician, a clear conception of certain anatomical and physiological facts concerning this most important part of the brain Without entering into an elaborate discussion on the anatomy and physiology of the pons, it will be sufficient in this short article to summarise briefly the essential points to be borne in mind in endeavouring to comprehend the symptomatology of pontine hæmorrhage (1) The pons varolii lies in close proximity to the medulla crura cerebri, and cerebellum (2) It contains motor and sensory tracts coming from and going to the brain, the former passing down through the anterior (ventral) part and the latter passing upwards through the deeper parts (3) The nuclei of the fifth, sixth, and seventh nerves are placed near the floor of the fourth ventricle, while immediately in front of the pons lies the superficial origin of the third nerve (4) The basilar artery runs along the grooved anterior surface and gives off transverse branches which supply the pons

It will be obvious, therefore, that in such a complicated structure the symptomatology of hæmorrhagic lesions must be varied and complex according to the part of the pons involved and the extent of the lesion Thus in small hæmorrhages there may be no loss of consciousness, while in large hæmorrhages convulsions and early loss of consciousness are notable features, to which may be added the characteristic symptoms of crossed paralysis, conjugate deviation of the eyes and head to the side away from the destructive lesion, contracted pupils and hyperpyrexia In small unilateral lesions the paralytic phenomena associated with the cranial nerves will vary according to the site of the lesion Large hæmorrhages are usually central and are characterised by sudden loss of consciousness, bilateral paralysis, contracted pupils and hyperpyrexia The following two cases are examples of large central hæmorrhage in which these symptoms were well marked Both cases showed extreme hyperpyrexia immediately before death

CHART 1

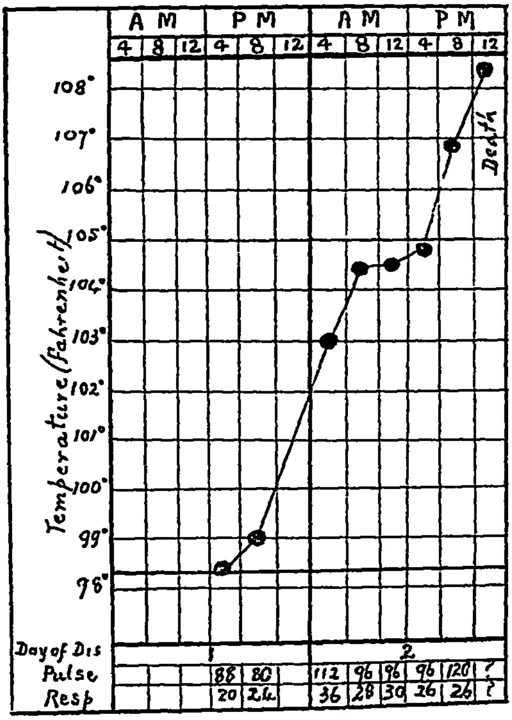


CASE 1 —Male, aged 31 years Admitted to hospital in the evening of Dec 21st, 1922, with the history of having suddenly been taken ill while attending a social function The attack began with an epileptiform convulsion, which was preceded by a feeling of nausea and followed by coma There was no history of previous epilepsy and no history of kidney trouble On admission the patient was deeply unconscious The pupils were moderately contracted and fixed, later on they became pin-point The conjunctival reflex was absent The face was of a pale cyanotic hue and the breathing stertorous He vomited a considerable amount of mucus mixed with some food material There was extreme rigidity all over, especially on the right side the smallest stimulus elicited clonic spasm of all four extremities The knee-jerks were greatly exaggerated with double ankle-clonus and positive Babinski on both sides, the arm jerks were increased On the following morning he was deeply comatose, the reflexes generally were abolished, and the pupils pin-point and immobile The urine contained a trace of albumin, but no blood, and tube casts were not found Systolic blood pressure was 190 mm. The patient died about 27 hours after the onset of the illness The temperature having steadily risen, reached 107 8° F just before death (Chart 1)

The autopsy showed a large central hæmorrhage into the pons, bursting through on its inferior surface on the right side A small amount of blood had effused into the basal cisternæ The kidneys showed the changes of chronic interstitial nephritis with some cloudy swelling The heart showed enlargement of the left ventricle, marked recent atheroma of the aorta, and thickening of the valves

Case 2 —Female, aged 51 years This patient became suddenly ill about midday on Jan 4th, 1925, and was admitted to hospital an hour later It was ascertained that she had been out of sorts for two months with "nervous trouble" The present illness began with vomiting, inability to stand or speak, and the early onset of unconsciousness On admission the patient was comatose There was rigidity of the arms and legs and the pupils were contracted and equal An hour later the right arm was becoming flaccid and there were signs of right-sided facial palsy The left arm and both lower limbs were still rigid, with much exaggerated knee-jerks and positive Babinski The head and eyes were turned to the left Next day the head was kept to the right side The heart showed signs of hypertrophy Systolic blood pressure 180 mm The urine contained a moderate amount of albumin, but casts could not be found Death occurred 35 hours after the onset of the illness and was preceded by a temperature of 108 1° F (Chart 2)

Chart 2



The autopsy showed extensive hæmorrhage involving the pons about its centre The hæmorrhage had burst into the fourth ventricle and blood was present in the whole ventricular system The cerebral arteries were very brittle and showed signs of atheroma The kidneys showed slight interstitial changes with a notable sclerosis of the renal vessels There was considerable hypertrophy of the heart, especially of the left ventricle, the aorta showed patches of atheroma

For permission to publish notes on these two cases I am indebted to Dr J B Mackenzie Anderson, into whose wards the patients were admitted

TUBERCULOSIS VERRUCOSA TREATED BY ULTRA-VIOLET RADIATION

AND ASSOCIATED WITH UNSUSPECTED TRICHINOSIS

By M WEINBREN, M R C S Eng , B Sc S Africa, D M R E Camb ,
MEDICAL OFFICER IN CHARGE OF ULTRA VIOLET DEPARTMENT, THE QUEEN'S HOSPITAL, SIDCUP , HON ACTINO THERAPIST, MOUNT VERNON HOSPITAL ,

AND

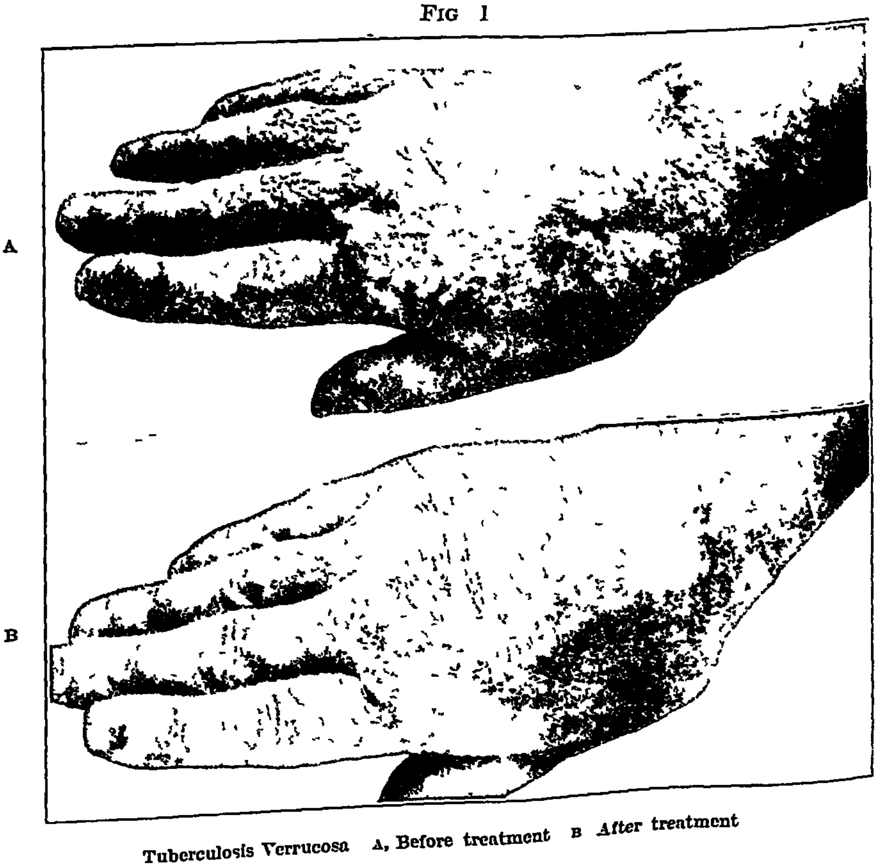
H K GRAHAM-HODGSON, M B , B S Durh D M R E Camb ,
RADIOLOGIST, KING'S COLLEGE HOSPITAL , MEDICAL OFFICER IN CHARGE OF X RAY DEPARTMENT, THE QUEEN'S HOSPITAL, SIDCUP

There are a number of interesting facts in connexion with this case which seem to justify its publication

Pensioner D , aged 53, was admitted to the Queens Hospital complaining of chest trouble

History —He served with the colours in Africa from 1891 to 1902, during which time he does not appear to have suffered from any serious illness In 1914 he re enlisted but was discharged the same year In 1915 he re enlisted and was sent to France, but he was sent home the same year and discharged on account of ulceration of the rectum In 1917 he again re-enlisted and was again discharged for ulceration of rectum and old fistula Not disheartened by his frequent discharges he again enlisted in 1919, this time in the Exhumation Corps While in France he contracted chest trouble (chronic bronchitis) He also states that while exhuming a body he scratched his right hand , within a fortnight the skin became swollen and several warts appeared at the site of the scratch These were cauterised at a dressing station, but the warts continued to spread up the arm and he was discharged owing to his chest condition and the condition of the arm His record card shows that the diagnosis verruca necrogenica was made in 1921 and that he was then being treated with liq acid nitrat of mercury

Fig 1

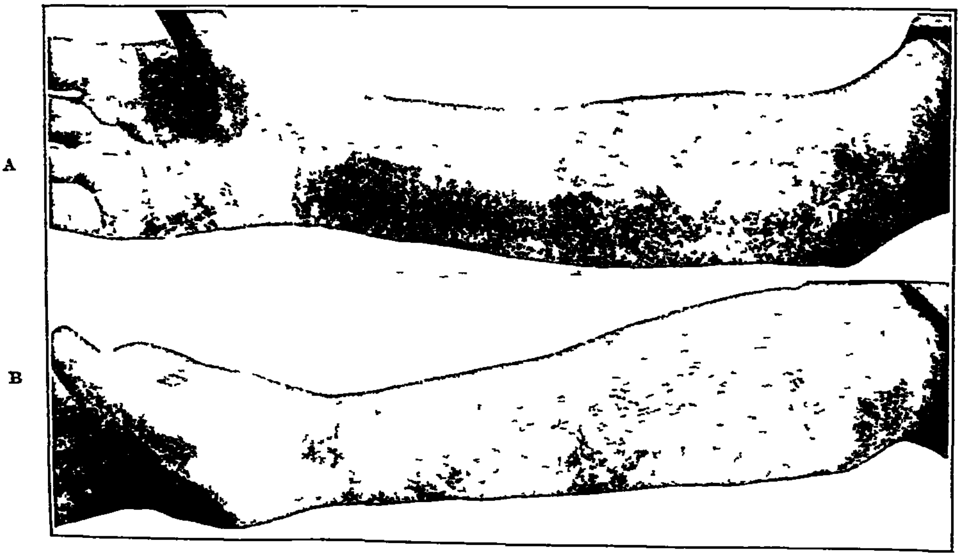


Tuberculosis Verrucosa A, Before treatment B After treatment

The patient's story is that the arm condition has been continually treated without benefit since his discharge in 1919

On admission the physical signs and a radiogram of his chest showed that he was suffering from chronic pulmonary tuberculosis Although frequent examination of his sputum was negative, when inoculated into a guinea-pig a positive result was obtained The complement-fixation test for tubercle was also strongly positive, the Wassermann reaction negative

FIG 2



A Before treatment B, After treatment

From his history and the record of his physical signs it is very probable that even in 1919 the chest trouble was pulmonary tuberculosis, the diagnosis not being made owing to chronic bronchitis masking the condition. The skin of the dorsal aspect of the fingers and right hand, and of the forearm, on its ventral aspect, was indurated and in places warty and ulcerated There was also a patch on the medial aspect of the arm (Figs 1 (A) and 2 (A)) Microscopically no particular organism was discovered, cultures were negative and a guinea-pig inoculation with pus from the ulcer proved negative also In spite of these findings the condition was regarded as tuberculosis verrucosa, the source of infection being either the patient's sputum or the body he was exhuming at the time he scratched his hand Dr H G Semon, dermatologist to the Ministry of Pensions, to whom the case was sent for an opinion, concurred with this diagnosis

Treatment —The arm was cleaned up with hot fomentations and ultra-violet exposures were started, local treatment was given with a mercury-vapour lamp and general radiation to the whole body with a Westminster lamp (30 amps white flame) The general radiation dose was started with 5 minutes at 4 feet the patient being placed between two arcs each 4 feet from the body This dose was increased to 20 minutes daily The danger of hæmoptysis in the treatment of pulmonary tuberculosis with ultra-violet radiation has been stressed in the literature dealing with the subject Admittedly great caution is called for, but this patient's chest condition was not regarded as a contra indication to general ultra violet radiation

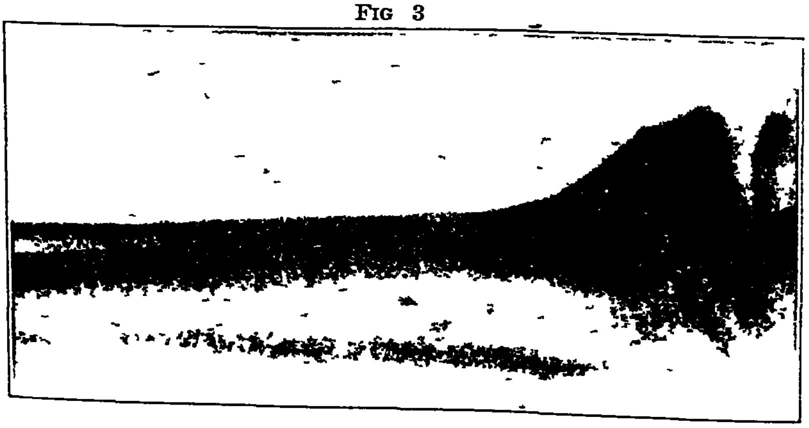
The local treatment was at first given with the Hanovia Alpine Sun lamp, 4 areas being treated daily and the dose to each area being increased from 4 minutes at 18 inches to 10 minutes at 9 inches The areas showing more extensive and dense induration were treated with the Kromayer lamp using the 5 mm uviol blue water-cooled filter the starting dose being 5 minutes and increasing to 15 minutes in contact This filter cuts off rays shorter than about 000 Å (A 3-minute exposure under these conditions on healthy skin will give between a second and third degree erythema resulting in pigmentation which will persist for a number of months, in some cases six months or longer)

Each area received an exposure every three to four days The condition rapidly improved (Figs 1 (B) and 2 (B)), and according to the patient it is now better than it has been during the last six years The treatment could have been pushed more rapidly—that is, more areas could have been treated each day—but for the heavy demand on the Kromayer lamp

The hand was X rayed for underlying disease of the bones, the patient giving a history of a fractured thumb There was no tuberculous disease evident, but unusual oval-shaped calcareous nodules were found in the muscles, suggesting trichinosis The lower limbs, consequently, were also radiographed and similar nodules were shown (Fig 3)

The patient has been questioned in the hope of discovering the probable date of infection with the *Trichinella spiralis* He denies ever having eaten raw pork, but the infection may have come from sausages[1] There is no history of any of the symptoms usually associated with the condition[2]—intense catarrhal inflammation in the intestinal canal, and symptoms which may suggest cholera or dysentery and may be associated with hyperpyrexia; rheumatic muscular pains when the embryos begin to wander from the intestinal mucosa via the lymph channels and blood stream to the striated muscles—nor does he complain of any muscular pains at present From the amount of calcareous infiltration, the lack of eosinophilia (the eosinophil count is only 1 per cent), and the absence of cysts in the stools it would appear that this is an old-standing case The encysted trichinæ may remain alive as long as 20 years before they become calcified and the embryos die[3] It is owing

FIG 3



Radiograph of leg showing parasites.

---

[1] Castellani and Chalmers Manual of Tropical Medicine third edition p 676

[2] Manson-Bahr Manson's Tropical Diseases eighth edition p 731

[3] Stitt Practical Bacteriology, Blood Work Parasitology fifth edition p 357.

to this unusual absence of all symptoms that the condition was only diagnosed by radiography Without dissecting out one of the cysts it is not possible to be absolutely certain of the diagnosis, but the radiographic appearance suggests the presence of some calcified parasite, and, as far as we know, cannot be accounted for otherwise

A NOTE ON THE TREATMENT OF VARICOSE VEINS BY INJECTION

BASED ON FOURTEEN MONTHS' EXPERIENCE

BY SIR SIDNEY ALEXANDER, M D LOND

THIS method of treating varicose veins was devised by Prof Sicard and Prof J Paraf, of Paris, largely as the result of their observations during the war, when they noticed that thickening and obliteration of the veins occurred in the course of treatment by the intravenous injection of certain novo-arsenical products I am indebted to Prof Paraf for his personal explanation and demonstration of the methods adopted later on for the express purpose of procuring this " phlebo-sclerosant " result

Investigation showed that this obliteration of the veins is due to an excess of soda in the solution, and did not occur when absolutely neutral solutions were used This observation led to the use of carbonate of soda solutions in the hope that they would produce the desired effect and yet not be toxic to the patient After successfully using a solution of carbonate of soda, Paraf and Sicard found that, although it was efficient as a sclerosing agent, it was too caustic to the perivenal and subcutaneous tissues, in view of the possibility of oozing from the veins or an error of needling They therefore tried other substances, including chloride of calcium, and hyposulphite of soda, finally settling on salicylate of soda in solutions of 20 per cent , 30 per cent and 40 per cent The salicylate was found effective in producing obliteration of the vein , it was not caustic to surrounding tissues, nor toxic to the patient (Indeed, as I have found, it is actually beneficial where arthritis and other " rheumatic " troubles are present, as is often the case) Even with salicylate, in poorly nourished tissues, should an oozing occur, there may very occasionally arise a limited " scar " , but this slowly heals without incident and without any tendency to spread The veins are cured in the meanwhile

In cases where the varicose veins are accompanied by varicose ulcers—especially where there is any reason to suspect syphilis—a 1 per cent solution of biniodide of mercury and iodide and chloride of soda in distilled water may be used This is quite effective, but has the disadvantage of being toxic, and can therefore only be administered in small doses The consequence is, of course, that the treatment is very much prolonged ; if pushed it may produce the usual reaction in the gums and elsewhere. Where varicose ulcers exist, I combine the injection method with the administration of parathyroid and calcium

The intravenous injection of salts of quinine has been tried by Genevrier, but Sicard and Paraf had occasion to use these largely during and after the war in the treatment of malarial cases and found these salts much too caustic for use in the treatment of varicose veins

Having practised, since May, 1925, the method perfected by Sicard and Paraf, I have effected the cure of some 100 cases of varicose veins, notes of which I have made These cases include several which had previously been subjected to excision of the veins—even twice—and in which the condition had recurred They also include many in which the patient, on account of the extent and distribution of the varicose condition, had been told that it was inadvisable to have the veins excised.

One such was a remarkable case in which there was varicosity of the saphena magna, saphena parva, and accessory saphena of both legs, the superficial circumflex iliac and the superficial epigastric up to the diaphragm, the vena dorsalis penis, and the venæ pudendæ externæ of both sides There was some œdema of the legs. Having satisfied myself that there was no obstruction of the deep veins, I started the treatment and had the satisfaction of curing all the veins ; the œdema of the legs completely disappeared During the whole time of treatment the patient, who is a gardener, kept at work , and indeed he worked with more ease and less fatigue during the progress of the cure than before

It is advisable to start the treatment with an injection of the 20 per cent solution in order to test the reaction of the patient Sometimes slight faintness is noticed, but this quickly passes off and seldom occurs after the first injection , it is purely emotional in origin. No general reaction occurs and there is no subsequent febrile disturbance On injection of the solution into the vein there is often a quite sudden constriction of the vein for a few inches, and in a large vein the convexity may become concave, " like a gutter," sometimes the skin in the vicinity of the injection shows " goose skin " over a small area The injection may be followed by some cramp in the foot and calf, but this is always supportable and lasts only three or four minutes or less

Of later effects there is really only one—and this is local It is what Sicard and Paraf call " endo-veinite," but as there is no febrile disturbance I should prefer not to use a term ending in " itis," which denotes inflammation Instead the condition may be described as chemosis of the intima which suggests acute congestion of the vein This may be sufficient to cause the opposing walls of the vein to meet and adhere and so obliterate the lumen A solution of salicylate of soda does not, of course, cause coagulation—indeed, in vitro it restrains clotting , but it has been shown by examination of portions of veins removed after treatment by this method that a thrombus, which forms firm and intimate adhesions to the walls of the vein, may form and become organised into a fibrous cord No movement of this organising thrombus has been ever been recorded, although the method has been practised since 1916, and I think we may be satisfied that no embolism ever occurs except in phlebitis with septicæmia with which this treatment is, of course, not associated

A further effect, coming on three or four days after the injection, is a slight reddening of the skin along the course of the vein treated, with some swelling and slight tenderness to the touch These are good signs and show that the treatment is succeeding Should the patient wish to do something for this tenderness, a simple warm fomentation affords relief to the slight pain which occurs

The first injection is followed up a week later by injecting the 30 per cent solution, and, later on, if necessary, 40 per cent solution

It is singular that so little attention seems to have been paid in England to the literature of this interesting and gratifying method, for accounts have been published in many journals[1] Of about a hundred cases that I have cured, only one has given me any real anxiety This was a case in which, three weeks after the saphena magna from foot to fossa ovalis was cured, the patient developed fever (102 2°) and rigors

The history of the case showed that this patient had since about 1910 been subject to occasional shivering fits lasting two or three days, the cause of which had remained undiagnosed because he did not consult a doctor A bacteriological examination showed *B coli* invasion, and his own doctor assures me that he does not consider the febrile attack to have been caused by the injections

---

[1] Gazette des Hôpitaux, 1922 The Jour Méd Franc, 1921, Présse Méd, Marseille Méd., 1920, Congrès de Médecin, 1922, Soc Méd du 9 arr, 1921, Bulletin 1922, Monde Méd 1922, Soc de Pédiat, 1922 Sicard, Méd, 1921, Soc de Biol, 1921 Jour de Therap, 1923 (Sicard), Paraf, and Forestier, 1921, New York State Journal, 1925 (This last deals with the pathology of varicose veins)

Scarring that sometimes occurs at the point of injection heals slowly but certainly It can be altogether avoided by strict attention to every point of the technique I am often asked if recurrences occur So far I have not seen any, but Sicard and Paraf with their longer experience say that "after two or three years a small number of patients return asking for more injections, as another vein—at a distance from that previously treated—has appeared," the facility with which these can also be cured being realised by the patient In conclusion, I may confidently say that in this method of treatment we have a means of curing the patient without laying him up or interfering with his business engagements or usual habits It is almost painless, and even those who complain of some pain are quite anxious towards the end of the treatment that no vein should be left untouched With due attention to all the proper technique it is quite innocuous and most gratifying to the patient

I again acknowledge my indebtedness to Prof Paraf for initiating me into his technique and allowing me to make use of his investigations and experience

Welbeck street, W

Medical Societies.

ROYAL MEDICO-PSYCHOLOGICAL ASSOCIATION

THE annual meeting of this Association took place at the British Medical Association House, Tavistock-square, London, on July 13th to 16th, under the new President, Lieut-Colonel J R LORD At the conclusion of the business meeting, at which tributes were paid to the late Sir Frederick Mott, formerly President of the Association,

Dr G A. AUDEN read a paper on the

Madness of Ajax as conceived by Sophocles

Dr Auden said that in his delineation Sophocles probably had in mind an attack of malaria, and the psychological insight shown argued an actual experience of insanity The poet was specially associated with the cult of hero-physician The picture drawn by Sophocles was a masterly presentation of delusional insanity, and the accuracy of it had been praised by many writers —The PRESIDENT said that Sophocles had appeared to have invested Ajax with attributes which were strongly marked in his own make-up —namely, jealousy and rivalry.

Dr T H HISLOP, Prof G M ROBERTSON, and Dr H J NORMAN also spoke

In the afternoon Colonel LORD delivered his Presidential Address on the

Clinical Study of Mental Disorders

He first referred to the fact that the Association had been granted a Royal Charter which he regarded as a recognition of the work which it had accomplished In the domain of knowledge he said, the modern man's criterion was utility rather than culture The Association was concerned with psychology in its broadest sense, it was now a living science, and the various schools of psychology were being judged according to the way in which they responded to the tests now imposed He urged the re-establishment of the Research Committee, which should include in its functions that of the definition of psychological terms and the collection and classification of clinical data for the aid of research work particularly, but also for the purposes of psychiatry generally. He would also like to see the needs of junior psychiatrists catered for in the shape of meetings for studying clinical psychiatry. He indicated several ways in which he considered the machinery of the Association could be bettered, and he also had much to say in favour of facilitating more research in the subject under conditions of team-work There was no sharp division between clinical psychiatry, clinical psychology, and clinical neurology, indeed, he regarded clinical psychology as the link between the other two.

The President proceeded to deal in some detail with the psycho-analytical conceptions of Freud, and the modifications of them held by Jung and Adler, remarking that the clinical psychiatrist nowadays was tending to view his cases more from the point of view of instincts, impulses, motives and wishes, and less from that of reason, judgment, belief, ideas, sensation, and hallucination. He sought to investigate the mind of the patient from its infancy in order to discover the cause of the condition found The President praised the work of Mott in psycho-pathology; it was true that bodily processes were a sounding-board for mental processes, and vice versa As to the word "recovery" as applied to mental cases, the President declared that what constituted recovery was indefinable, seeing that it depended on the normal mental make-up of the patient and his environment, which differed in each individual case Freud's definition of cure was the restoration of productive ability and the capacity for enjoyment To establish and further develop team-work in public mental hospitals would mean a reorganisation of the work of the medical staff, and the addition to it of specialists and experts in the various departments of medicine As little as possible of the time of the skilled psychiatrist should be spent on cases of chronic insanity; nurses and other lay officers were now so skilled that they would now take on more responsible work than formerly, and much of the work in connexion with chronic cases could be done by medical men who had not been specially trained as psychiatrists He set out a carefully elaborated plan of medical organisation for mental hospitals, contending that it afforded a fine opportunity for team-work

In conclusion, the President said he hoped the time would soon arrive when all mental institutions would be equal before the law. There was a wealth of psychiatric practice in general medicine, and it was not right to regard the former as outside the realm of the latter In general practice there was great need for the practice of psychiatry, especially in regard to child life, the training of adolescents, and the promotion of better industrial efficiency of adults

On the motion of Dr C HUBERT BOND, seconded by Prof ROBERTSON, a cordial vote of thanks to the President for his address was carried by acclamation

Encephalitis Lethargica

Wednesday morning was devoted to a consideration of this subject, when papers were read by Dr R L MACKENZIE WALLIS and Dr C FARRAN-RIDGE

Dr Mackenzie Wallis's paper dealt with the subject particularly from the standpoint of hepatic insufficiency, and was the account of a research which was partly experimental and partly clinical In the disease as transmitted to experimental animals there was, during the acute stages, a rapid increase in the lipase content of the blood—especially so when immunity had developed There was a striking association of mononuclear activity with the raised lipase content of the blood When an intensive inoculation of the vaccinia virus had been made into the skin of the rabbit there was a rapid rise in the cholesterol content of the blood—namely, from the normal 0 07 to 0 16 per cent in eight days Encephalitis lethargica produced a profound effect on the kidneys, liver, and spleen of the animals, the blood also showing evidence of hepatic inefficiency Among 40 human cases of the disease, 25 gave evidence of hepatic derangement, most of the acute cases also showed a raised lipase content and a higher cholesterol content than the normal

Dr Farran-Ridge's paper dealt with the clinical manifestations of the disease as he had met with them in practice He said it was not surprising to see, in cases of encephalitis lethargica, symptoms of various psychoses reproduced, seeing that the epidemic disease might attack any part of the brain Especially did it mimic the manifestations of dementia præcox

The Educational Adaptation of the Child

On Wednesday afternoon members accepted the invitation of Sir George Hume, the chairman of the London County Council, and his colleagues to meet at the County Hall to hear and discuss a paper by one of the medical officers, Dr F C Shrubsall, on Educational Adaptation of the Individual Child It consisted of a statement of the mechanisms and organisation set up by the L C C to get the best out of every child in the immense area covered by it, and to provide every provision and facility for backward and defective children The attention necessary to be given to the case of the parents was also stressed, while the children's physique was well looked after

The whole of Thursday morning was taken up with a debate on

Psycho-Analysis and its Development.

The opening paper was read by Dr W A. **POTTS** He said there was a mass of past experiences in the mind which could not readily be remembered, and processes went on in it which eluded the observation of the person concerned The modern psychologist said that the hidden mental processes were in the unconscious or the subconscious mind—i e, the inaccessible Freud, when dealing with neurotic and mental conditions, noted that some patients experienced relief and showed improvement when they were encouraged to talk frankly about their anxieties and difficulties, and he proceeded to work out a method of exploring the unconscious mind, which he named psycho-analysis The method showed to Freud the real motives of unusual and irregular conduct, and he became convinced that the unconscious mind consisted largely of unfortunate experiences in early life, of primitive instincts and desires, many of them sexual in character. Abnormal conduct was often a result of conflict between the conscious and the unconscious, because the demands of the moral code set up resulted in a repression of primitive desires Freud was convinced that not only a person's dreams, but the events of his whole mental life were due to definite causes, and were not the results of chance Sex was assigned the first place by this authority among these instincts, but with Freud sex has a wider significance than physical gratification, including such attributes as parental love Jung accepted Freud's dicta with modifications and attached a great deal of importance to the power of present ideas Dr Potts explained that psycho-analysis was a reductive process, working down gradually to the pleasure principle operative in early childhood Dr Potts said it was most desirable that those who undertook to practise psycho-analysis should themselves have been subjected to the process by an expert Neither those of the Freud nor the Jung school subjected to psycho-analysis all who came to them The method was most suitable for cases of so-called neuroses and psycho-neuroses In some cases of incipient mental disorder, analysis would precipitate an acute condition He insisted that the physical condition of patients should always be investigated and treated

Dr W **BROWN** (Oxford) expressed his general agreement with Dr Potts's paper He had himself been analysed, and he considered that the process as practised by the several schools was the same in quality But he contended that it would be difficult to find anybody who had been completely analysed He gave a brief sketch of Freud's most recent work on the libido theory

Dr A **WOHLGEMUTH** held the view that suggestion on the part of the analyst had much to do with the results claimed

Dr M. **HAMBLIN SMITH** supported the claims of psycho-analysis, and gave the history of the attitude of the profession on these matters Many senior doctors entertained quite a strong bias against psychology Freud's system dealt with the normal as well as with the manifestations of the disordered mind Many sound and permanent results had been brought about directly by the practice of psycho analysis, and much would be done in the prevention of mental troubles by the application of the knowledge now available

Dr. E **MAPOTHER** said that what really concerned psychologists were the results of treatment, and the question which required to be answered was whether results were obtainable by the special methods of psycho-analysis which could not be attained otherwise After 20 years he was still in doubt The essence of the matter was free association and the attempt to trace anomalies to deviations of the infantile sexuality by that method Yet truly free association was scarcely ever attainable In practice the intervention of the analyst was generally greater than in theory it should be He could not say he had seen a single case in which psycho-analysis produced results which could not be obtained by other means

Dr H **CRICHTON-MILLER** said Freudism did not explain the creative factor in the mental life, but he thought psychologists should be ranged on the side of the coming principle

Prof **ROBERTSON** said he regarded Freud as one of the greatest discoverers the world had ever seen and held that much psychological literature, though clearly inspired by that great man, failed to render to his genius its due acknowledgment

Dr M A **ARCHDALE** and Dr T A. **ROSS** also spoke and Dr **POTTS** replied

The Maudsley lecture, an abstract of which appeared in THE LANCET last week, was delivered by Prof **ROBERTSON**

THE ANNUAL DINNER

The annual dinner of the Association, held at the Hotel Victoria, on Thursday, was well attended the chair being taken by Colonel J R Lord, the newly elected President

After the loyal toast Dr J Greig Soutar proposed "The London County Council," and described eloquently the various and far-reaching functions of that body, showing that, whatever they were, they all combined in the great aim of securing health for the people In his allusion to the maintenance by the Council of mental institutions, he included an applauded eulogy of Sir Frederick Mott Sir George Hume, chairman L C C, having briefly responded, Dr Percy Smith proposed 'Prosperity to the Universities and Royal Colleges," enumerating the long roll of educational centres nowadays implied by the toast, and drawing attention to the gratifying fact that many of them paid special heed to the development of psychological studies The toast was replied to by Prof G M Robertson, President of the Royal College of Physicians of Edinburgh and Maudsley lecturer of the Association, and Dr William Brown, Wilde Reader in Psychology, University of Oxford Dr Robertson traced eloquently the development of modern psychology from its start with Pinel, and his great pupil Esquirol, through Alexander Morison and others down to Mott, showed how the development went hand in hand with rising humanitarianism, until to-day we had, he claimed, mental hospitals that were a credit to the country Dr Bedford Pierce proposed "The Royal Society of Medicine and the British Medical Association," for which bodies Sir StClair Thomson and Sir Dawson Williams replied respectively, the second adding an eloquent tribute to the practical value of Mott's work. The toast of "The Guests," proposed by Sir Frederick Willis, was answered by the Rt Hon Hugh MacMillan, the chairman of the Royal Commission on Lunacy and Mental Disorder, who said that the report of that Commission was imminent, and would give no pleasure to certain critics of lunacy administration, although all his audience that evening might not be pleased with everything in the document The Bishop of Southwark also replied, and the evening closed with the toast of prosperity to the Association, proposed by Sir Arthur Robinson, Permanent

Secretary, Ministry of Health, and replied to by the President.

On Friday morning Dr **Norwood East**, medical inspector of H M Prisons, read a paper entitled Some Forensic Aspects of Epilepsy, which was discussed, and in the afternoon the President invited members and their friends to the Horton Mental Hospital, Epsom, where Colonel S P **James** and Mr P G **Shute** demonstrated the infection of mosquitoes and other processes in the treatment of G P I by malaria. Dr W D **Nicol**, the M.O in charge of this department at the hospital, also gave a demonstration.

ROYAL SOCIETY OF MEDICINE

SECTION OF ANÆSTHETICS

The meeting of this Section, reported in The Lancet of last week, was continued on July 15th, the chair being occupied by Dr F H **McMechan**, a visitor from the United States.

Dr **Wesley Bourne** read a paper on

Alleviation of the Acidosis of Anæsthesia.

It had been established, he said, that a true acidosis occurred in the anæsthesia produced by chloroform, ethyl chloride, ether, and—to a less extent—in that produced by ethylene and acetylene. The measure of a true acidosis was the lowering of the alkali reserve of the blood. Sodium and potassium were much increased in the urine after ether anæsthesia. The experimental observations indicated that phosphoric acid left the muscles during anæsthesia, and appeared in the liver until the resumption of the kidney function after the recovery of the animal, when it was redistributed and partially excreted. The ability of the liver to store this phosphoric acid seemed to depend on the degree of depression of the kidney function, and to be according to the depth of the narcosis. It had been suggested that the low alkali reserve and increased acidity of the blood in ether anæsthesia were due to the discharge of phosphoric acid from the muscles. The work on the subject done by the author and his colleagues included observations on human patients who were operated upon at the Western Hospital, Montreal. Patients who were given a phosphate solution had less nausea than control patients. It was best given per rectum immediately after operation, for when given by the mouth there was the risk that the patient might vomit the solution. As a result of giving phosphates, sleep was shortened.

Dr **Mary E Botsford** (California University) read a paper dealing with

Anæsthesia in Urological Surgery.

She said that it was well known that ether and chloroform inhibit kidney function. Cushing had regarded this as due to the reduced blood pressure and impaired aeration of the blood. In most cases of urological surgery requiring a general anæsthetic nitrous oxide was the best form, as it did not alter the blood pressure, except to cause a rise during secondary saturation when the oxygen percentage was reduced. Cystoscopies in adults were usually done under some form of local anæsthesia, and if a preliminary injection of morphine was found not to interfere with kidney function it would seem to be a valuable auxiliary, especially in getting muscular relaxation under gas anæsthesia. She gave a review of 76 cystoscopies on female patients which were done at the Children's Hospital, San Francisco, the ages ranging from 5 months to 72 years. Sixty-three patients were given nitrous oxide and oxygen, ten having varying amounts of ether in addition, and five straight ether with gas induction, and five were operated on under local anæsthesia. There was a noticeable retardation in the voluntary micturition in cases in which ether was used, a slight delay when atropine was given, and none when morphine alone had been administered.

Dr S R **Wilson** (Manchester) said that many years ago he gave up using morphia in cases of deep sections when nitrous oxide was employed.—Dr T P **Kirkpatrick** (Dublin) said that he had long noted that with ether anæsthesia the kidney function was inhibited. For general surgical operations patients did better with ether and recovered better if they did not have morphia.—Dr H. E **Featherstone** (Birmingham) agreed that early, quick, and uneventful recoveries from anæsthesia were more likely to take place in the absence of morphia, especially in cases in which the renal function was impaired. For prostatectomies he used nitrous oxide.—Dr **Samuel Johnston** (Toronto) considered that, clinically, morphine was a detriment to the average patient. There was the probability of giving too much of the anæsthetic of any kind, and when morphine had been given the patient did not react in the same way, nor did he recover so quickly. Some patients did not take ether at all well. For prostatectomy he used nitrous oxide and oxygen, with a small quantity of ether added.—Dr F E **Shipway** said that in the position of election for operation on the urino-genital system the respiratory movements should be as small as possible; he found that spinal anæsthesia gave the best results, with a small degree of general anæsthesia to keep the patient unconscious. Morphia and hyoscine were most excellent drugs to give beforehand—i e, 1/6 gr morphia, 1/100 gr hyoscine.—Dr. Z **Mennell** spoke of the difficulty of controlling the dosage when teaching students. He had never used morphia but he used atropine. Experience had enabled anæsthetists to disregard the statement, which had been copied from one text-book to another, that a small dose of atropine, without morphia, inhibited the kidneys from secreting urine.

Mr T P **Dunhill** (London) read a paper on

Anæsthesia in Goitre Operations.

He said that anæsthesia for patients suffering from the different forms of goitre required considerable versatility on the part of the anæsthetist. No one method was suitable for all forms. Always the patient's welfare must be the first consideration. For adenomata, single or multiple, unless of great size, general anæsthesia was as safe as for any operation in surgery; his own practice was to use endotracheal gas and oxygen. For removal of a large adenoma causing pressure he preferred local anæsthesia, but when it was deep in the thorax with moderate pressure there, he used endotracheal gas and oxygen, with a little ether. Nowadays chloroform was rarely given, but there were occasions on which it was the safest anæsthetic. For colloid goitre general anæsthesia was desirable. In exophthalmic goitre the operative death-rate 25 years ago was very high, and some of the deaths were due to the methods of anæsthesia then in vogue. The mortality was contributed to by operations on unsuitable cases, and at the wrong time, sometimes by the wrong surgeon. Patients ill with Graves's disease had but a small margin of safety, and usually chloroform was a dangerous drug to give. Ether, given skilfully, was safe for these cases. If the patient were a suitable subject gas-oxygen could safely be used or gas oxygen-ether, always provided that the right time was chosen and the surgeon did not attempt too much at one operation. It was not wise to attempt the operation at a time when the patient was in a state of great mental unrest. Local anæsthesia was best in the presence of auricular fibrillation. Chloroform gave the most comfortable anæsthesia for the surgeon, as breathing was quiet and bleeding was reduced to a minimum. But it was no more than reasonably safe, and this was not, in his view, sufficient. Ether, on the other hand, was very efficient and safe by the open method, the only objection being that the mask was a good deal in the surgeon's way. He thought it was wise to give an injection of morphine with atropine an hour before inducing general anæsthesia. Rectal anæsthesia had a field of usefulness, but a limited one.

cases of the disease, 25 gave evidence of hepatic derangement, most of the acute cases also showed a raised lipase content and a higher cholesterol content than the normal

Dr Farran-Ridge's paper dealt with the clinical manifestations of the disease as he had met with them in practice He said it was not surprising to see, in cases of encephalitis lethargica, symptoms of various psychoses reproduced, seeing that the epidemic disease might attack any part of the brain Especially did it mimic the manifestations of dementia præcox.

The Educational Adaptation of the Child

On Wednesday afternoon members accepted the invitation of Sir George Hume, the chairman of the London County Council, and his colleagues to meet at the County Hall to hear and discuss a paper by one of the medical officers, Dr F C Shrubsall, on Educational Adaptation of the Individual Child It consisted of a statement of the mechanisms and organisation set up by the L C C to get the best out of every child in the immense area covered by it, and to provide every provision and facility for backward and defective children The attention necessary to be given to the case of the parents was also stressed, while the children's physique was well looked after

The whole of Thursday morning was taken up with a debate on

Psycho-Analysis and its Development

The opening paper was read by Dr W A. Potts He said there was a mass of past experiences in the mind which could not readily be remembered, and processes went on in it which eluded the observation of the person concerned The modern psychologist said that the hidden mental processes were in the unconscious or the subconscious mind—i e, the inaccessible Freud, when dealing with neurotic and mental conditions, noted that some patients experienced relief and showed improvement when they were encouraged to talk frankly about their anxieties and difficulties, and he proceeded to work out a method of exploring the unconscious mind, which he named psycho-analysis The method showed to Freud the real motives of unusual and irregular conduct, and he became convinced that the unconscious mind consisted largely of unfortunate experiences in early life, of primitive instincts and desires, many of them sexual in character. Abnormal conduct was often a result of conflict between the conscious and the unconscious, because the demands of the moral code set up resulted in a repression of primitive desires Freud was convinced that not only a person's dreams, but the events of his whole mental life were due to definite causes, and were not the results of chance Sex was assigned the first place by this authority among these instincts, but with Freud sex has a wider significance than physical gratification, including such attributes as parental love Jung accepted Freud's dicta with modifications and attached a great deal of importance to the power of present ideas Dr. Potts explained that psycho-analysis was a reductive process, working down gradually to the pleasure principle operative in early childhood Dr Potts said it was most desirable that those who undertook to practise psycho-analysis should themselves have been subjected to the process by an expert Neither those of the Freud nor the Jung school subjected to psycho-analysis all who came to them The method was most suitable for cases of so-called neuroses and psycho-neuroses In some cases of incipient mental disorder, analysis would precipitate an acute condition He insisted that the physical condition of patients should always be investigated and treated

Dr W Brown (Oxford) expressed his general agreement with Dr Potts's paper He had himself been analysed, and he considered that the process as practised by the several schools was the same in quality But he contended that it would be difficult to find anybody who had been completely analysed He gave a brief sketch of Freud's most recent work on the libido theory

Dr A Wohlgemuth held the view that suggestion on the part of the analyst had much to do with the results claimed

Dr M. Hamblin Smith supported the claims of psycho-analysis, and gave the history of the attitude of the profession on these matters Many senior doctors entertained quite a strong bias against psychology Freud's system dealt with the normal as well as with the manifestations of the disordered mind Many sound and permanent results had been brought about directly by the practice of psycho-analysis, and much would be done in the prevention of mental troubles by the application of the knowledge now available

Dr. E Mapother said that what really concerned psychologists were the results of treatment, and the question which required to be answered was whether results were obtainable by the special methods of psycho-analysis which could not be attained otherwise After 20 years he was still in doubt The essence of the matter was free association and the attempt to trace anomalies to deviations of the infantile sexuality by that method Yet truly free association was scarcely ever attainable In practice the intervention of the analyst was generally greater than in theory it should be He could not say he had seen a single case in which psycho-analysis produced results which could not be obtained by other means

Dr H Crichton-Miller said Freudism did not explain the creative factor in the mental life but he thought psychologists should be ranged on the side of the coming principle

Prof Robertson said he regarded Freud as one of the greatest discoverers the world had ever seen and held that much psychological literature, though clearly inspired by that great man, failed to render to his genius its due acknowledgment

Dr M A. Archdale and Dr T A. Ross also spoke and Dr Potts replied

The Maudsley lecture, an abstract of which appeared in The Lancet last week, was delivered by Prof Robertson

THE ANNUAL DINNER

The annual dinner of the Association, held at the Hotel Victoria, on Thursday, was well attended the chair being taken by Colonel J R Lord, the newly elected President

After the loyal toast Dr J Greig Soutar proposed "The London County Council," and described eloquently the various and far-reaching functions of that body, showing that, whatever they were, they all combined in the great aim of securing health for the people In his allusion to the maintenance by the Council of mental institutions, he included an applauded eulogy of Sir Frederick Mott. Sir George Hume, chairman L C C, having briefly responded, Dr Percy Smith proposed 'Prosperity to the Universities and Royal Colleges,'' enumerating the long roll of educational centres nowadays implied by the toast, and drawing attention to the gratifying fact that many of them paid special heed to the development of psychological studies The toast was replied to by Prof G M Robertson, President of the Royal College of Physicians of Edinburgh and Maudsley lecturer of the Association, and Dr William Brown, Wilde Reader in Psychology, University of Oxford Dr Robertson traced eloquently the development of modern psychology from its start with Pinel, and his great pupil Esquirol, through Alexander Morison and others down to Mott, showed how the development went hand in hand with rising humanitarianism, until to-day we had, he claimed, mental hospitals that were a credit to the country Dr Bedford Pierce proposed "The Royal Society of Medicine and the British Medical Association," for which bodies Sir StClair Thomson and Sir Dawson Williams replied respectively, the second adding an eloquent tribute to the practical value of Mott's work. The toast of "The Guests," proposed by Sir Frederick Willis, was answered by the Rt. Hon Hugh MacMillan, the chairman of the Royal Commission on Lunacy and Mental Disorder, who said that the report of that Commission was imminent, and would give no pleasure to certain critics of lunacy administration, although all his audience that evening might not be pleased with everything in the document The Bishop of Southwark also replied, and the evening closed with the toast of prosperity to the Association, proposed by Sir Arthur Robinson, Permanent

THE GOLD TREATMENT OF TUBERCULOSIS.

SECOND REPORT BY THE MEDICAL RESEARCH COUNCIL.*

THIS second report deals almost entirely with clinical experience It does not attempt a review of the laboratory evidence on what is at the root of the whole inquiry—namely, the action of sanocrysin in arresting the spread of tuberculosis implanted experimentally into animals

The results are given briefly for each separate clinical centre at which the observations were made For convenience of reference the after-history of individual patients who were given by serial numbers in the first report [1] is here described under the same serial numbers No new reference numbers are given for fresh cases described in the present report

CLINICAL OBSERVATIONS

St Bartholomew's Hospital (Prof F R Fraser and Dr C F Harris) —Eleven cases of pulmonary tuberculosis have been treated or are undergoing the treatment Two cases of abdominal tuberculosis were treated and one case of lymphatic leukæmia was studied as a control The cases of pulmonary tuberculosis were all of a more chronic type than those in which the best results are reported from Denmark One death occurred after a few doses of sanocrysin, which were given only because a fatal issue seemed inevitable Severe reactions were experienced with large doses, but later it was found that with smaller initial doses at longer intervals the treatment was well tolerated No striking results have been obtained, but the unexpected improvement in certain cases suggest that sanocrysin may be of service in the early cases of pulmonary tuberculosis or in the fresh spread in more chronic cases The general impression has been formed that the method of treatment deserves further investigation

London Hospital (Prof Arthur Ellis) —Since the publication of the last report, only one new case of pulmonary tuberculosis has been treated This patient, whose condition was desperate at the time treatment was commenced, improved to a very remarkable extent The patient had been under observation in hospital for nearly a year and was going very rapidly down hill with hectic temperature, repeated hæmoptysis, and severe pleural pain At his own insistence a course of sanocrysin injections was given No severe reactions occurred and improvement was rapid and continuous He became afebrile, pain, cough, and hæmoptysis disappeared, his sputum diminished from four ounces daily to slight morning sputum only. He was discharged to a sanatorium and when last heard from some weeks ago was doing well

The after-histories of the cases detailed in the first report have been as follows —

CASE 1 —Has been in a sanatorium and is now back at home His general condition is much the same as on discharge, but the breath is now definitely fœtid and the moist sounds at the right base are much more numerous The cough and sputum have both increased There are no tubercle bacilli in the sputum

CASE 2 —Gradually failed, and died in his home in January, 1926 No post-mortem examination was obtained

CASE 3 —Downward progress continued He died early in June, 1925, five months after the last injection of sanocrysin Specimens of various viscera were obtained post mortem and sent to an analytical chemist for analysis for gold The kidney, liver, and colon contained no trace, but in a portion of the lower lobe of the left lung a definite trace of gold was detected, estimated roughly at 3 mg per 100 g of lung tissue The total gold salt used in this case was only 1 5 g

CASE 4 —Recovery from the exfoliative dermatitis eventually occurred Coincident with this, the exacerbation of the tuberculous process gradually subsided and the patient again became afebrile She is now able to be up and about, but the physical signs are more extensive and her general condition worse than before treatment was given It is some three months since she was last seen

CASE 7 (*Control*) —This patient was a case of Hodgkin's disease treated with sanocrysin as a control The patient died in January, 1926 No post-mortem examination was obtained

Prof Ellis considers that the value of the serum is doubtful He suggests that his bad results may have been due in part to serum All the cases that did badly had very severe serum sickness It was in the period of resulting prostration that exacerbation of the tuberculous process was particularly manifest

St Mary's Hospital (Prof F Langmead) —No new cases are reported With regard to the original cases—

CASE 9 —Convalescence was satisfactory The patient went to Ventnor for six months, where tubercle bacilli were present in the sputum at first Her health is now fairly good The sputum has been free from tubercle bacilli for some time, and radiograms show that there has been no spread of disease

CASE 10 —Satisfactory convalescence At work as a carman since August, 1925, and no tubercle bacilli in sputum A similar recovery had occurred previously, and before sanocrysin treatment, when the patient had been rested in a sanatorium

St Thomas's Hospital (Prof H MacLean and Dr G T Hebert) —Ten new cases have been treated with considerable, though it may prove to be only temporary, improvement Out of the five original cases, which were chosen as being of a mild type, two have relapsed decisively The after-history of all the original cases is as follows —

CASE 11 —Has kept well, no evidence of active tuberculosis, but is under treatment for pityriasis rosea

CASE 12 —Went to a sanatorium for three months, until June, 1925, tubercle bacilli in sputum at that time He was in good health three months later but not at work; then married and moved out of London, leaving no address

CASE 13 —Went to a sanatorium for three months, until July 8th, 1925, apyrexial, but tubercle bacilli in sputum at that time He worked in the country as a grocer's assistant till December, 1925, when symptoms of active disease reappeared In January, 1926, there was infiltration of both lungs, and in March, 1926, he was admitted to the Lambeth Hospital

CASE 14 —Went to a sanatorium for three months, until July, 1925 No further definite symptoms of tuberculosis The patient is now at work.

CASE 15 —Lived in the country during the summer of 1925 In September, 1925, was not looking well, but no tubercle bacilli were present in the sputum Patient had pleurisy of the left side in December, 1925, followed by symptoms of active pulmonary tuberculosis Admitted to a sanatorium in February, 1926

University College Hospital (Prof T R Elliott) —Twelve cases of tuberculosis have been treated, including the four described in the first report Three were of glandular or osseous infection and gave no special information There were seven patients with pulmonary tuberculosis

CASE 16 —In the first report it was concluded that the girl had been made worse by the treatment After discharge from hospital she remained at home in a poor environment But she is now well and back at work There are no tubercle bacilli in the sputum, and the disease appears to be completely arrested, an unexpectedly good recovery in view of her originally poor physique

CASE 18 —The patient returned to work soon after discharge from hospital and remains well

CASE 19 —The boy went to work with very long hours in a factory last autumn His health broke down and he was readmitted to hospital There appeared to be more extensive fibrosis in the lungs, but there were no tubercle bacilli in the sputum He recovered quickly and was then sent to the country

One new case of pulmonary tuberculosis developed very serious jaundice, with clay-coloured stools, after two doses of 0 5 g and 1 g respectively Recovery from the hepatitis was slow and treatment was, therefore, discontinued Such toxic jaundice appears to be rare in Danish experience A similar but fatal

---

[*] The first report appeared in THE LANCET of April 18th, 1925, p 833

EDINBURGH MEDICO-CHIRURGICAL SOCIETY

AT a meeting of this Society held on July 7th Prof W. **RUSSELL**, the President, took the chair, and Prof R. **STOCKMAN** opened a discussion on

Rheumatoid Arthritis

This disease, he said, was sufficiently familiar to need no formal definition A bewildering number of names had been given to it, but though the name rheumatoid arthritis had been criticised, at least it gave some clue to the nature of the disease. It was reasonably certain that under this one term were included the results of the activities of a number of different but closely allied microbes, and until these had been identified it was best to be content with a general clinical designation There was little doubt that the cause of rheumatoid arthritis was an infection of low virulence and great tenacity Occasionally organisms had been found in the joints, but as a rule attempts to find them either in joints or blood had proved fruitless That there were different forms was shown by the varying clinical courses of the disease—one form starting in the fingers and spreading to other joints, whilst another began an acute course in a larger joint Sometimes glands and spleen showed enlargement, and in fact all forms presented the aspect of a low chronic septicæmia The disease ran a more or less lengthy course, relieved by occasional exacerbations, finally coming to an end but leaving permanent damage in its wake The main attack was on the white fibrous tissue of the locomotor system It caused a great deal of general stiffness, aching, and pain quite apart from the joints which was due to perineuritis in the inflamed connective tissue In certain cases, however, the bones seem to be attacked more than in others The remaining well-known symptoms—muscular atrophy, deformity of bone, and contractures—were really sequelæ of the original disease The infection was in all probability acquired through the alimentary and other open tracts and through the skin, in the majority of cases a septic focus could not be traced, but often arthritis followed tonsillitis or some other septic condition, whilst connexion with a skin disease, such as psoriasis, was often proved

Treatment, said Prof Stockman, resolved itself into combating the infection, removing fibrositis, and correcting contractures No known drug was specific, and until recently treatment had been carried out on general tonic lines with liniments, baths, and massage, which lessened the stiffness and pain, but did not check the disease Vaccines had been extensively used, but were not of proved specific value The one treatment of real value was that known as protein shock or non-specific protein therapy, the benefit of which appeared to depend on the sharp feverish reaction following injection, which seemed to raise the defensive powers of the body Personally he used the typhoid bacillus as being most satisfactory; beginning with a dose of 100 millions intravenously, the treatment was repeated every six days until six injections had been given, the dose being gradually raised to 200 or 250 millions The reaction began within an hour with a rigor and a rise of temperature to 103°–105° F, followed by uncomfortable heat, then profuse perspiration and a return to normal, the whole reaction lasting from six to twelve hours There was also a marked focal reaction with pain in the affected joints and fibrositic areas Occasionally there was herpes at the mouth and slight albuminuria A febrile reaction, if any, usually settled after the third or fourth injection The whole proceeding, while disagreeable at the time, was perfectly safe and was followed by a feeling of increased well-being

Dr G L **KERR PRINGLE** (Harrogate) said that, although fully alive to the association of infective foci with arthritis, he thought that such factors as soil and diathesis were too often forgotten Not everyone who had a septic focus suffered from arthritis, nor did an injury to a joint always produce osteo-arthritis The commencement and cessation of menstruation were associated with the disease Pregnancy had long been considered a cause, and many arthritics who became pregnant claimed that their arthritis improved during pregnancy, only to return with increased severity after parturition. It had been found that glucose tolerance is lowered in most cases of proliferative arthritis, and that when a septic focus is removed the tolerance becomes more normal, and also that these cases improve on a low carbohydrate diet This last was an important point in treatment, and the patients should be fed on red meats, green vegetables, and fruit Basal metabolism did not appear to be altered There was evidence that achlorhydria allows streptococci to multiply more readily in the bowel, and it might therefore be an accessory factor in the disease

Infective foci, continued Dr Pringle, should be removed If achlorhydria was present hydrochloric acid should be given In young women with abnormal menstrual history thyroid extract might be administered in small doses along with the French tincture of iodine in increasing doses for long periods, the patient being on a low carbohydrate diet. Where there was intestinal stasis lavage was often helpful A daily record of temperature and a weekly record of weight ought to be kept, the patient should be as much as possible in the fresh air, and local movement should be encouraged Radiant heat, hot air baths and local steam baths, paraffin-wax baths, or hot douching produced local hyperæmia, which should be followed by massage to the wasted muscles It was often advisable to place the limb after massage in a trough splint with a little extension Where there was effusion, repeated aspiration with a large hypodermic needle relieved pain and prevented distension of the capsule and stretching of ligaments Hot mineral water baths followed by hot packs produced sweating, slightly raised the temperature, dilated the capillaries, relaxed the muscles, and often induced sleep In the sequelæ of the disease the memory of pains experienced was difficult to eradicate, encouragement was very necessary, and each case and each joint must be considered individually Semi-flexed knee-joints should be straightened, and if massage and hot baking would not bring about the desired effect, tenotomy, synovectomy, or other surgical measures must be considered Nothing surgical should be attempted where active disease was present A glucose-tolerance test was a good index, if the tolerance was lower than normal operation should not be attempted The use of vaccines in arthritis Dr Pringle considered uncertain Wonderful results were sometimes obtained, but sometimes they were very disappointing His own experience of intravenous injection of T A B was limited Strasser, of Vienna, pointed out that the whole object of intensive treatment, whether by protein or sweating baths, was to substitute for the chronic infective or metabolic process a slightly more acute and favourable phase

Dr W T **RITCHIE** said that fibrositis was a very common condition from which everybody suffered at times Rheumatoid arthritis, in proportion, was much less common, the connexion between the two conditions was obscure The path of infection, he thought, was often by the pelvic organs, and the prostatic secretion especially should be investigated Peptone shock was disappointing—Dr **DAVID HUSKIE** believed that calcium metabolism was involved He saw no reason why a full diet should not be given, including red meat, a food usually excluded from the diet—Dr J M **BOWIE** recommended prolonged treatment by iodine In his own experience he had found colon lavage and thyroid of little use—Dr **ALEXANDER GOODALL** thought that if improvement was to occur it would be seen very early in treatment—Dr **JOHN EASON** took the opposite view, stating that frequently improvement was only seen after treatment had been persevered with for some time He suggested that exhaustion, especially that incurred in sick nursing, might be a cause sputum, and he was later admitted to hospital A second course of 2 25 g. was given in November The patient has regained weight and is now capable of light graded work

Two cases of extensive and obviously grave pulmonary tuberculosis, aged 14 and 15 respectively, died two or three months after sanocrysin treatment, which did not appear to have influenced the illness in any markedly unfavourable way One of Dr Watson's cases developed exfoliative dermatitis, presumably from metallic poisoning, after 6 25 g Dr Tattersall's patients had all given fairly good results Prof Cummins, apart from the two expected deaths in toxic cases, had four favourable results 'There was dramatic and rapid improvement in each of them after a short course of sanocrysin The tubercle bacilli disappeared from the sputum and the weight after treatment got back to or outstripped the highest known weight This favourable change, though not persistent, was maintained for several months after the course of treatment " Prof Cummins concludes that sanocrysin, *judiciously used*, is a valuable means for raising the less advanced type of "hospital" case up to a "sanatorium" level, and perhaps for the actual cure of some cases of a more favourable clinical type

Royal Infirmary, Edinburgh (Prof Sir Robert Philip and Prof D Murray Lyon) —Twenty-two cases of tuberculosis have been treated by means of sanocrysin Undoubted cases of tuberculosis were selected who had already benefited by institutional treatment All cases were afebrile , 17 were examples of pulmonary tuberculosis with tubercle bacilli in the sputum The lesions ranged from slight localised nodules to extensive cavity formation or marked fibrosis The series examined also included two cases of tuberculosis of the glands, one of renal tuberculosis, and two of lupus Other therapeutic measures were discontinued during the trial of sanocrysin Eight patients had previously had more or less prolonged treatment with tuberculin by percutaneous method The patients received from two to ten injections of sanocrysin, the most usual number being six The quantities of sanocrysin administered have varied from 1 5 g to 10 g In all cases the initial dose was 0 5 g and subsequent injections have usually been 1 g Anti-tuberculous serum was given in ten of the cases and in small quantities only (doses of 20–40 c cm), but its use was not encouraging

Considering first the five cases of non-pulmonary tuberculosis, the renal case was unimproved One case of tuberculosis of the glands was improved, the glands becoming more discrete and distinctly smaller , in the other case the treatment had to be discontinued owing to severe local inflammation The two cases of lupus after each injection of sanocrysin exhibited a considerable congestion in and around the affected area Later, the scales practically disappeared and the centres of the lesions became pale as if cicatrisation had increased The margins, however, remained red and raised in nodules When last seen two months after the beginning of treatment, both cases had relapsed, the lupus areas appearing active and heavily encrusted On the 17 cases of pulmonary tuberculosis the treatment had to be discontinued in seven cases, in three because of the severity of the reactions, and in four others on account of the discomfort and distress experienced by the patients Of the ten cases that underwent the full course, seven ultimately showed decided improvement when examined from five to ten months after the termination of treatment One, who was apparently doing well, subsequently had several attacks of hæmoptysis and died

In studying the effects of the sanocrysin treatment of tuberculosis, the Edinburgh workers state that the principal questions to be answered are (1) Whether sanocrysin possesses any specific action against tuberculous tissues (2) Whether its employment has benefited the patients subjected to it (3) Whether the present method of administration is the most suitable

(1) It is observed that the reactions which follow the administration of sanocrysin might arise in different ways (*a*) The drug, unchanged or chemically altered, may act on the tissues directly , (*b*) as a result of a selective action of the gold on tuberculous tissues and organisms, specific toxins might be liberated The resultant reactions might be termed "gold" effects and "tuberculin" effects respectively The evidence suggests that the focal reactions, the increase of sputum, the papulo-erythematous skin eruptions, the pyrexia, and the gastric symptoms, especially vomiting, which the authors noted accompanied the earlier doses of sanocrysin in a course may be regarded as "tuberculin" effects On the other hand, the albuminuria which occurs late in the course and in association with desquamative skin lesions and many of the alimentary symptoms (stomatitis and diarrhœa), appears to be a "gold" effect due to irritation accompanying the accumulation of the metal in the renal cells The gold salt, therefore, appears to produce two types of effect in the body, the "specific" action on tuberculous areas which is immediate, and the cumulative poisoning seen in the excretory organs The authors add that two questions still remain unsolved—namely, the cause of the early decline of the "tuberculin" reactions, and the reason for the failure of later doses of sanocrysin to evoke albuminuria

(2) The immediate effects on the health of the patients have varied greatly. The majority have experienced more or less discomfort and some have suffered severely The gastric symptoms and tendency to severe dermatitis combined with the almost universal and often considerable loss of weight make the treatment a matter not lightly to be undertaken in its present form To avoid the risk of producing severe reactions it would appear desirable to aim at a smaller concentration of sanocrysin in the system, either by reducing the size of the dose, or by lengthening the interval between the doses, or by combining these suggestions In several cases a striking reduction has occurred in the number of tubercle bacilli in the sputum Negative films became more frequent in some patients, but in no instance did the bacilli permanently disappear from the sputum, and, as yet, no patient can be said to have had his disease arrested Apart from the loss of weight produced no patient has been harmed by the course of treatment The one death that occurred is not ascribed to the treatment, as it took place after the full course had been completed with apparent benefit at first resulting Some degree of clinical improvement has been observed in the greater proportion of patients who underwent the full course No dramatic change has occurred, but there has been in several instances a steady advance at a greater rate than might otherwise have been expected This improvement has not in all cases been maintained , some of those who did best during the course have since retrogressed, whilst others who did not seem immediately benefited have since greatly improved

(3) The authors conclude their report by some observations on the intramuscular administration of sanocrysin They formed the impression that this method presented some advantages—e g , less albuminuria and less rapid loss of weight, and that further experience was likely to reveal ways of still further excluding the discomfort of the procedure

Edinburgh Public Health Department (Dr J Guy) —Dr Guy has treated ten cases of pulmonary tuberculosis with sanocrysin The first six were given small and gradually increasing doses, and the last four received large doses, but not the full doses recommended by Prof Mollgaard In the first six of the series sanocrysin did not appear to have any appreciable effect for good or ill In the last four there appeared to be some slight improvement and lessening of the sputum This, however, is a regular feature of sanatorium régime Dr Guy considers that so far there does not appear to be any marked curative effect from sanocrysin He infers that the drug has case was described (Case 8 from St Mary's Hospital) in the first report Another patient with extensive caseous lesions in the left lung and only two months' history improved with great rapidity under treatment The fever ceased after two severe rash reactions, and ultimately the tubercle bacilli disappeared from the sputum Three months later a relapse occurred at a sanatorium during December The patient was readmitted to hospital with further spread in the lungs and tuberculous laryngitis A second course of sanocrysin failed to evoke a rash or high pyrexia The patient is still under treatment and appears to be improving only slightly One control case was tried, a woman, aged 25, with prolonged fever ranging daily from 99°–101° F and high eosinophilia (60 per cent), of unknown cause Three injections of 0 5 g each were given, no rash resulted nor any obvious temperature change The best results in tuberculous infections seem to have been obtained when the patient reacted strongly with fever and a rash Prof Elliott concludes that the treatment is definitely beneficial in early cases without extensive fibrosis, though it is rarely capable of effecting a rapid and complete arrest of tuberculous disease[2]

Guy's Hospital (Dr G Marshall) —Sanocrysin had not been used at this centre at the time of the first report During the last year eight cases of pulmonary tuberculosis have received treatment All these cases had extensive pulmonary disease and were of some length of duration Three cases showed apparent arrest, two cases improved, while the remaining three cases were unimproved In no instance was the disease extended by the treatment The improvement resulted after other modes of treatment such as rest and sanatorium were tried and failed Severe reactions with exanthem and albuminuria have been observed although small doses were employed One case of infective endocarditis, in which the spleen diminished in size and became impalpable, ceased treatment after 11 doses In addition, provocative diagnostic doses of sanocrysin have been given to three patients It is considered that sanocrysin has a beneficial effect when used with discretion and is likely to become a part of the routine treatment in selected cases of pulmonary tuberculosis

Brompton Hospital for Consumption and Diseases of the Chest (Dr L S T Burrell) —At this centre, also, observations had not been commenced at the date of the first report a year ago Twenty cases were selected for treatment as being patients who were getting worse or had failed to improve after other methods had been tried These form the large group of fibrotic or fibro-caseous cases, slowly progressive with frequent relapses and periods of improvement. Time will show whether or not the progress of disease can be checked in these cases by sanocrysin, and in this report it is only the immediate result that can be shown

In the first five cases in the series artificial pneumothorax had been induced with very good initial results In each case, however, there had been a relapse with return of sputum containing tubercle bacilli After a short period of treatment with sanocrysin one patient was slightly worse The other four improved, two of them losing the tubercle bacilli from the sputum The next eight cases (Nos 6–13) were of the fibro-caseous type In all, sputum containing tubercle bacilli was present After sanocrysin the number of tubercle bacilli in the sputum was reduced in every case, and in four they disappeared altogether, though they reappeared in two of these In another case (No 14) there was long-standing disease complicated by a chronic pleural effusion, which was converted into a hydropneumothorax Sanocrysin was given in order to control the disease in the other lung, but it had no apparent result, either good or bad No 15 was one of spontaneous pneumothorax, and again the sanocrysin was given in an attempt to improve the condition of the other lung The patient, however, became worse In the final five cases there was bilateral disease; the worse lung was treated by artificial pneumothorax, and sanocrysin was also given in the hope that it would have a good effect on the disease in the other lung Of these five cases the tubercle bacilli disappeared from the sputum in four (though in one they reappeared) and in the other they were much reduced in number. This result, however was probably due largely to the pneumothorax, and in one case (No 16) the tubercle bacilli disappeared after the pneumothorax had been induced but before the sanocrysin was started

The sanocrysin was given intravenously and the initial dose was 0 25 g This was followed a few days or a week later by 0 5 g, then 0 75 g, and finally 1 g This was the maximum dose given and was repeated weekly It was noticed that in many cases no reaction occurred until a dose of 0 75 g or 1 g was reached, and that the reaction got less on subsequent injections. In two cases small doses (0 1 g) were given daily for a week and then this course repeated after a week's interval This method had no effect in one case, and in the other it produced slight albuminuria, pains in the limbs and disappearance of tubercle bacilli from the sputum This method of giving frequent small doses might possibly be of advantage in acute cases

Taking the 20 cases as a whole, two became worse and 18 improved or remained unchanged In ten cases tubercle bacilli disappeared from the sputum, although in three of these they reappeared In five cases there was no reaction after the injections. Rigors occurred in nine cases, and a slight evening rise of temperature with shivering and malaise was also noted after some of the injections A long febrile reaction was seen in only two cases (Nos 1 and 13) An erythematous rash occurred in four cases Vomiting a few hours after the injection in nine cases Pain in the limbs was present in four cases Albuminuria was noted in three cases only and was very slight and transient One patient complained of a metallic taste in the mouth and small blisters appeared on the mucous membrane of the mouth

Warwickshire King Edward VII Memorial Sanatorium, Warwick (Dr F R G Heaf) —Twenty patients suffering from pulmonary tuberculosis (all stages, with tubercle bacilli present in the sputum) have been treated with sanocrysin, and six are still under treatment Of the 20 patients, two left before the course of treatment was completed, and in two cases treatment was stopped owing to the advanced state of the disease Of the 16 remaining cases, ten were regarded as quiescent at the termination of treatment, tubercle bacilli being absent from the sputum and X ray evidence and physical examination indicating marked improvement; one was improved, but tubercle bacilli were still present, two showed no alteration, and three were worse In two cases sanocrysin was given in conjunction with artificial pneumothorax treatment, and the progress of a recent lesion on the side opposite to the collapsed lung was arrested Dr Heaf hopes to be able to report on the after-history of the patients at the expiration of one year He concludes that sanocrysin arrests the early progressive lesion but has little or no effect upon lesions associated with fibrosis

Wales (Prof S Lyle Cummins) —Sanocrysin has been tried at three centres in Wales under the general supervision of Prof S L Cummins In all, 16 cases have been fully treated as follows Glan Ely Hospital, Cardiff Prof Cummins, six cases, Dr A. Brownlee, Cymla Hospital, Neath one case Dr N Tattersall, South Wales Sanatorium, Talgarth six cases Dr H E Watson, three cases

Details of the individual cases and their results are given elsewhere[3] by Prof Cummins and Dr Tattersall In regard to the after-history of the cases quoted in the original report a year ago—

CASE 21 —The patient was sent to a sanatorium Sputum was negative for a time, but in July became positive Two more doses, 0 5 g and 1 g, were given. Tubercle bacilli disappeared from the sputum and the patient regained weight. He now has persistent albuminuria.

CASE 22 —The patient returned to work at a colliery in April, 1925. In July tubercle bacilli appeared again in the

Reviews and Notices of Books.

HEART DISEASE

Les Angines de Poitrine By Dr LOUIS GALLAVARDIN, Médicin des Hôpitaux de Lyon Paris. Masson et Cie Pp 181 Fr 25

THE main part of this book consists of a review of angina pectoris, based on the author's own personal observations on 791 cases, and presented at the eighteenth French Congress of Medicine in 1925 A final section is devoted to the discussion of points of interest arising out of the records of a series of 20 cases which came to autopsy The difficulties of this subject are fairly faced by Dr Gallavardin, who has chosen to regard it as one might regard the broad subject of dyspnœa. A cry of distress is heard, but the underlying disease is multiform. This was also James Mackenzie's attitude, though many authors have preferred not to include all pain of cardiac origin under the term angina pectoris, and it is not customary to do so in this country The author holds to his statement that there are grave and there are benign anginas Perhaps the book gains by this aspect, for it is based on his extensive observations of patients all of whom had pain

In the opening chapter the author refers to the uncertainty of quantitative diagnosis in a condition where the symptoms rather than the objective signs constitute the central feature of the picture He differentiates true angina from the other forms of cardiac pain and classifies his cases into three groups (1) organic, (2) doubtful, and (3) nervous In the organic cases some structural cardiac or aortic lesion was present This group includes 617 cases and is further subdivided into (*a*) those (486) cases in which pain was brought on by exertion, (*b*) those cases in which the attacks occurred only during rest or at night; and (*c*) those cases in which the association with other special symptoms such as dyspnœa suggested a different ætiological factor and appeared to justify classification in a separate group Into the second main group—i e the cases of doubtful significance—Dr Gallavardin places 174 cases in which the clinical picture was atypical. In 52 of these pain occurred on exertion, and in the remaining 72 only at rest or at night As to the nervous type, the author reviews the evidence for the existence of a benign type of angina; he is of opinion that such cases do undoubtedly exist, and that in them the condition is probably due to hyper-excitability rather than to hyper-excitation of the nervous system His 50 cases in this group comprise 30 men and 20 women —a very high male incidence which is probably attributable to the rigid standard which he has adopted in separating angina from other types of cardiac pain. The diagnosis of "angina névrosique" must be based chiefly on the history, since in some cases of true angina physical signs are absent. The special points to be noted are the multiplicity of manifestations or, as Dr Gallavardin aptly expresses it, the "exuberance of symptoms," and secondly the absence of any quantitative relation between pain and the amount of effort required to induce it.

In the section of the book devoted to pathogenic considerations the author inclines to the view that the majority of cases are attributable to spasm of the coronary arteries, and points out that in 12 out of 20 autopsies on cases of angina a coronary lesion was present. In 25 cases, on the other hand, where post-mortem examination revealed infarction of the heart, anginal symptoms occurred in three only Spasm of the coronary arteries may be compared with spasm which occurs in the limb arteries of patients with intermittent claudication, and just as infarction of the heart may occur without angina, so in the majority of cases of senile gangrene there is no previous history of intermittent claudication. In conclusion the author points out that any benefit likely to be derived from surgical measures in the treatment of angina lies not in the hope of relieving the pain, but of interrupting the reflex path responsible for producing coronary spasm

This small book is written in a fluent style by one of the most esteemed French authorities on heart disease It is easy and interesting to read, it conveys the author's own experience and deductions, and we welcome it as a valuable contribution to a complex subject

---

Modern Methods in the Diagnosis and Treatment of Heart Disease Second edition By FRANCIS HEATHERLEY, M B, B S Lond, F R C S, Superintendent, Heart Clinic, Manchester; and Cardiologist to the Ministry of Pensions London Baillière, Tindall and Cox 1926 Pp 269 *8s 6d*

IN the second edition of his book on modern methods in heart disease Dr Heatherley adds two new chapters. of these the first deals with blood pressure and the second with treatment of cases of the effort syndrome The author states in his preface that the purpose of the chapter on blood pressure is to awake the interest of the general practitioner and to stimulate him to play his part in making original observations which will help forward the advancement of knowledge by affording data on which to base statistics. Dr Heatherley gives a clear description of the auscultatory method of blood pressure estimation and refers to several points which have proved of interest to him and which are likely to be unfamiliar to many practitioners In this chapter the ten pages which are devoted to the general principles of research contain many maxims worthy of the attention of those who have had no previous experience of original work

An appendix, dealing with hints to patients on the home treatment of functional disorders of the heart, consists of a brief popular account of the nature of functional nervous disorders and their treatment This appendix, which the author states to be largely based on Dr Geikie Cobb's Manual of Neurasthenia, has been distributed to pensioners attending the Manchester Heart Clinic, and has been found of value in obtaining their intelligent coöperation in the matter of treatment Dr Heatherley's book would be improved by a bibliography containing references to the numerous authorities quoted in the text, in place of the "list of interesting books" which it at present contains

The book is pleasantly written and will be of interest to those who are concerned with the medical examination of pensioners

---

BAINBRIDGE AND MENZIES' ESSENTIALS OF PHYSIOLOGY.

Fifth edition Edited and revised by C LOVATT EVANS, D Sc Lond, M R C S, L R C P, F R S, Professor of Physiology, University of London, at St Bartholomew's Medical College London: Longmans, Green and Co 1925 Pp 508 *14s*

THE progress of physiology is so rapid that not only the larger and more discursive but also the smaller condensed text-books require constant revision We welcome, therefore, a new edition of Bainbridge and Menzies' well-known work, brought up to date by Prof Lovatt Evans The merits of the book have long been recognised, and it is hardly necessary to add that the revision in such competent hands has been well done. Students preparing for pass examinations in physiology will find more help in this volume than in many larger tomes, and may be confident that they are being kept abreast of present-day discoveries

Considerable additions have been made, and as unessential details had in previous editions been reduced to a minimum, deletions have been rare. The popularity which this book already enjoys will doubtless be retained if not enhanced by the appearance of this new edition.

some specific effect on the tuberculous lesion, as in the last four cases treated signs of increased moisture were commonly noted after the injection He regards sanocrysin as worthy of further trial

Northern Ireland (Dr A Trimble and others) —A committee was constituted last year to supervise the trial in the Belfast area of sanocrysin as a method of treatment of tuberculosis The reports from the three institutions selected for the test are thus summarised —

Belfast Municipal Sanatorium (Dr Percy Walker) Six male patients treated Each patient received seven injections, totalling 6 5 g each All these patients were suffering from pulmonary tuberculosis (Turban-Gerhardt · third stage) Result One case appears to be arrested, two are definitely greatly improved, the sputum being now negative as regards tubercle bacilli, two are improved clinically but the sputum is still positive One case shows no change A second group of three patients is still undergoing treatment

Forster Green Hospital (Dr B R Clarke) —Twelve cases of pulmonary tuberculosis treated, 11 with tubercle bacilli in the sputum Results · The sputum of four patients became negative, four patients had a diminished number of tubercle bacilli, and in two patients there was an actual increase of tubercle bacilli after treatment Clinically, eight of the 12 patients showed improvement, the condition of two was unchanged, and two appeared to be worse as a result of the treatment Five further cases are undergoing treatment

Royal Victoria Hospital (Dr S I Turkington) —Four cases of pulmonary tuberculosis treated Three cases were definitely improved, in two of these cases tubercle bacilli disappeared from the sputum after treatment The fourth patient had a profound reaction after the third dose of sanocrysin and died from toxæmia Serum was used in this case but it had no beneficial effect

The *conclusions* of the Belfast Committee are as follows · (1) Sanocrysin is a distinct therapeutic advance in the treatment of tuberculosis in definitely selected classes of cases (2) The undoubtedly good results that have been obtained must, however, be observed for a further term, say, at least one year, to see whether the results are permanent, or whether further courses are advisable (3) Sanocrysin as a method of treatment is not suitable for general use, and with our present limited knowledge it should only be used in institutions equipped with the necessary apparatus, and under the direct control of sufficiently experienced physicians, with expert knowledge in the treatment of tuberculosis (4) Further research is necessary in order to determine (*a*) the class of case most likely to benefit by this form of treatment, (*b*) the correct size of dose for individual patients, (*c*) the intervals between the doses; (*d*) the length of the whole course of treatment, and (*e*) the significance of the clinical phenomena which would seem to indicate the discontinuance of the treatment

GENERAL SUMMARY

Experience in the selection and treatment of cases has greatly lessened the dangers attending the use of sanocrysin The first collective report by the Medical Research Council described two deaths directly caused by sanocrysin out of a total of about 30 cases treated This second report records only one similar fatality (Royal Victoria Hospital, Belfast) in a much larger number of cases treated, about 140 But the risk remains There may be sudden or progressive exaggeration of the more serious symptoms of the tuberculous infection, or there may be a poisoning of the kidney, of the liver, and even of the skin with a drug dermatitis which is quite distinct from the relatively transient rash All these dangerous features are far more liable to arise in the sanocrysin treatment of tuberculous patients than in the use of salvarsan for syphilitic or other infections All patients under treatment must, therefore, be in bed and under close medical control

In the last 12 months it has become the custom to give smaller doses of sanocrysin and at longer intervals than those used with the cases described in the first report The patient is thereby spared from dangerous reactions and even from any great discomfort It is, however, debatable whether this attenuation of the treatment for the sake of the patient's immediate welfare may not have the disadvantage of lessening the final benefit The arguments on either side are given in two recent books by Secher [4] and Wurtzen [5] respectively, when describing clinical results obtained in Copenhagen

The special serum has rarely been used and there is no fresh experience to record about it Nor is there much more evidence upon the question whether a well-marked reaction to sanocrysin can be accepted as a diagnostic test for tuberculous infection It would, indeed, appear from the reactions seen by Fournier and Mollaret [6] in the treatment of human syphilis with a similar gold salt that such reactions are not specific for tuberculosis

As in the first report, it was again evident that there may be an advantage in collecting evidence from different clinical observers as to the possible benefit of sanocrysin treatment Some thought that nothing more was seen than might have been expected as the result of prolonged rest under hospital or sanatorium control But others were very emphatically of the opinion that sanocrysin did cause unusually quick amelioration of all the features of a tuberculous infection, especially in the lessening of sputum and disappearance of tubercle bacilli The question of secondary infections of the lung tissue by other organisms has not been dealt with The results described are considered only in the broad aspect of clinical recovery or deterioration, for there are no laboratory tests yet available for analysis of any possible changes in a patient's powers of resistance to tuberculous infection

The Medical Research Council received by the generous courtesy of Prof Mollgaard a free supply of sanocrysin and serum for trial in Great Britain over a period of 12 months The trial has shown how dangers may be averted, and, in the opinion of some workers, it has given indication that along the line of some such substance as sanocrysin there is definite hope of a drug treatment that will check the progress of a tuberculous infection and allow the patient's natural powers of resistance better play in finally arresting the disease These various clinical reports, for which the Council are greatly indebted to the observers, will suffice to indicate to the medical profession the general need for extreme care in the use of sanocrysin and the particular types of infection in which it may be expected to cause some improvement.

References

1 The Gold Treatment of Tuberculosis Preliminary Report by the Medical Research Council, THE LANCET, 1925, i, 833
2 T R Elliott, THE LANCET, 1926, i, 126
3 Cummins, Tattersall, and others Discussion on the Treatment of Pulmonary Tuberculosis with Sanocrysin, Proc Roy Soc Med 1926, xix, No 5
4 Knud Secher Treatment of Tuberculosis with Sanocrysin and Serum, Copenhagen, 1926 (Levin and Munksgaard)
5 C H Würtzen Recherches sur les effets de la Sanochrysine, Copenhagen, 1926 (Levin and Munksgaard)
6 Fournier and Mollaret Conp Rend Acad des Sciences, 1925, clxxxi, 943

PAYING PATIENTS OF LIMITED MEANS —The trustees of the late Colonel John C Barlow have allocated a sum of £65,000 to the enlargement and improvement of Bury (Lancashire) Infirmary The conditions attached to the gift require the provision of accommodation for persons of limited means as private paying patients The extensions will provide more women's beds, a maternity department, and the erection and equipment of a new electro-massage, X ray, and sunlight treatment department. There will be 11 private nursing rooms, with an operating theatre attached, for paying patients, who will be entitled to be attended by their own doctors

THE LANCET.

LONDON: SATURDAY, JULY 24, 1926.

THE TREATMENT OF INSANITY.

THE meeting of the Royal Medico-Psychological Association, held July 13th–16th under the presidency of Colonel J. R. LORD, proved the existence both within and without the medical profession of a valuable extension of interest in this most important section of medicine. We published last week an abstract of the Maudsley lecture delivered before the Association by Prof. G. M. ROBERTSON, who took as his subject the most practical side of mental therapeutics—namely, the prevention of mental disease; and certain of his words, though not intended so to do, formed an excellent illustration of the grave and delicate responsibilities of the psychiatrist. Prophylaxis might be defined, said Prof. ROBERTSON, as the prevention of an attack of insanity when it threatened but before definite symptoms had appeared; and the anxious position in which the medical practitioner, not necessarily an expert, is placed, when dealing with possibly unstable patients, is well indicated by the definition. How does an attack of insanity threaten before definite symptoms appear? In words which formed a preliminary survey of the whole field Prof. ROBERTSON enumerated the danger signals, and the particular skill of the diagnostician may be said to come in when a difference can be established between a danger signal and a definite symptom. For example, suppose a change of character is recognised by the physician from personal observation, supported or no by a family story. Is this change of character the evidence of an established form of mental disease, or is it only an indication that such disease will be established if preventive measures, and those of the right sort, are not undertaken?

Here we have to consider the fundamental oppositions of view that are found among equally learned psychiatrists as to the inevitability of certain prodromata being followed by sinister sequelæ. A jesting story has it that a parent having an open mind on religious questions and becoming the progenitor of twins, decided to have one child baptised and the other not, keeping the second one as a control. This is a fair burlesque of the situation which arises in medicine when we desire to prove or disprove the efficacy of any particular procedure; but the medical conscience would not allow the practitioner to offer prophylaxis to certain cases and to withhold it from others in order to ascertain which the right course might be in the future. He must subject all the sufferers alike to what he believes to be the best treatment, and the general practitioner will find that he cannot obtain identical advice from equally competent experts as to where and how to begin prophylactic attention, or even as to whether we should begin it at all. We publish this week, as a Special Supplement to THE LANCET, a symposium on Early Mental Disease written by a group of well-known authorities, the main object of the Supplement being to answer questions that arise in the minds of medical practitioners who are called in to pronounce upon the normality or the certifiability of a patient who has manifested mental instability, disorder or development. The plan on which the collaborators agreed to arrange their contributions was chosen because it appeared to be one in which exact information upon any particular case could be easily obtained, whether the guidance was required for the making of a diagnosis, or for the selection of treatment. Thus the first part of the volume is devoted to the study of those early symptoms which, if persistent and progressive, should lead the practitioner to suspect instability, while the second part gives an account of the psychoses and neuropsychoses met with in practice, and there is furnished here the evidence that certain preludes, if unseen or neglected, result in various forms of disaster. The essays were submitted in their collected form to the late Sir FREDERICK MOTT, whose preface points out that the most important possession for the general practitioner is a knowledge of the signs and symptoms of mental defect or disorder at the earliest possible moment, and who has commended the volume to the medical profession because it should meet many of the anxious positions now existent.

Dr. R. H. COLE, writing on the progress of the medical profession in the practice of psychiatry in this issue of THE LANCET, calls particular attention to the advancement that has been made during the last 30 or 40 years in its teaching. His words have a wide significance. We find specialists regretting the small experience of the general practitioner in medico-psychology, and it is well to be reminded by one of them that it is only during the last generation that the training of the men who enter the medical service of the mental hospitals has been raised to its present standard. To-day we have a large body of experts able to assist the profession generally in the problems that present themselves, but also engaging upon the researches whose outcome will be the psychiatry of the future. At the dinner of the Royal Medico Psychological Association Dr. GREIG SOUTAR drew attention to the fact that many of the teaching bodies now issue special diplomas in the subject of psychological medicine. This is a proof that while the public attention has been sharply focussed on the administrative side of lunacy, the educational authorities have largely combined to render fine and progressive scientific assistance.

THE NATURAL DURATION OF CANCER.

IN the course of the investigations of the Departmental Committee appointed in 1923 by the Minister of Health to consider available information with regard to the causation, prevalence, and treatment of cancer, certain difficulties have arisen. These are due to the fact that in the study of cancer from the clinical side there exists no well-defined criterion of the success or failure of a method of treatment. When a patient suffering from strangulated hernia has been relieved by surgical operation, he may clearly be said to be cured, since had the operation not been performed he would almost certainly have died within a few days; after its performance the patient, so far as his expectations of further life are concerned, is brought back into the category of the general population of the appropriate sex, age, and occupation. But it is less easy to interpret the word "cure" as applied to more chronic cases. For example, what is the criterion of cure in patients showing the classical symptoms of pulmonary tuberculosis? It would be too severe a test to demand that their average duration of life should be as long as that of a random sample of persons of the same age, sex, and occupation. These considerations have stimulated Dr. MAJOR GREENWOOD to make an attempt to find a basis from which inferences as

Manual of Surgery

By the late Alexis Thomson, M D, F R C S Edin and Eng, and Alexander Miles, M D, LL D, F R C S Edin Vol II, seventh edition Oxford Medical Press Pp 663 12*s*

The second volume of the manual deals chiefly with the locomotor apparatus, the brain, the spinal cord, and special organs. Fractures and dislocations are treated with great thoroughness, and on the rather unusual plan of discussing the injuries of each region separately. From the point of view of systematic description the method is a little confusing, but for purposes of diagnosis there is a certain advantage in describing under one heading all the injuries, for example, that can occur in the region of the shoulder The whole of this section is profusely illustrated, and the illustrations of deformities are extremely good The effects of injuries of the skull, and intracranial hæmorrhage, are admirably dealt with, but surely more than three pages might have been spared to the subject of cerebral tumours The volume contains an immense amount of information in a readily accessible form, and it is particularly well suited to the requirements of the student who wishes to look up information about cases he has seen in hospital. He could hardly find a more convenient volume to assist him in his studies

Bacterial Infection

With Special Reference to Dental Practice By J L T Appleton, Jun, B S, D D S, Professor of Microbiology and Bacteriopathology, the Thomas W Evans Museum and Dental Institute, School of Dentistry, University of Pennsylvania London Henry Kimpton 1926 Pp 474 28*s*

This stimulating text-book is intended to give dental students and practitioners a knowledge of the general process of infection and an understanding of the special bearings of this upon dental practice It is divided into three parts Part I treats of bacteriology, together with some very important information upon antiseptics and sterilisation, Part II of infection generally, and Part III of the special bacteriology of the regions dealt with by the dentist This stated arrangement is hardly adhered to, consequently the subject-matter is rather unsystematic, and there is a lot of overlapping between Parts I. and III The bacteriological descriptions assume that the reader already possesses a fairly comprehensive knowledge of the ordinary morphological and cultural characteristics of organisms, and there is a great deal of information included which has only theoretical importance Twenty pages are given up to a discussion of classification and two distinct systems are described In spite of an attempt to include too much, which results in the admission of matter which has only remote bearings upon the main theme, the book is nevertheless an illuminating one It sets forth information in a broad and sane way and may be read with profit by dental students and by those who have qualified, it certainly represents a level of instruction considerably higher than that which obtains in most of the dental schools in this country

Cancer Its Control and Prevention

By John F Hall-Edwards, late Senior Medical Officer in Charge of X Ray Department, Birmingham General Hospital Birmingham Cornish Brothers, Ltd 1926 Pp 88 2*s*

The object of this little book is to control and prevent cancer by educating the public The author impresses upon his readers that cancer is curable if recognised and treated in its early stage He describes the various symptoms which may be indicative of cancer in the different organs, and urges the public to seek medical advice without delay when there is any disturbance of health which might possibly be due to cancer. This part of the book, while it contains nothing new, is well and clearly written and can be recommended as sound advice But the statement on the cover that "the death-rate from cancer could be reduced within two years by 20 per cent if the public only knew and acted upon the advice given in this book" is not justifiable and is not justified by anything in the text The author merely repeats on p 27 that "it has been computed that 15-25 per cent of the deaths from cancer could be saved as the result of education by intensified propaganda" No explanation is given how this calculation is arrived at, unless it be the example given on p 41 Dr Hall Edwards refers there to the reports of the Radium Institute, where under the heading of "Moles, Warts, Papillomata," 74 cases have been reported as cured by treatment in two years He goes on to say "Taking these figures as they stand it is obvious that in two years 74 cases of skin cancer have been prevented"! The naiveté of this argument enables one to understand the author's confidence in the beneficial results of the intensified propaganda which he proposes In the United States a society for the control of cancer was founded in 1913, and has carried out an active propaganda for many years During that period the recorded mortality from cancer in the United States has considerably increased

Heredity

The Theory of the Gene By Thomas Hunt Morgan, Professor of Zoology in Columbia University New Haven Yale University Press 1926 With 156 figures Pp 343 18*s*

It was in 1825 that the Earl of Bridgewater, whose monument stands by Ashridge Park, left £8000 to the President of the Royal Society to get written a work "on the power, wisdom, and goodness of God as manifested in the creation", whence came Sir Charles Bell on the hand, Dr Roget on physiology, and the other famous Bridgewater Treatises In 1901 Yale University received a legacy of $80,000 in memory of Mrs Hepsa Ely Silliman, with which they were charged to procure and publish an annual course of lectures "designed to illustrate the presence and providence, the wisdom and goodness of God, as manifested in the natural and moral world" Prof Morgan's book is the nineteenth of a series, which includes Sherrington's Integrative Action of the Central Nervous System, Haldane's Respiration, Krogh's Anatomy and Physiology of Capillaries, and perhaps most significantly, Bateson's Problems of Genetics For in the dozen years which have gone by since Bateson stated his problems remarkable progress has been made towards their solution, as is shown by this admirable exposition of what Prof Morgan believes about the gene and why he believes it The theory of the gene states that the characters of an individual are referable to paired elements (genes) in the germinal material which are held together in groups and arranged in a linear order, that these pairs separate when germ-cells mature and recombine independently according to Mendel's laws, that there may be at times an interchange between the elements in corresponding groups The gene is a conception based on quantitative experiments and the theory says nothing about its anatomical representation, though there are many facts which make it likely that it is a particle of chromatin occupying a defined place in a series which makes up a chromosome Prof Morgan naturally puts his case strongly and, where it is possible, quite definitely, but the particular value of his book is that he faces his difficulties frankly, and those who have read only more popular accounts of modern genetics may be surprised to find that the simplicity and certainty of the matter are not quite as great as they had been led to think There is indeed a great deal of current confusion about genes and characters and the effects of environment and we can thoroughly recommend a careful study of this considered statement by a master to any serious student who wants to know the present position The diagrammatic illustrations are good hospital applied to particular people who, for one reason or another, are being treated in private, the functions of institutions for the reception of the last two classes of cases are obvious, but in considering institutions prepared to shelter patients requiring special observation and treatment the report may be called prophetic, inasmuch as, though such places are extremely needed, they are only just coming into existence All nursing homes may not fall neatly under this classification, if only because patients under two or three of the different classes may, of course, be found under one roof, but the category is a quite adequate one from which to consider the need for supervision, and of this need there seems to be no doubt in the public mind nor in the mind of the Committee The Ministry of Health was evidently alive to the great difficulty implied in the registration and inspection of maternity homes fulfilling functions in regard to public health and child welfare, for, in the recommendations, special exemption from supervision is provided for publicly controlled institutions, which cannot require the same sort of standardising that might be necessary for private adventures From the British Medical Association the Committee learned that that body would not object to the registration of nursing homes where the registration authority delegated its duties to a committee upon which both doctors and nurses would be represented, ensuring also that medical records and case sheets would not be open to lay inspection The complaints received by the Committee came from doctors—mainly directed to structural and sanitary defects in buildings, from nurses—mainly directed to inadequate accommodation for patients and staff, poor quality of diet, and inadequacy of staff, and from patients—confirming from their aspect the views of the nurses These complaints were considered by the Committee under the indicated headings of buildings, accommodation, staff, and treatment of patients, and in view of much publicity that has been given recently to the alleged neglect of patients in nursing homes, we would draw attention to one passage in the report "The Committee do not intend to criticise the work carried out by well-run nursing homes, for it is clear that in many cases the owners or managers of these homes are making the very best of structurally unsuitable buildings"

On such clear-cut issues as could be formulated, the Committee make concrete recommendations which will lead surely to "something being done" They find that legislation to secure registration and inspection of nursing homes should be introduced under the supervision of county and borough councils, with power of delegation to a committee upon which doctors and nurses are represented, the inspection to be carried out by the medical officers of health with technical assistance, the inspection, they hold, should be limited to general questions and should not embrace any inquiry into medical records or the private affairs of patients They hold that the term "nursing home" should include all types of home—that is to say, maternity homes also—but not any publicly controlled institutions Charitable organisations, they say, could be exempted by action of the supervising authority for definite periods, but they do not agree that a nursing home should go free of inspection on the grounds of the residence or the control of a medical practitioner They recommend that appeals against refusal or cancellation of registration should be made to a referee appointed by the Minister of Health, and that all homes, including maternity homes, should be brought under one comprehensive scheme Action should follow on this report

Annotations.

"Ne quid nimis"

INTERNATIONAL RED CROSS CONFERENCE ON THE WELFARE OF THE SEAMAN

BETWEEN June 28th and July 5th an itinerant conference was held in Oslo Bergen, and Trondhjem with the object of uniting the Red Cross Societies of the world in a movement for bettering the health of the sailor The British representatives were Mr L Bowden, Dr Butler (of the International Labour Office), Surgeon-Commander L F. Cope, R N, Colonel L W Harrison, Dr C Lillingston, Dr F N Kay Menzies, Mrs Neville Rolfe, Dr Norman White, and Mr Murray-Williams The aim of the conference, which was organised by the Norwegian Red Cross Society and the League of Red Cross Societies, was to bring together the representatives of the national Red Cross Societies of the maritime countries of the world and certain other organisations such as the International Labour Office, to study the measures already taken in Norway for the welfare of the seaman, and to confer over steps to be taken in the future for his welfare Of the many items on the agenda, which included the international standardisation of a medicine chest and medical manual for ships not carrying a doctor, that which elicited the most lively discussion was the plan devised by Dr Harald Engelsen, of the Norwegian Red Cross, for a network of medical stations under the Red Cross for seamen in every port It was his original intention that the Red Cross should choose one doctor in every port to act as the agent of the Red Cross, putting his surgery at the service of the sick seaman, who would pay the ordinary doctor's charges and who would, if he required specialised treatment, be passed on to a specialist or a hospital where he could receive such treatment It was argued by Dr Engelsen in favour of this scheme that the seaman would benefit by having a doctor found for him and guaranteed by the national Red Cross Society of the country; also that the patient would have the advantage of continuity of treatment as he travelled from one country to another in the charge, so to speak, of Red Cross doctors who would be more or less in touch with each other, information as to diagnosis and treatment being carried by the patient from one doctor to another The Secretary-General of the Norwegian Medical Association (Dr. Jörgen Berner), gave the blessing of his Association to this suggestion, although it entailed granting a monopoly to only one doctor in each port The attitude of the foreign delegates to the scheme might be described as one of frank, but friendly, criticism They were agreed as to the desirability of linking up the welfare work for seamen under one single international organisation, such as the League of Red Cross Societies, but they did not see how the Norwegian scheme in its entirety could be accepted by every other maritime country. The first three resolutions, unanimously adopted by the conference, gave expression to this feeling They were

1 That bureaux for furthering the health and general welfare of seamen be established in seaports throughout the world in close liaison with, and as a further development of, such national and international action in this field as has already been taken

2 That each bureau be placed in a prominent position at the water-side The chief function of these bureaux would be to furnish (*a*) treatment or information as to where appropriate medical advice and treatment can be secured, (*b*) postal facilities such as addresses to which the seaman's letters might be sent, and (*c*) information as to the local recreational and social facilities and sleeping accommodation

3 That such seamen's bureaux should be distinguished by a common badge of world-wide application.

To assure continuity of future action, the conference adopted as a further resolution, that—

"The League of Red Cross Societies should invite the International Labour Office, the Health Organisation of the to the value of treatment in cancer may ultimately be drawn In an introductory paragraph to a report on the Natural Duration of Cancer,[1] he deprecates the use of the word "cure" without qualification in assessing the results of treatment of any chronic disease, and suggests that a numerical measure of cure must take account of three quantities (1) the average duration of life of a person, of the same age as the patient, not known to be suffering from the disease, (2) the average duration of life of a person suffering from the disease and left untreated, (3) the average duration of life of a person suffering from the disease and treated in the manner the value of which it is desired to test Of these quantities, one only, the average duration of life from any age in the general population, is known at all accurately The duration of life after treatment is known, but only to a rough approximation, for certain forms of cancer To collect information on the "natural" duration of life of cancer patients is the object of this report It is admitted that *really* accurate knowledge of the average length of life of a cancerous process not radically treated can never be had because its onset is often insidious There are some forms of cancer—for instance, cancer of the stomach—where the earliest indications of disease are almost wholly subjective But there are other forms, cancer of the breast or of the tongue, for instance, where something tangible, a lump or a sore, is given, and in these our measure of duration, still only rough of course, still probably understated, is of real value Dr **GREENWOOD** believes that it is worth while to seek measures of natural duration at least for cancers of tongue, breast, cervix uteri, rectum, and œsophagus

The data here analysed were obtained by the courtesy of several hospital staffs and include 4238 cases relating to seven primary sites From records made by Prof W S **LAZARUS-BARLOW** (London), Sir **GEORGE BEATSON** (Glasgow), Dr S **WYARD** (London), Dr **POWELL WHITE** (Manchester), and Mr **CARTER BRAINE** (London) he finds the mean duration in months to be 38 3, 20 9, 26 7, 16 5, 12 0, 14 5, 16 8 respectively in cancer of the breast, uterus, rectum, tongue and mouth œsophagus, larynx, and stomach There is no significant difference between the different sets of averages obtained Dr **GREENWOOD** finds no confirmation of the general opinion of clinicians that age at onset is an important factor There seems to be little relation between age of onset and duration The ordinary arithmetic average duration, however, puts the case in too favourable a light, since the existence of a small number of persons who survived a very long time—for example, two breast cases and one rectal case lived over 30 years—has pulled up the arithmetic average The mean and the median value —i e, the value midway between the longest and shortest durations—are often far apart While the actual arithmetic average duration of cancer of the breast is over three years, half the patients are dead within a little more than two years and three months, 25 per cent do not live more than 18 months, and only 25 per cent survive beyond four years one month For cancer of the rectum the difference is less striking, the arithmetic mean duration is only three months longer than the median value

The significance of the results from the statistical point of view is discussed in some detail From the material at his disposal Dr **GREENWOOD** has constructed a survivorship table, calculating the chances of survival from nought to six years after onset of cancer in each region in untreated cases Taking cancer of the breast as an example, he shows how from the data of natural duration an attempt to measure the effects of treatment may be made He is careful to point out that in the present state of our knowledge a certain element of conjecture is involved, and that certain assumptions are inevitable Accepting these assumptions we have the following summary results The normal expectation of life of a woman aged 55 is 18 87 years, the expectation of life of a woman with untreated cancer of the breast is 3 25 years, the expectation of life of a woman operated on under "average" conditions is 5 74 years, and of a woman operated on under the best conditions is 12 93 years To-day the annual quota of new cases of cancer of the breast in England and Wales is probably at least 5000 Not more than half the patients undergo the radical operation and of these fewer than half again are operated on under the most favourable conditions How many years of life will these 5000 women, on the average, enjoy? 2500 of them will have 3 25 years apiece, 1250 will have 5 74 apiece, 1250 12 93 years each The grand total is 31,462 5 years Had each enjoyed the normal expectation, the total would have been 5000 multiplied by 18 87 or 94,350 years If all had been operated on under the most favourable conditions, the quota of years would have been 64,650, more than 30,000 years of life beyond what they may actually expect Sir **GEORGE NEWMAN** emphasises in a prefatory note the advantage enjoyed by those who submit to early operation in this form of cancer Recent records of cases of women operated upon for undoubted cancer of the breast in various provincial cities, notably Leeds,[2] confirm Dr. **GREENWOOD's** arresting conjecture that resort to early operation in cancer of the breast would, in the aggregate, add thousands of years to the active life of the nation

◆

NURSING HOMES

A Select Committee, appointed by the House of Commons on March 2nd last to consider and inquire into the question of the inspection and supervision of nursing homes, and to report what legislation, if any, is necessary or desirable, have issued this week a well-considered and prompt report[3] Evidence was taken not only from medical and nursing associations, but from many engaged with the administration of public health in urban and rural districts, private medical practitioners, matrons and proprietors of nursing homes, and such persons with direct experience as nurses, patients, or visitors The information from the witnesses was sought in reply to the two questions, whether the general conditions under which nursing homes are conducted render their supervision by a public body advisable, and, if so, how such supervision can be most effectively obtained and exercised

The difficulty of defining the institutions to be considered was met by a classification under which all nursing homes were placed in five classes, accordingly as they provided accommodation for medical and surgical cases, for maternity cases, for cases requiring special observation and treatment, for senile and chronic cases, and for convalescent cases It will be seen that under the first two headings we have the usual material of the general or special tained pigment present in the cytoplasm but not in the nucleus. The larger cysts for the most part had no epithelial lining and the contents were in close apposition with the surrounding connective tissue. The pigment was very abundant and gave a blue-black appearance to the central part of the tumour. It contained no iron and was regarded as melanin by the authors, who believe that this case is the first on record in which melanin has been found in an odontome. Considered as an epithelial odontome the growth has other interesting features. The view that these tumours arise from an abnormal development of the enamel organ is supported by its structure. The authors advance convincing arguments in support of their suggestion that the growth may have arisen as an aberration of the enamel organ of the missing permanent incisor. Whatever its origin it is peculiar in its situation, since most tumours of this nature occur in the mandible, and in the small resulting disturbance of tooth development.

---

[1] Reports on Public Health and Medical Subjects No 33 Ministry of Health 1926 London H M Stationery Office, Pp 26 9*d*

[2] A Report on the Late Results of Operation for Cancer of the Breast (Leeds) Reports on Public Health and Medical Subjects No 34 Ministry of Health 1926 London H M Stationery Office Pp 20 6*d*

[3] Report from the Select Committee on Nursing Homes (Registration) London H M Stationery Office 1926 4*d*

THE EX-BABY

THE discussion on child welfare which took place at Westminster and was reported in THE LANCET of July 17th drew attention to a gap in our organisation for the care of the child. Antenatal and baby clinics provide for help and direction in regard to health up to the time of weaning, but Dame Janet Campbell showed that the "ex-baby" lacks systematised care until school life begins, when the school clinics take up their share in preventive medicine. The good work already done has probably been reflected in improved conditions of children who are not subject to supervision, but we cannot let this probability satisfy us, and the hiatus between babyhood and school age must be bridged. The gap in organisation has a noteworthy linguistic correlate, for Dame Janet Campbell's use of the phrase "ex-baby" is justified by the absence of a current word to specify the infant who is no longer "the baby" and has not yet attained the status of a school child. Yet during this period are being laid the foundations of the individual's character and disposition, upon which will depend his actions and reactions, and, to a great extent, his future happiness and even bodily health. There is a saying, attributed in varying forms to various people, but generally put into the mouth of an eminent theologian, who is credited with declaring that if he could direct the training of a child up to the age of seven he cared not a bit who trained it afterwards. Modern study of the development of character traits, however, leads us to attach more importance to the influence of the family, often unwittingly exercised, than to deliberate efforts to instruct. From these observations it is only a step to the view of Freud that, whatever may be its exciting cause, the foundations of a psycho-neurosis are laid in the first five years of life. Inborn temperament plays a part, but those neurotic reactions in the nature of fear, jealousy, hatred, and the like, which appear so irrational to the observer and yet are subjectively self-sufficient, are but repetitions of childish emotional behaviour. We are so accustomed to our loss of memory for the period when our own reaction modes were being laid down that we overlook the mystery of it. We say we were too young to remember. But any mother can give examples of the wonderful memory of her ex-baby, and the conclusion seems reasonable that we forget because we are too old to remember. According to the psycho-analytic view we forget, or repress, because the period is a time of conflict between primitive wishes and the growing inhibitions against them. Certainly the child who has "his nose put out of joint" by the coming of a "little stranger" will probably never know if a feeling of neglect then experienced was the first of a train of reactions culminating in a general tendency to undue resentment at any rebuff. The only child—who is often a nervous child—may never pass satisfactorily through the stage of dependence upon the parents, and the success of Barrie's best-known play may indicate that the memory of that stage of dependence still attracts both grown-ups and those who have not long passed through the ex-baby phase. Few of us would easily admit that the happenings of that phase had any influence upon our appreciation of Peter Pan. These speculations may appear remote from the subject of the provision of children's clinics, but preventive medicine has a task before it in the "plague of nerves" that interferes with the happiness and efficiency of so many people. If the ex-baby age is that in which are established not only character and disposition, but also the possibilities of later neurotic troubles, then the emotional situation of the child must be studied in conjunction with the purely physical side.

THE TOXICITY OF ZINC

THE use of zinc as a protective coating for galvanised pipes and cooking vessels, in cosmetics and medicinally, lends interest to the question whether this metal possesses toxic properties. The acute reaction known as brass-founders' ague or spelter chills, due to exposure to vapour of the metal at high temperatures, may be disregarded as resulting from an unusual physiochemical state; but even here chronic manifestations following frequent attacks have not been described. The subject has been approached in two recent articles in both of which literature bearing on it is summarised, but the conclusions drawn are unusually diverse. One of these articles considers the position of workers in galvanising plants[1] exposed to fumes of zinc sulphate and zinc chloride, here the authors report widespread gastro-intestinal conditions, varying from gastro-enteritis in the younger workers to gastric and duodenal ulcers in older men. A period of from 5 to 20 years is thought necessary for the production of these lesions. The experimental work of others is claimed in support of zinc being the causative agent. No such train of events, however, has been described in this country, on the contrary, in one district where galvanising is the staple industry, gastric ulcers, although not uncommon among domestic servants, have been noted not to occur among the factory women.

The second article referred to[2] gives the evidence for considering zinc to be universally present in animal tissues, and present in remarkably similar total concentrations in animals of different species and in approximately constant concentrations in different animals of the same species. The authors deduce from the facts that this metal, instead of being a poison, takes part in normal metabolism of plants and animals. Corn deprived of zinc becomes chlorotic, it acts as a catalytic fertiliser for maize. Animals on a zinc-free diet do not flourish; the zinc content of yolk of egg, milk, and spermatic fluid is high. An understanding of the normal occurence and rôle of zinc is needed when evaluating the effects of abnormal amounts introduced in the course of exposure to industrial processes. The suggestion is certainly new that zinc promotes the efficiency of growth processes.

THE NORMAL BLOOD COUNT

IF asked the normal number of red cells per c mm in the human being, nine out of ten medical men—students or practitioners—would reply, five million. A few, perhaps, would qualify their answer by saying that in the female the count is lower by about 500,000. The universal acceptance of this standard is something of a mystery, but the figure, repeated in text-book after text-book, is the basis for calculating the colour-index. The whole subject of the normal standards for the blood has lately been carefully reinvestigated by E. Osgood,[3] working in Portland, Oregon, and his results are worthy of close consideration. Taking samples from healthy male medical

---

[1] An Occupational Disease among Zinc Workers. C. P. McCord, A. Friedlander, W. E. Brown, and D. K. Minster. Archiv. Intern. Med., May 15th, 1926.

[2] The Significance of Zinc in the Living Organism. K. D. Drinker and E. S. Collier, Jour. Industr. Hygiene, June, 1926.

[3] Archives of Internal Medicine, May 15th, 1926.

League of Nations and other international organisations concerned to coöperate in appointing a standing committee on the welfare of seamen, this committee to arrange for expert investigation of (*a*) facilities for the medical treatment of seamen (e g , standardisation of ships' medicine chests, medical manual, a wireless code for medical consultations at sea, education of ships' officers in first aid and in the use of medicine chests, health propaganda among seamen, &c), (*b*) welfare conditions on board and in port, the provision of recreational facilities for seamen of all nationalities, social conditions in the ports, ships' libraries, films, &c "

It was the general opinion of the delegates to the conference that it had brought to light an important gap in the welfare work for the seaman, and that the Norwegian Red Cross Society, by inviting the sister societies to confer on this matter, had started an international movement which promised radical reforms.

SMALL-POX IN RELATION TO CLIMATIC CHANGES.

Data for epidemiological studies in tropical countries are not always easy to obtain, India is exceptional in possessing meteorological records and statistics of the incidence of various diseases extending over some 50 years After prolonged study of this material, of which he is in a position to detect the limitations as well as the significance, Sir Leonard Rogers has arrived at definite conclusions as to the influence of climatic conditions on the incidence of leprosy, tuberculosis, and pneumonia More recently he has drawn attention, in a paper read before the Tropical Diseases Section of the Royal Society of Medicine, to the relation between absolute humidity and small-pox prevalence in India He has now expanded this communication into a report[1] to the Medical Research Council, presenting tables, charts, and diagrams which give support to his view that by careful study of climatic conditions in India it is possible to forecast epidemics of small-pox He finds that the small-pox incidence in India is greatest and most uniform from year to year in Madras, the only province not receiving much rain during the south-west monsoon months from June to October In all the seven provinces receiving the south-west monsoon rains there is a remarkable decline of small-pox every year at that season, followed by an increase during the ensuing cold and hot dry seasons, once more checked by the next monsoon Rainfall alone does not explain this great fall of small-pox during the south-west monsoon The provincial average small-pox incidence shows no relation to the monthly temperature, and none to the relative humidity in the damp areas of Lower Bengal, Assam, and Madras The absolute humidity (that is, the amount of aqueous vapour as measured by its pressure, a convenient measure of combined humidity and temperature) shows a close relation to small-pox prevalence It rises to its maximum with the annual decline of small-pox during the south-west monsoon in every province receiving its main rain then In Madras both the absolute humidity and the small-pox rate are stationary at that season in the absence of the south-west monsoon, while the maximum absolute humidity occurs as early as April and May and is accompanied by the annual moderate early decline of small-pox The early winter north-east monsoon rains occur during a fall of the mean monthly temperature and of the absolute humidity, thus explaining their failure to prevent the winter increase of small-pox in Madras Sir Leonard Rogers holds that the influence of high absolute humidity in checking small-pox suffices to explain the seasonal prevalence of the disease in all parts of India In the less rainy areas of the North-West and Central India, with average absolute humidity during the monsoon of about 0 700–0 800, low absolute humidity during that period is nearly always followed by excess of small-pox in the ensuing dry seasons, while in the areas with heavy rainfall of Bengal and Assam, as well as in Madras, the absolute humidity during the summer, which is very high, reaching 0 800–0 970, has very little relation to small pox incidence However, years in which the humidity is low in the autumn, when normally it ranges from about 0 700 to 0 800, are generally followed by excess of small-pox in the ensuing dry months The only exceptions are that low humidity soon after a small pox epidemic, which has exhausted most of the susceptible material, may not result in any increase of the disease, while five or six consecutive years of normal or high absolute humidity may be followed by a rise of small-pox, on account of the accumulation of susceptible persons Sir Leonard Rogers believes that by watching the absolute humidity in India, and possibly in other tropical continental countries, at the season when they normally average about 0 700–0 800, about four-fifths of small-pox epidemics may be foreseen two or three months ahead, in time to enable the public health authorities to issue warnings and to organise additional vaccination staff to cope with and minimise the approaching outbreak of small-pox

A MELANOTIC EPITHELIAL ODONTOME.

The occurrence of a melanotic epithelial odontome in a child of 5½ months has recently been recorded by Mr J Howard Mummery and Mr A T Pitts.[1] According to the mother a swelling had first appeared in the front of the maxilla at about one month and had steadily increased in size, at the time of examination it was about the size of a small walnut, and was situated on the anterior aspect of the maxilla in the incisor region, chiefly on the right side The mucous membrane was stretched over the hard tumour but was freely movable A radiogram showed that the tumour cast a shadow much less dense than that of bone A dense patch, evidently calcified, on the left side resembled the imperfectly formed crown of a tooth There was no sign of the outer alveolar plate in the radiogram At operation a flap of the stretched mucous membrane was raised over the tumour and it was found that the outer alveolar plate had been thinned to the consistency of tissue paper over the growth but was still complete This bone was removed as well as the thicker bone over the lateral margin of the tumour, so as to give access to the growth, which was adherent to subjacent tissues only on its deep aspect Here it was intimately united to the bone, spicules of which passed into its substance, and some force was needed to dislodge the tumour The cavity was obliterated to some extent by crushing in the expanded bone, and the flap of mucous membrane was sutured into position with catgut. Recovery was uneventful and four years afterwards the only abnormalities were a twisted right lateral incisor and the absence of the right upper central incisor, all the other deciduous teeth being present. The concavity of the anterior surface of the bone above the missing tooth suggested the absence of the permanent right central incisor, and radiograms confirmed this There has been no sign of local recurrence or metastasis On examination the tumour proved to be a complex one It contained calcified bodies, a mass of imperfectly formed enamel, and long columns of enamel organ arranged in layers A narrow epithelial band was seen at the margin with numerous buds of epithelium extending into the growth, bearing a striking resemblance to a tooth-band with young tooth-buds growing from it Portions of dental pulp were also seen, as well as some imperfectly formed dentine The histology of the soft part of the tumour showed the typical structure of an epithelial odontone or multilocular cyst The smaller cysts were surrounded by epithelial cells, which appeared quite black from the con-

---

[1] Medical Research Council Special Report Series No 106 Small pox and Climate in India Forecasting of Epidemics by Sir Leonard Rogers, C.I E, M D, F R C P, F R S H M. Stationery Office. 2s.

[1] Proceedings of the Royal Society of Medicine, 1926, vol. xix. (Section of Odontology), p 11

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CLXXXII

THE TREATMENT OF URINARY CALCULUS

Cutting for stone is an operation of such antiquity and has received so much attention in lay and medical writings that it occupies a somewhat disproportionate prominence in the minds of those who only occasionally see a case of urinary calculus It will be convenient, therefore, to commence by discussing these cases of stone in which operation is unnecessary or is contra-indicated It is presumed that in stones of the kidney or ureter an X ray film of good quality has demonstrated the calculus, and in stones in the bladder that this viscus has been examined with the cystoscope Operation is contra-indicated in large bilateral renal stones In such cases the destruction of kidney tissue is very considerable, and what is left may be little more than sufficient to carry on the renal function An operation for the removal of a large branched calculus entails extensive destruction of renal tissue, and may be followed immediately or after an interval by failure of the renal function Further, it is practically certain that within a few months or at most a year or two the stones will have re-formed Operation in such cases is only performed where there is severe pain, septic absorption, or obstruction leading to hydronephrosis or pyonephrosis, all of which are rare in this type of calculus Where there are stones in both kidneys, one kidney being occupied by a large mass of stones and the other being the seat of a small calculus, the small stone should be removed by operation without delay. Such a stone, if impacted in the ureter, is likely to cause calculus anuria, and it is easily removed by pyelolithotomy without destruction of the tissue of the healthy kidney The treatment of the extensively diseased second kidney will vary in individual cases, but my inclination would be to leave the kidney alone if it were giving rise to no symptoms When the calculi in each kidney are of moderate size and too large to pass down the ureter, they should be removed by operation A cutting operation is rarely required in small stones in the kidney or ureter In stones up to the size of a pea or even larger, where the stone is rounded or shaped like a date-stone, it may pass by the natural channels At the present time, when early diagnosis by means of the X rays is the rule, these comprise about 80 per cent of the cases of stone in the kidney and ureter The small stone that is obvious may so far be the only one formed, or small stones may be formed and passed at frequent intervals One of the chief arguments against operation in such cases is that the operation does not confer immunity from further stone formation Recurrence in the future is rather more probable than non-recurrence and operation should, other things being equal, be avoided

Medical Measures

The treatment in such cases consists in powerful diuresis, supplemented if necessary, by the passage of ureteral bougies Diuresis is best produced by means of one of the natural diuretic waters, such as Contrexéville, Vichy, or Vittel, or a visit may be paid to one of these spas

The method I usually adopt is based upon that in use at the spas A bottle of the water is taken before breakfast each morning for a month One hour before breakfast the patient drinks one-third of the contents of a litre bottle and then takes exercise, preferably walking, for a quarter of an hour Another third is then taken and followed by a similar period of exercise, and then the final third, with a subsequent period of exercise and a rest before the first meal During the rest of the day the patient carries on his ordinary routine, exercise being encouraged After a month of this treatment, a rest is given from the forced diuresis for a fortnight, and then a second course is started Repeated diuretic courses are given with intervals for a year or more A course of treatment at one of the spas mentioned lasts three or four weeks, and the spas are open from early May to late September

Measures to Facilitate the Passing of the Stone

Should the stone have failed to pass under the diuretic treatment, its discharge may be assisted by dilatation of the ureter and by other means For this purpose the operating cystoscope, a large catheterising cystoscope, is used Ureteral bougies of large size are passed up the ureter These serve to dilate the lumen of the duct and also to move the calculus which may have become arrested in its passage down the ureter by a small fold of mucous membrane The injection of novocaine through the ureteral catheter to relieve spasm of the ureteral muscle, and of sterile paraffin to facilitate the descent of the stone, may be tried The vesical orifice of the ureter is the narrowest part of the duct, and this may be incised by fine scissors passed through the operating cystoscope Where the calculus lies at the ureteric orifice, partly projecting into the bladder, further assistance may be obtained by burning the edge of the orifice with the high-frequency cautery, and the stone may be moved by means of fine forceps Where the stone lies near the bladder, bimanual massage of the lower ureter by means of the finger in the rectum or vagina, and the second hand above the pubes, should be tried These methods are of value where the stone lies at the brim of the pelvis or in the pelvic segment of the ureter They are used in combination with, or followed by, the diuretic treatment The discharge of the calculus is facilitated by their use, but the patient should be warned that there is no absolute certainty that the stone will come away, and that no definite time for its discharge can be given It is a matter open to discussion as to how long a stone may safely be allowed to remain in the ureter or renal pelvis

If pain and hæmaturia have been excited by exercise, and the patient's activity is being seriously curtailed, or his business interfered with, and the non-operative methods have failed, it is better after waiting six months or a year to remove the calculus by a cutting operation than to leave it If, on the other hand, the stone is causing only slight symptoms there will be disinclination on the part of the patient to have any operation done It must, however, be remembered that the stone will increase in size and complications will arise that change for the worse the prognosis for cure after operation, and on this account operation should not be delayed indefinitely.

Operations for Stones in Kidney and Ureter

There are certain indications for the removal by cutting operation of a small calculus in the kidney or ureter—namely, urinary infection, dilatation of the renal pelvis, and anuria Dilatation is diagnosed in the early stage, before extensive destruction of the kidney has taken place, by means of pyelography A calculus of the kidney or ureter which is unsuitable for treatment by diuretic or manipulative methods should be removed by cutting operation Before carrying this out it is necessary to obtain information in regard to the second kidney. The two most common dangers in regard to the second kidney are the occurrence of stone in this kidney also and impairment of the renal function by sepsis A complete X ray examination of both kidneys and ureters and the bladder should therefore be made in every case of urinary calculus A specimen of the urine of the second kidney should be obtained by passing a ureteral catheter, and examined by estimating the percentage of urea and cultures made from the bacteria

Pyelolithotomy—The removal of a stone from the kidney should, if possible, be carried out by an students this worker found that the normal red cell count ranged from 4,400,000 to 6,390,000 per c.mm., with an average of 5,390,000. Counts of more than 6,000,000 occurred six times in the series of 153 subjects, and this finding ought to discourage the custom of reporting all cases with blood counts of more than 6,000,000 as polycythæmia. On investigating the normal standard of hæmoglobin Osgood found even greater confusion. Unfortunately, the vast majority of those who, using their own particular method, report a percentage of hæmoglobin, never stop to inquire on what standard that percentage is calculated. The methods most commonly used in this country are probably those of Haldane, Dare, and Tallqvist. These all take 13.8 g. of hæmoglobin per 100 c.cm. as the normal; but the standard for the Newcomer method, on the other hand, is 16.92 g. per cent. Osgood found an average of 15.76 g. per cent. with extreme variations of 13.44 to 19.03. Since the usual standards of hæmoglobin adopted in this country, and the assumed normal of five millions per c.mm. for the red cells, are (according to these observations) both too low, it follows that the normal colour-index, usually taken as somewhere in the neighbourhood of 0.85, is also too low. Osgood found the average colour-index to be 1.00, with variation between 0.84 and 1.21. Very great importance has been attached, and undoubtedly must attach, to the colour-index in the diagnosis of pernicious anæmia. But the results reported above go to show that its significance is very variable in blood counts performed in the ordinary way. "It is necessary," Osgood says, "to convert all hæmoglobin estimations into terms of grammes per 100 c.cm. before calculating colour-indexes, and it would be desirable to have all hæmoglobinometers standardised to read in grammes per 100 c.cm." This conclusion obviously demands the attention of all hæmatologists, whether laboratory workers or clinicians.

THE ACTIVE SUBSTANCE OF THE THYROID GLAND

ONE of the most interesting communications made in connexion with the joint meeting of the Biochemical Society and the London Section of Chemical Industry, which we report on p. 199 of our present issue, was that of Prof. G. Barger, professor of chemistry in relation to medicine in the University of Edinburgh. In the absence abroad of Dr. C. R. Harington he discussed the progress of the work on the chemistry of the active substance of the thyroid gland since its isolation by Prof. E. C. Kendall in 1919. Prof. Kendall obtained from the gland a crystalline substance, containing 65 per cent. of iodine, which was shown to be the factor through which the thyroid exerts its control over the metabolic rate. The method of extraction was laborious and the yield so poor that for commercial purposes it was essential that a simpler and cheaper method should be devised. Quite recently Dr. Harington, working in the Department of Pathological Chemistry of University College Hospital, has succeeded in obtaining a far better yield. He gave an account of his experiments in the *Biochemical Journal* (vol. xx., p. 300), acknowledging the helpful advice received from Prof. Barger throughout the progress of the investigation. Having noticed certain discrepancies in Kendall's work, Dr. Harington sought to improve on his methods. Prof. Kendall had only succeeded in obtaining a total yield of 33 g. of thyroxine from three tons of fresh thyroid gland. It appeared probable that a considerable proportion of the total loss of active material occurred during the preliminary process of hydrolysis of the gland in sodium hydroxide, so that the first attempts were directed towards finding a substitute for this process. After several experiments, Dr. Harington found that hydrolysis with barium hydroxide appeared to promise more favourable results. Full details are given of his method, which gave an average yield of 0.12 per cent. of thyroxine from the dried gland and 0.027 per cent. from the fresh gland. Having arrived at a practicable method for the preparation of comparatively large quantities of thyroxine, Dr. Harington proceeded to reinvestigate the chemical constitution of the substance. After deciding upon a method for the removal of the iodine from the thyroxine he describes at some length his experiments in the degradation and synthesis of this desiodo-thyroxine, of which the formula is set out in our brief report of Prof. Barger's observations.

Up to the present the orientation of the iodine atoms has not been determined, but experiments indicate that they probably occupy 3, 5, 3′, 5′ positions. The comparison of the physiological action of thyroxine and desiodo-thyroxine will doubtless be undertaken shortly and can hardly fail to lead to considerable advance in our knowledge of the pathological processes at work in the various forms of goitre.

THE LONDON POST-GRADUATE HOSTEL.

THE opening meeting of the Post-Graduate Hostel will be held at the Imperial Hotel, Russell-square, on Monday, July 26th, at 7 P.M., when officers will be elected and rules approved. The objects of the hostel are to welcome medical visitors who come to London, to promote an interchange of ideas by means of conversation and informal addresses, and to supplement and encourage the work of the Fellowship of Medicine and other bodies which arrange for post graduate instruction. A smoking-room and a reading room have been set aside at the hotel for residents and visitors, and the rules for their use, which are being proposed, are as simple as possible. It is suggested that the privileges of the hostel shall be restricted to fully qualified medical practitioners, that any such practitioner shall be allowed to dine with the members at the ordinary hotel charges on presenting his card; that a register of attendances and a register of discussions shall be kept; and that informal discussions shall be held from time to time at 9 o'clock in the evening on subjects previously announced in the medical journals. After the business meeting on Monday next there will be a reception at 7.30 P.M., followed by dinner at 8 P.M. At 9.15 P.M. Dr. Alfred Cox will take the chair at an address by Sir D'Arcy Power on the Hostel and its Objects. It is hoped that as many as possible will attend to hear the address even if they cannot dine at the hotel. Ladies and friends of medical men will be cordially welcome. Those who intend to dine on this occasion are asked to inform the management of the hotel in good time. Wide support should be obtained for this attempt to provide a rendezvous for medical men from abroad.

The discussion for Friday, July 30th, will be on the Difference between Inflammation and Hyperplasia, and will be opened by Sir Lenthal Cheatle.

THE Registrar-General's "Statistical Review of England and Wales for 1924" was published this week (New Annual Series, 4) at the price of 5s. net from the Stationery Office.

INDEX TO "THE LANCET," VOL. I., 1926.

THE Index and Title-page to Vol. I., 1926, which was completed with the issue of June 26th, will shortly be published. A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 1, Bedford-street, Strand, W.C. 2. Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now.

forming Sections of Venereal Diseases and of Radiology at the meeting to be held in Edinburgh in 1927.

Financial Position

The Treasurer, Mr Bishop Harman, in moving the adoption of the annual report under "Finance," said there was a balance in hand of £783 6*s* 4*d*. The balance of £8000 last year had been swallowed up by non-recurring expenses such as the equipment of the new building and the demands of the Scottish House. There was now no loan nor overdraft at the bank. There had been during the last few years a steadily progressive increase both in the income and in the expenditure due to the great increase in membership. An increase of £2600 in the general expenses account was due to the delegations to America and South Africa and legal expenses incident to the lease of the new house.

Funds for Research.

Dr F C Martley spoke of the importance of spending more money on pure science, since the first object of the Association was the advancement of science. Apart from exceptional years, such as the one just concluded, an average profit of £6000 might be looked for, and it was scandalous to spend only £1000 on research. Dr J W Bone pointed out that much of the general expenditure of the Association was for scientific purposes in connexion with the *Journal* and with the work of many of the committees, such as that on the causation of puerperal morbidity and mortality. It was not just to regard the money set aside for research grants as all that was devoted to science. Dr E B Turner pleaded for more money for research work. The *Journal* nearly paid for itself and the money used to finance it could not be regarded as an expenditure on science. There was also scope for many more British Medical Association lectures. Dr D Lawson said that £10 000 a year would be a suitable sum to spend on science, and suggested raising the money by an increase in the subscription.

Remuneration of Laboratory and Research Workers

The scale of salaries laid before the Representative Body last year was passed as the established policy of the Association. This scale states :—

(*a*) That whole-time (1) non-professional medical teachers, and (2) medically qualified laboratory or research workers should be grouped into three grades as defined below, and with the salaries as stated :—

Grade III.—Comprising those who are junior workers temporarily employed on probation; no person shall remain in Grade III for more than three years.

That the minimum salaries for Grade III shall be as follows: 1st year, £300; 2nd year, £350; 3rd year, £500.

Grade II.—Comprising laboratory or research workers or teachers who have had three years' experience in Grade III or in work of a similar character, and who are permanently and exclusively employed as such. That the minimum commencing salary for Grade II shall be £600 per annum.

Grade I.—Comprising those of Grade II whose qualifications or duties justify a position of seniority in status and a higher remuneration. That the minimum salary for Grade I shall be £750 per annum. That after the probationary period (i.e. Grade III) has been completed, dismissal should be possible only on grounds of neglect of duty, improper conduct, or incapacity.

(*b*) That non-professional medical teachers and medically qualified laboratory or research workers holding part-time appointments should receive remuneration for the time engaged, at the rate of not less than £600 per annum.

Amendments by the St Pancras division and the Dundee branch, seeking to exempt from this scale posts where there were special scientific or other advantages outweighing the financial, and small hospitals or schools where the drain would be serious, were rejected, the Chairman of Council and the Chairman of the Science Committee strongly urging the members not to weaken the policy of the Association in any such way. Sir Robert Bolam said that the Council's duty was to execute the policy of the Representative Body with discretion and any case of real hardship would be sure of sympathetic consideration.

Present Strength of the Association

The Chairman of the Organisation Committee announced that the membership of the Association had now reached 31,600, an increase of 2000 on last year and of 25 per cent. during the last three years. He referred to the success of the Handbook for the Newly Qualified, a new edition of which had recently been brought out. Three new divisions had been organised during the year. The Australian branch was doing well, and in Canada there had been very gratifying results of the affiliation carried through last year. It was hoped to do something in the near future to improve the position of the medical profession in India.

Locum Bureaux

The recommendation from the Bath meeting, authorising the establishment of Locum Bureaux under B.M.A. auspices, had been investigated, but it had been found that such bureaux would be unremunerative for a very long time and would necessitate considerable expense. Their establishment had, therefore, been given up in favour of an agreement with an existing organisation, which would obviate any technical or legal difficulties.

The Medical Profession in South Africa

Dr Morton Mackenzie sketched briefly the difficulties encountered in South Africa, where until recently two separate associations had existed, the British Medical Association and the South African Medical Association. The consistent policy of the Council had been to seek for the unity of the profession and as the result of an organising tour by Dr A. Cox amalgamation of these two bodies had been secured. Dr K B Alexander of East London, Dr. H W Dyke of the Orange Free State, Prof. J. W. C Gunn of Cape Colony, and Dr. E A. Seale of the Cape of Good Hope all spoke of the high appreciation in South Africa of Dr Cox's services. Motions were passed welcoming the amalgamation, congratulating the leading members of both the South African medical bodies on the statesmanship shown, and wishing the new Medical Association of South Africa (British Medical Association) every success.

The Science Committee

Dr C O Hawthorne, Chairman of the Science Committee, in proposing the adoption of the remainder of the annual report under the heading "Science," remarked on the increasing number of applications for scholarships and grants in aid of research, to the important work carried out by scholars and grantees, to the investigation into the Spahlinger treatment, and to the Sir Charles Hastings clinical prize for general practitioners. The 1926 prize had been awarded to Dr Norman Porritt of Llandudno, for a study entitled the Abdomen in Labour. A high level of excellence was reached in the 20 clinical studies submitted. The report on rheumatic affections in childhood would doubtless prove the starting point of new enterprise, investigation, and research.

During the course of the day the following ten members of Council were returned unopposed: Dr G B Hillman (Wakefield, Pontefract and Castleford), Dr I W. Johnson (Bury), Dr D G Greenfield (Northamptonshire), Dr. A W. Nuthall (Birmingham), Dr E B Turner (London), Dr. W. Paterson (London), Dr H C Bristowe (Bristol), Dr A Lundon (Guildford), Dr. C E. Douglas (Fife), Dr J G McCutcheon (Glasgow), and Dr J. Mills (Connaught).

SATURDAY, JULY 17TH.

Mr McAdam Eccles, Chairman of the Hospitals Committee, proposed and carried on behalf of the Council:—

That in all cases of accident where medical attendance is given at a voluntary hospital, and such medical attendance is covered either directly or indirectly by insurance, the hospital authorities should recover from the insurance company the full cost of maintenance and treatment of incision through the wall of the renal pelvis (pyelolithotomy) in order to avoid destruction of the renal tissue For this operation the stone must lie in the renal pelvis, it should be of moderate size and without branches, and it must be possible to manipulate the kidney so that the posterior wall of the pelvis is exposed

If the stone lies in a calyx, its position should be carefully demonstrated by means of the X rays and felt by means of a probe passed through the convex border of the kidney, so that a small incision can be made directly upon it through the renal cortex Branched stones are removed through the renal cortex by an adequate incision, and the cavity in which they lie thoroughly cleared out by irrigation and swabbing Where there is a large branched calculus and the kidney is infected, and the second kidney is normal, nephrectomy will be the best treatment

Operations for Stones in the Bladder

Small stones in the bladder can be removed by the evacuating cannula and bulb used in litholapaxy

Litholapaxy—The operation of choice for stones in the bladder is crushing (litholapaxy) In skilled hands the operation is rapid, and the convalescence short, and there is less danger than in a cutting operation Litholapaxy is contra-indicated where there is severe cystitis, enlarged prostate, diverticulum of the bladder, or growth of the bladder If the stone is a very large one, it is better removed by suprapubic cystotomy, and if there is severe sepsis of the kidneys bladder drainage by cystotomy is an important method of treatment of the kidney condition, so that this method will be chosen for the removal of the stone If the surgeon has few opportunities of treating stone in the bladder, he will probably choose suprapubic lithotomy as the operation best suited to his attainments When the prostate is enlarged or a growth or a diverticulum is present, the main surgical procedure consists in the removal of these conditions and the extraction of the stone is an incident in the operation

Provision against Recurrence

Having removed a stone from any part of the urinary tract, the question of providing against recurrence must arise In such cases careful dieting should be carried out This will usually be concerned with the reduction of oxaluria or of uric acid crystals in the urine In any case foods which irritate the urinary tract, such as alcohol, pickles, asparagus, strawberries and acid fruits, curries, peppery foods and strong coffee should be cut out from the dietary Several courses of diuretic waters such as I have described above, and a visit to a diuretic spa once a year for a few years should be prescribed

JOHN THOMSON-WALKER, M B Edin , F R C S.,
Senior Urologist, King's College Hospital ,
Surgeon, St Peter's Hospital for Stone

DONATIONS AND BEQUESTS —Mr Arthur John Pownall Brocklehurst, of Minehead, Somerset, and late of Macclesfield, left £5000 to the Macclesfield Infirmary and £1000 to the Minehead and West Somerset Hospital —Miss Mary Ethel Sim Scharlieb, B A , Harley-street, W , left, on the death of her mother, £4000 to the University of London for founding a scholarship in memory of her mother, to be called the " Mary Scharlieb Research Scholarship "—Mr John William Larkin, Crown House, Brentwood, Essex, besides other bequests, gave £1000 each to the London Hospital and the British Home and Hospital for Incurables, Streatham, £500 to the Brentwood District Cottage Hospital, and £200 to the Brentwood Nursing Association —Sir Squire Bancroft, besides many other bequests, gave £1000 to the Middlesex Hospital for a Squire Bancroft bed, and £1000 to the Chelsea Hospital for Women, for a Lady Bancroft bed —The Royal National Orthopædic Hospital, Great Portland-street, W , has received £500 from the estate of the late Mrs R I Scorer by direction of the King by his Sign Manual —The Manchester Royal Infirmary has received a legacy of £1000 from the executors of the late Mrs Elizabeth Kirkham —Various medical and other charities in the Rochdale and Oldham district as a result of the annual sports of the Rochdale County Police will receive amongst them £1200, making a total of £5000 during the last four years

---

Special Articles.

BRITISH MEDICAL ASSOCIATION

ANNUAL MEETING AT NOTTINGHAM

THE ninety-fourth annual meeting of the British Medical Association opened at Nottingham on July 16th, when the Representative Body met at 10 A M in the Mechanics' Hall, with Dr H B Brackenbury in the chair

Municipal Welcome

At 11 A M the Mayor of Nottingham, Alderman Charles Foulds, accompanied by the President-Elect, Mr R G Hogarth, senior surgeon to the Nottingham General Hospital, visited the meeting to welcome the Association He remarked that its last visit had been in 1892, the year in which he had come to live in the town He referred to the changes which had taken place during the intervening 24 years and to the amenities of Nottingham as a health resort In particular was the city proud of its open spaces, which occupied nearly one-seventh of its total area Dr Brackenbury acknowledged the welcome and expressed the pleasure of the Association at revisiting the city

REPRESENTATIVE MEETING

FRIDAY, JULY 16TH

After the usual formal business, Major-General Sir Alfred Blenkinsop and Group-Captain N J Roche were elected to the Council for the period 1926–29 as representatives respectively of the A M S and R A F M S A message of condolence was sent to Dr Milner Moore, one of the " fathers " of the Representative Body, who was prevented by ill-health from attending the meeting It was agreed that the annual meeting in 1928 should be held in Cardiff, and that Sir Robert Philip, M D , F R C P E , should be President of the Association for the year 1927–28 Dr J F Hall-Edwards, a martyr to radiological research, was elected an Honorary Member of the Association in recognition of his services to medicine

In moving the adoption of the annual report of Council, Sir Robert Bolam referred to the gift of £1000 by Mrs Bishop Harman to establish a prize for research into the troubles incident to child-bearing He showed a gold and enamel badge of office presented anonymously for the use of the Chairman of Council and announced that the Council had also received a silver inkstand from Dr A E Wynter, son of the Editor of the *British Medical Journal* from 1855-61 a silver jug from the South Australasian branch, and a bust of Hippocrates from Messrs H K Lewis The Council had decided to present the gold medal of the Association to Sir Humphry Rolleston in recognition of his scientific work and his services to the profession and the Association

Sections at the Scientific Meeting

The Representative Body then considered three proposals to enlarge the scope of the scientific meeting Brighton proposed the institution of a section of the history of medicine and were supported by Edinburgh, which was particularly anxious that it should be inaugurated on the occasion of the Association's visit to Edinburgh next year, which will coincide with the Lister centenary celebrations Edinburgh also proposed sections of venereal diseases and radiology Sir Robert Bolam and Dr Brackenbury both pointed out that the Representative Body had never hitherto interfered with the arrangements for the scientific meeting It was the custom for the Arrangements Committee, composed of six local members and six nominated by the Council, to advise from year to year what sections should be held

It was agreed that the Council be requested to consider the desirability of instituting a Section of the History of Medicine at the annual meeting, and of analysis there was so far no common ground of agreement; it was the topic which most acutely divided professional opinion to-day and a pretty committee they would get Dr Parry hoped for a definite pronouncement, he congratulated him on his sanguine temperament Psycho-analysis had as yet no fixed foundation; it was at the growing point of medical theory and was totally inappropriate for committee methods It was much more properly dealt with by debate and report such as the Royal Medico-Psychological Association had instituted, so as to try and sift the truth from the falsehood The mere definition of the term would lead to a prolonged wrangle Dr Parry had said there was a public demand, but not whether the profession as a whole was longing for direction and advice He was out to condemn in advance and not to search for knowledge What was the committee to do when it had formed the opinion Dr Parry hoped for? Was it to excommunicate those who did not agree? In the long run that which was false would drop out and that which was true would stand; it would be no credit to set up a committee which might throw doubt on the truth The safeguard of the public in such matters, where enthusiasm was likely to carry people away, was to go to their ordinary medical adviser and their interests would be well looked after.

Dr R G. Gordon (Bath) said that a committee was already in existence under the auspices of the National Council for Mental Hygiene, and these were the proper people to represent all those interested in the mental welfare of the community, including, as they did some of the best legal and social services in the country. Undoubtedly there had been some abuses, but these were chiefly due to the practice of psycho-analysis by laymen, which everyone would agree was extremely dangerous, but not within the control of the B M A In a few years the abuses would fall into the limbo they deserved, partly as a result of the condemnation of the medical profession, but still more through that of the lay public Dr W Muir Smith (Eastbourne) said that the Sussex branch had not receded an atom from their original position and their object was to condemn the unnecessary emphasis of psycho-analysis on the sexual aspect of the question Dr C O Hawthorne reminded the meeting that Dr Parry was a man with a past in this matter: last year his point had been that criminal practices were so common that it was the duty of the B.M.A to express condemnation That had been refused, and now by an ingenious manœuvre he had transferred the matter to the department of the Science Committee from that of Medical Ethics Dr. Muir Smith had said plainly that those charges were not withdrawn. and clearly no reputable practitioner of psycho-analysis would sit on a committee so long as that slur on psycho-analysis remained Dr W Douglas said he saw no reason why the public should not be told what psycho-analysis was and what it did Dr H D. Woodroffe (Norfolk) spoke on behalf of the general practitioner, who was more affected than anyone else Dr. Langdon Down had said the public should go to the practitioner for guidance, and it was up to the Council to investigate for the practitioner the questions on which he had to give this guidance Dr Fothergill said that the work of psycho-analysts emphasised only one aspect of medicine, and was doing harm.

Dr R C Buist (Dundee) reminded the meeting that the B M A was a scientific association and had to realise the ways in which it could work scientifically. and asked whether the appointment of such a committee was a way of working scientifically In science one was not out for an opinion but for knowledge and knowledge in this subject did not at present exist What Dr Fothergill desired was not an open-minded committee but one in which he could destroy psycho-analysis.

Sir Robert Bolam said that there seemed to be some feeling that the Council was likely to obstruct investigations desired by the Representative Body; past history gave no colour to this The Council was willing to attempt any task laid upon it by the Representative Body, and if it found itself unable to carry out their instructions it would come back and be discharged Dr Buist had put a very important point The committee required by Dr. Parry did not ask at all the present value of psycho-analysis, which was what the general practitioner wanted to know but committed its members to an investigation of which he, the speaker, could not see the end Was the scope of the committee within practical grasp, and had the time come when it was possible to expect any result from its labours?—Dr Parry, in reply, said that this year's motion must not be judged by last year's, and that he was not satisfied to wait until he was an old gentleman; he wanted the matter settled now

The motion was carried by a majority of 56.

The General Medical Council.

Dr J S Manson proposed, on behalf of St. Helens and Warrington:

> That the Representative Body notes with satisfaction that the Council has given consideration to the recent Press agitation against the General Medical Council, but regrets that the Council, representing as it does the bulk of the profession, did not see its way clear to make a statement on behalf of the profession; further, that in the event of a renewal of the agitation, this meeting instructs the Council to issue a statement concerning the relationship of the profession to the public and asserting its confidence in the General Medical Council.

Dr Manson said that he wished this motion had come from one of the more important divisions He stigmatised the behaviour of the Council during the recent newspaper attack on the General Medical Council as 'oriental passivity' in a serious matter affecting the prestige of the profession, and compared it with the Council's activity when the capitation fee was threatened It might at least have shown approbation of the labours of others—for instance. Dr. Graham Little's skilful controversy in the Press A statement would not be enough to neutralise the campaign which had been carried on, and should be an initial step only in a defensive campaign of the B M A. in favour of rational medicine Nobody resented fair criticism, but that of the Press was not fair, but simply a brazen attempt to make the G M C accept unqualified practice.

Dr. R Langdon Down said that there was misapprehension as to the relation between the G M C., the profession. and the B M.A., and already enough confusion between the two bodies It would only be adding to this if the B M A. took the G M C. under its wing and tried to defend it against the world. The G M C was quite capable of its own defence It was most important that the B M A. should not take sides; the G M C was a judicial body and the B M A. ought not to identify itself with the judge in its courts It was easy to introduce an amplifier into such an agitation as that in the Press recently and to prolong the noise unnecessarily. the Council had been well advised to let the thing blow itself out

Dr J L Livingston said that to satisfy the people who felt something ought to be done the public misapprehension might be removed. He moved that the resolution be amended to read as follows.

> *That* the Representative Body notes with satisfaction that the Council has given consideration to the recent Press agitation against the General Medical Council and, in the event of a renewal of the agitation, this meeting instructs the Council to issue a statement concerning the relationship of the profession to the public.

This was seconded by Dr H. C Duffy. of Bolton

Sir Robert Bolam said that the amendment was very different from the motion The Press was not omniscient and he thought they had now found that much of their information had come from sources that could only be described as tainted The Council had not felt that until the eyes of the Press were opened. they could enter the arena nor was it their duty at any time to champion the G M C such patient That where patients who would ordinarily be considered as private patients are admitted to hospital solely on account of accident or emergency, they should be considered as "private patients"

A discussion followed on the motion

That case sheets and records of patients treated in hospitals should remain in the custody of the hospital, that they must be regarded as confidential documents and access to them allowed solely to the members of the visiting staff of the hospital

Dr H C. Bristowe, on behalf of Bristol, proposed an amendment by the addition to the motion of the words

and such other members of the medical profession as have the express permission of the visiting staff

Harrogate proposed to amend it by adding the words

and through the medical staff to the ordinary medical attendant of the patient, if that medical attendant so desires and the patient gives consent

Both amendments were lost after some discussion Mr McAdam Eccles and Sir Robert Bolam deprecated any weakening amendment Mr H S Souttar and others pointed out the difficult position of a visiting physician or surgeon who felt that he might at some time be compelled to show up his notes; he would probably keep two sets, one for inspection and one for his real opinions of the case The original proposition was carried

Consulting Staffs of Poor-law Hospitals

Mr McAdam Eccles proposed

(i) That the minimum fee per visit of a consultant called in to a Poor-law patient in a Poor-law hospital should be £2 2s, with mileage in addition where necessary, and (ii) that the minimum fee for each operation performed in such circumstances should be £5 5s

An amendment by St Pancras, recommending the addition of the words "the fee for a major operation being not less than £10 10s" was carried, and the substantive motion, with this addition, was passed by the requisite two-thirds majority to make it the policy of the Association

Passing to the question of regular contracts between consultants and Poor-law authorities, as opposed to sporadic attendances, Cardiff proposed

That the Council be instructed to consider the appropriate conditions of annual contracts for visiting consulting staffs of Poor-law hospitals

Dr E E Brierley, in bringing forward this motion, said that many annual contracts were being instituted, and that at present the hospitals policy of the Association gave no guidance as to the terms on which these should be arranged At the rates suggested in the motion just passed, the income of a surgeon who regularly attended a Poor-law infirmary would be quite likely to reach £2000 a year from that work alone Dr L G Glover, in withdrawing a similar motion by Hampstead in favour of the Cardiff one, remarked that in his division a local surgeon who was frequently called into the infirmary for operations had felt that his usual fees were more than the ratepayers ought to be called on to pay, and that Hampstead therefore desired the establishment of some definite scale

Dr E R. Fothergill proposed, and Dr E W G Masterman seconded, an amendment

That where the remuneration of a consultant for regular periodic visits for either of these services is on a salary basis it should be a matter of arrangement between representatives of the local medical profession and the local authority, but should have regard to the minimum fees mentioned above

Dr F Radcliffe said that divisions would be placed in a position of difficulty in making arrangements with local authorities unless they could have definite guidance as to what fee they should ask Dr J D Ewart said that the motion passed gave guidance and the conditions varied so enormously that there must be absolute freedom Dr R St Leger Brockman (Sheffield) remarked that in some places an appointment to the infirmary brought in private work as did a hospital staff appointment He supported the amendment The amendment was referred to the Council for consideration

Medical Attendants in Cottage Hospitals

Dr F. A Roper proposed on behalf of Exeter that the paragraph of the hospitals policy which states that "As far as possible every patient in a cottage hospital should have the right to be attended by his usual medical attendant" should be amended by the addition of the words

He should be responsible to his medical attendant for fees in the same way as he would be outside the hospital Where the patient has ordinarily paid mileage, such charge should be excluded, a suitable fee for each attendance being that which he would pay for attendance at the doctor's residence

He said that in the big hospitals the staff were mainly dealing with other people's patients, they reaped their reward in experience and prestige The cottage hospital was quite different, it was a small place to the staff of which every local practitioner belonged, and these practitioners could expect no gain from the appointment They sent their patients in for them to get nursing facilities unobtainable in their own homes, and not for specialist advice

After some discussion, Dr Roper withdrew the second sentence and his motion was carried as follows

That the following be added to paragraph 41 (Section XVI) of the Voluntary Hospitals Policy He should be responsible to his medical attendant for fees in the same way as he would be outside the hospital

Psycho-Analysis

Dr L A Parry proposed, on behalf of the Sussex branch.

That the Council be instructed to investigate the subject of psycho-analysis and report on the same

He said that the motion on similar lines which was referred to Council at Bath last year dealt with certain improper practices alleged to be carried on in the name of psycho-analysis This year's motion had nothing to do with that, it dealt with psycho-analysis as a whole The Central Ethical Committee had given the other motion a long, patient, and considerate hearing, but had decided not to do anything On Dec 31st of last year the *Times* had a leading article on the subject of psycho-analysis, one of the contentions being that it was time for the British Medical Association to inquire into this question and to relieve the anxiety felt by members both of the profession and of the public The correspondence which followed was almost unanimous to the same effect Sussex had again approached the Council, who had asked them to bring the matter before the Representative Body A reason brought against forming a committee of inquiry was the danger of interference with liberty of action, and of setting up a standard of orthodoxy What Sussex wanted was nothing of the kind, they only asked for a committee of sufficient standing to inquire into the whole subject The Committee on Rheumatic Diseases of Children had not been accused of setting up a standard of orthodoxy or interfering with liberty of action, and they wished psycho-analysis investigated in just the same able way Not only was there a professional demand for such an inquiry, there was also a public demand It was time that there was a committee to decide how much harm and how much good there was in the method

Dr R Langdon Down said he was glad Dr Parry did not propose to deal with the suggestions of improper practices He urged the meeting to try to picture what the proposal really meant in practice and to ask whether psycho-analysis were a suitable subject for treatment by a committee The Committee of Rheumatic Affections in Children illustrated in a practical and concrete way the difference between the two things, in that the members were dealing with knowledge and experience on which the profession had common grounds of agreement In psycho-

THE
SCIENTIFIC AND INDUSTRIAL PROBLEMS PRESENTED BY THE HORMONES.

A joint meeting of the Biochemical Society with the London Section of the Society of Chemical Industry was held on July 20th, Sir Alfred Mond, M.P., occupying the chair.

The Chairman, in his introductory remarks, referred to the hormones as the natural drugs of the body and said that the part played by these agents in the body had certain analogies with that played by the vitamins in the assimilation of food. He referred to the prominence of British workers in the scientific investigation of the hormones and in the manufacture and control of insulin, and quoted a statement made by a German scientist to the effect that British insulin was the most reliable product on the market. He emphasised the interconnexion between all forms of science and said that the fact that a division into sub-branches was a necessity should not blind us to the fact that science was an indivisible whole. Success could only be achieved by coöperation between industrial and laboratory workers. In the absence of this cooperation one or other must eventually suffer. There was, he thought, a modern tendency to ignore the fact that fundamental advances were always made by the thinker and inventor rather than through commercial enterprise.

Dr. H. H. Dale read a paper on the

Experimental Study and Use of the Hormones.

He began by a general review of the recent developments in the science and practice of the treatment of disease. Amongst the most important of these was the discovery of the hormones and their use, both in the treatment of disease and in the maintenance of normal health and development.

Suprarenal Gland.—Dr. Dale gave a brief account of the discovery of the active principle of the suprarenal gland and of its mode of action. This, he said, closely resembled the effects on the different organs of the skin and viscera produced by the nerves of the true sympathetic system. In every direction the visceral reactions were such as to prepare the organism for combat or flight. In addition to this emergency function, the constant presence of traces of this hormone in the blood was necessary for the maintenance of healthy tone in the peripheral blood vessels and therewith of an adequate supply of well-regulated nourishment to the tissues. In therapeutics apart from its action in relaxing the bronchioles in spasmodic asthma adrenalin was mainly used in surgery for its local vaso-constricting action. Adrenalin was the first of the hormones to be separated in a state of purity. It proved to be a relatively simple aromatic amine, difficult to work with only on account of its ready oxidation. Its synthesis soon followed. The problem of its origin in the body, however, still remained to be solved.

Dr. Dale then referred to the functions of the suprarenal cortex of which he said little was known beyond the fact that its activity was in some way connected with the development of sexual maturity.

The *thyroid gland* furnished the earliest and most successful example of treatment by administration of a missing hormone. Long before the identification of the active principle it was recognised that absence of the gland or defect of its secretion led to retardation of oxidative metabolism, with resulting myxœdema or cretinism. The activity of the gland was also known to be roughly proportional to its iodine content, but it was not until about ten years ago that the active iodine containing hormone was first isolated in pure crystalline form by Kendall in America, and named by him "thyroxine." Recent investigations by Dr. Harington had shown the way to its preparation in practicable quantities.

Dr. Dale briefly described the properties of thyroxine, which, he said, was an intensely active substance, with an action which, in contrast to adrenalin was slow in developing, but persisted for some time. The intravenous injection of 10 mg. of thyroxine would raise the metabolism of an individual 45 per cent. above the normal rate by the fifth day. The effect did not subside completely for a fortnight.

Pituitrin, insulin, and secretin were either protein derivatives or closely associated with them; they were therefore sensitive to the action of proteolytic enzymes and were rapidly destroyed by autolytic enzymes appearing in the glands containing them immediately after the death of the animal. For the same reason, unlike thyroxine, they had little action when given by the mouth.

The *pituitary gland* consisted of two portions, the anterior and posterior, with different morphological origins and functions. The active constituents of the anterior lobe had not yet been separated. The posterior lobe yielded an extract with a powerful vaso-constrictor action; it also acted on the muscle of the uterus and hence was invaluable in obstetrics. The commercial preparation of the drug was relatively simple, provided the material was fresh, as an extract of high potency could be obtained by simple extraction with boiling acidified water. The separation of the active principles of the posterior pituitary, in order to study their chemical nature, presented many problems of extraordinary difficulty, largely owing to the enormous quantity of the raw material which was required to obtain an adequate quantity for such work.

Pancreas and Insulin.—Dr. Dale went on to discuss the possible causes for the failure of all the earlier attempts to separate the active principle of the pancreas. He attributed this failure partly to the difficulty in removing the insulin from the destructive influence of the pancreatic trypsin, and partly to the probable presence in the pancreas of other principles having an antagonistic action and therefore needing elimination. Another factor was probably the ease with which the insulin falls out of solution at a reaction of pH 5. Insulin could now, he said, be obtained in a state of relative purity and intense activity. Prof. Abel, of Baltimore, claimed to have isolated insulin as a pure crystalline substance, but it was as yet too early for final judgment of this claim. The separation of insulin had already thrown a flood of new light on the intermediary metabolism of the carbohydrates, and on the inter relation between insulin on the one hand, and adrenalin, pituitrin, and thyroxine on the other.

Biological Standardisation.—Dr. Dale then referred to the necessity for accurate dosage, and mentioned the disastrous results of a lack of uniformity in biological standardisation, emphasising the necessity for adoption of internationally valid units both for pituitrin and insulin.

Dr. Dale in conclusion said that coöperation was not only essential between the manufacturer and the laboratory worker, but also between the workers themselves, and he asked whether competition was really inseparable from industry in matters of this kind. As an instance he quoted the manufacture of parathyroid. There was, he said, not more than enough material in the country to keep one small manufacturing laboratory going; it therefore did not seem worth while to split up the limited amount of raw material at our disposal, as this was uneconomical and merely meant that in the long run we should have to procure our supplies from abroad.

Dr. H. W. Dudley read a paper on the

Chemistry of the Pituitary Gland and of Insulin.

He dealt first with the practical difficulties encountered in the attempts to isolate these principles. In the first place there was the cost of the raw material which was almost prohibitive to the acquisition of adequate quantities. He calculated that in order to

Dr J W Bone objected to instructing the Council to issue statements under hypothetical circumstances

Dr Livingston's amendment was carried as an amendment, but when put as a substantive motion was lost

Appeal from the Decision of the G M C

Dr C L Morgan proposed, on behalf of Hastings.

> That in the opinion of the Representative Body, if and when the status, constitution and disciplinary powers of the General Medical Council come under consideration for amendment, the Council should take all possible steps to have provided the opportunity for an appeal being made to the courts from any disciplinary decision of the General Medical Council

He said that if the powers of the G M C were to be reviewed it was the time for the Council to consider the matter of appeals Hastings thought that miscarriages of justice might occur and that there should be some appeal

Dr C G H Morse proposed an amendment by Bournemouth

> That the Council of the Association be instructed to take the necessary steps for securing such amendment of the Medical Acts as shall provide for a right of appeal from the decisions of the General Medical Council (say, for example, the Judicial Committee of the Privy Council, sitting with Medical Assessors) when such body acts in a judicial capacity in cases of alleged "conduct infamous in a professional respect"

He drew attention to the fact that two separate divisions had come independently to the decision that there should be some appeal; it was merely the right of any British citizen His division had little doubt that the right decision was nearly always arrived at, but those who read the reports would feel that miscarriages did occur There had been sufficient evidence in the last half year that the G M C did not hold the confidence of the public nor of the profession as it ought to If there were a court of appeal which upheld the decisions of the G M C its prestige would be enormously increased Since the G M C was established, with that blunderbuss accusation of "infamous conduct," things had profoundly changed With the National Health Insurance Act and the Dangerous Drugs Act practitioners had come much more into the public eye and under public control, and into increased danger of accusations He did not think that the right to appeal would be abused, the man who would appeal would be the decent fellow who had made some little slip and who felt justice had not been done, the rotter, who did not wish to conform, would not lodge an appeal There was no reason why the G M C should be wholly medical, although it was preponderantly so The appeal suggested was on points of law, but could not be to the ordinary courts, there must be one or two medical assessors sitting with the judge

The Chairman suggested that members of the General Medical Council who were present should tell the meeting exactly what happened when penal cases came before that body and the deliberations were conducted in camera for a time

Later, Sir Jenner Verrall said that it was curious that the phrase "infamous conduct in a professional respect," which had aroused so much criticism, had been perpetuated in the most recent development of professional judicature—the Medical Act of Queensland He did not think it right for him to express any opinion on the motion, but hoped that, if any court of appeal was pressed for, it would include medical men No profession was so difficult to understand as the medical, and he suggested strongly that the General Medical Council was quite as capable as an ordinary jury of deciding medical questions Ordinary appeal law laid it down that the appeal should be decided by one judge, he thought it would be most unwise, unfortunate, and dangerous to submit medical matters to such an eventuality

Dr J A Macdonald said that after 15 years of experience of the General Medical Council and of the extraordinary care with which cases were considered, he felt sure that the profession could not be in better hands

Sir Robert Bolam said that he had gone to the G M C with a superficially-formed idea that he would enter as a young and ardent spirit to a collection of old fogies, he had found nothing of the sort In the chair was one of the acutest minds in the profession, a successor of equally eminent minds, surrounded by men of widely differing temperaments, grades of opinion and experience; by no means mere academicians He did not know what the complaint was, if it was that the G M C were too severe he would remind them that it consisted of men who had trained generations of medical students and had experience of their difficulties Most of the members were nominated by the bodies which examined and licensed the profession Why was a change desired? He urged the meeting to think very seriously before plunging into the maelstrom of Parliamentary procedure

Mr W E Hempson, the solicitor, in reply to a number of questions, said that the procedure of the Council was peculiar to itself; evidence was in the form of statutory declarations The deposers had to swear, or declare solemnly and sincerely, that the matter in these declarations had been proved The respondent had the advantage in that he was not compelled to answer the charges on oath, or indeed in any form at all The speaker objected to the terms "prosecution," "defendant," &c, which were so often used The words should be "inquiry," "complainant," "respondent" The Penal Cases Committee sifted the evidence before the cases were heard, and acted as a kind of Grand Jury

The Chairman, in reply to a question, said that of course if appeal were allowed it would cut both ways and the complainant could also appeal

Dr Radcliffe asked whether it would be possible for an appeal court to impose a monetary or other penalty beyond the only penalty of the G M C—removal from the Register

Sir Jenner Verrall replied that appeal would probably only be a question of rehearing, but it would of course depend on the nature of the tribunal set up

It was finally agreed to pass to the next business

Dr J W Bone, opposing a motion by Willesden,

> That the Representative Body is of opinion that the time has arrived when the Medical Acts should be amended so as to provide for a larger direct representation of registered medical practitioners on the General Medical Council, and that it be an instruction to the Council to take all possible steps with a view to bringing this into effect,

said that the Medico-Political Committee had gone into the matter fully and had decided that any attempt to alter the constitution would arouse the opposition of the Privy Council, Parliament, and the public The General Medical Council was always being stigmatised as too powerful, and any disturbance of its present form would arouse an agitation which would result in the whole thing going into the melting-pot, with a risk of the profession losing the privilege of disciplining its own members

The motion was rejected

Minimum Salaries for Public Health Medical Officers

In moving the recommendation of Council

> That the Representative Body strongly urges all divisions and branches in England and Wales which have not already adopted a resolution under their ethical rules in relation to the scale of minimum commencing salaries for public health medical officers to take steps forthwith for the adoption of such a resolution,

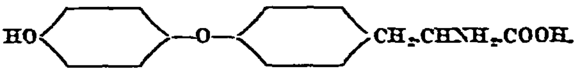
Dr R Langdon Down said that it was much better for a division to adopt a principle before a concrete case arose, as it was then in a much stronger position in expressing disapproval

The recommendation and the remainder of the annual report under "Medical Ethics" was approved

During the day it was announced that Dr H B Brackenbury and Dr C O Hawthorne had been returned unopposed as Chairman and Deputy-Chairman respectively of the Representative Body

(To be continued)

$C_{15}H_{11}O_4NI_4$. He established the constitution of desiodothyroxin by degradation and by synthesis as



Of this substance thyroxine is a tetra-iodo substitution derivative; the position of the four iodine atoms has not been ascertained.

Prof Barger showed lantern slides to illustrate the effects of the administration of small quantities of thyroxine to cases of myxœdema and to cretins He also showed photographs of a completely thyroidectomised cat, surrounded by white mice, to illustrate the complete apathy induced by this condition.

Dr J. W. Trevan's paper on the Biological Assay of Hormones was not reached on the programme.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Cryptotoxins

VINCENT has been engaged in studying the neutralisation of tetanic and other toxins by sodium salts of the fatty acids, such as oleic, margaric and palmitic acid He finds that these salts especially sodium palmitate combine with the toxin and render it harmless. He has worked with the toxins of tetanus, diphtheria, typhoid, dysentery, and other affections. The quantity of sodium palmitate required for neutralisation is minute, 1/100 mg neutralising 100 lethal doses. Sodium palmitate forms a very stable combination with the toxins, which are not merely adsorbed The toxins are not destroyed by combination, but may be released by careful titration with an acid (HCl) The term cryptotoxin has been coined for these new substances. They produce a certain degree of immunity when repeatedly injected. The palmitate of sodium is said to be not only antitoxic in the way described but bactericidal for bacilli of cholera typhoid diphtheria, dysentery and for many other bacteria.

Death of Teissier.

The Faculte de Medecine sustains a severe loss in the death of Joseph Teissier, well known for his work in pathology, general medicine, and infectious diseases He was chief at the Claude Bernard Hospital at Paris which is devoted to the isolation and study of contagious diseases. Exacting and thorough as a teacher, Teissier impressed all who came in contact with him as a profound and perfectly independent student. He was a clinician par excellence. His students will remember his bedside demonstrations with appreciation and he leaves at the Faculte, a place which will be difficult to fill

An Anæsthetic Mixture

Desgouttes and Ricard, of Lyons, find that a mixture of ten parts ether, seven parts chloroform and three parts ethyl chloride is admirable for general anæsthesia when given with a closed apparatus, such as the Ombredanne mask. It must be given in large quantities if administered by the open method. With the Ombredanne mask, 30 g of the mixture suffices for 35 to 40 minutes The index on the mask should be gradually moved up, to reach 5 or 6 in about ten minutes. It should rarely be moved higher than 6 The anæsthesia so produced is tranquil and undisturbed, the post-anæsthetic stage passes off with but little vomiting and pulmonary complications are minimal

Immigration and Disease.

The General Council of the Seine has referred a Bill to its Third Committee proposing health examinations of all persons filing naturalisation papers in France. This proposal does not go very far towards relieving the French hospitals of their burdens, for relatively few of the foreigners cared for are naturalised or have any idea of seeking French citizenship. The problem is a vexed one, for large cities in any country must care for the sick poor of whatever nationality. The establishment of a strict sanitary frontier would be far more effective than the insufficient provision mentioned above.

Resolutions against Alcoholism.

Prof M. Labbé has presented to the Academie de Médecine the results of exhaustive studies made by him on the abuse of alcoholic beverages in France. The Academie after considering Labbe's report, has forwarded resolutions to the French Government, which demand stricter regulation of alcoholic beverages control of absinthe and its substitutes reduction of the privileges now granted to wine and liquor producers encouragement of the use of non-fermented grape and fruit juices, and a campaign of popular education

The Paris Municipal Council has just reported favourably upon a resolution to provide financial aid for hospital interns affected with tuberculosis French interns are employed by the Assistance Publique, and are therefore Government employees.

Legislation is being prepared for active suppression of small-pox in France. It refers to more frequent revaccination, and includes rigid regulations for either vaccinating or exacting proof of an effective vaccination from all foreigners entering France.

A post-graduate course in dermatology will be held at the Hôpital St. Louis, Paris under the direction of Prof. M Jeanselme, from Oct. 4th–30th, and a course in venereal disease from Nov 3rd to 27th Particulars may be had from Dr. Burnier at the hospital

A new Cancer Institute at Paris is to be erected on a site at Villejuif one of the suburbs of Paris and will be directed by Prof. Roussy.

On July 4th a meeting in honour of the memory of Thomas Jonnesco was held at the Faculte de Medecine. Jonnesco was formerly prosector at the University of Paris, and Levaditi was one of his pupils.

The Services.

ROYAL ARMY MEDICAL CORPS

THE undermentioned Cols., late R.A.M.C to be Maj-Gens.: H P. W Barrow, and to be supernumerary: D Harvey, and to be supernumerary: and J S Gallie vice Maj-Gen. J. R McMunn, to ret. pay.

Lt.-Col. E P. Sewell, from R.A.M C., to be Col., to complete estabt

Lt.-Col. A. E. Hamerton to be Bt. Col.

The undermentioned Majs to be Lt-Cols.: N E Dunkerton vice Lt.-Col. O W. A. Elsner, to ret. pay, and Bt. Lt.-Col. P. J. Hanafin vice Lt.-Col W A. Woodside, to ret. pay.

TERRITORIAL ARMY.

2nd Lt. J G Morgan (late Tank Corps) and J. H. Donnelly to be Lts

INDIAN MEDICAL SERVICE.

Col. F H. G Hutchinson to be Maj-Gen.

Capts W. P. Hogg, Vaman Raghunath Mirajkar and Mohamed Mossa Khan to be Majs.

The King has approved the grading as Captain of G. H. Fitzgerald.

Wajid Ali Khan to be Temp Lt.

WEST AFRICAN MEDICAL STAFF.

Dr M B. Hay has been appointed to be a Senior Sanitary Officer in the West African Medical Staff, for service in the Gold Coast as an addition to the establishment.

prepare 100 gr. of the pure active principle of the posterior lobe of the pituitary, it would be necessary to work up material from 1,000,000 oxen. In the case of insulin the same situation prevailed, although the raw material was more easily available. On turning to the chemical investigation of these substances, difficulties arose owing to their extreme complexity and instability.

Pituitary Hormones.—By treating the posterior lobe of the pituitary with faintly acidulated boiling water a filtrate could be obtained which contained substances which made plain muscle contract, and which caused a rise in blood pressure. The question as to whether these effects were produced by one hormone or by two was as yet undecided, but Dr. Dudley inclined to the view that there were two active substances with a very similar chemical constitution. The plain muscle-stimulating substance had the following properties: it was destroyed by boiling with strong mineral acids and rapidly inactivated by dilute alkali; this led to the view that it might be an ester. It was not destroyed by pepsin, but was destroyed by trypsin, which led to the belief that it might contain the peptide linkage characteristic of proteins; this view was strengthened by the fact that it was not inactivated by the ester splitting enzyme lipase. The literature contained records of crystalline salts having been prepared, but these observations had not been substantiated. Probably an apparently pure crystalline substance could adsorb a sufficient quantity of hormone to render it physiologically active.

Insulin.—This substance was prepared by extraction with aqueous alcohol which precipitated most of the protein, higher concentrations of alcohol finally precipitating the crude insulin. This could be further purified by various methods, a convenient one being the precipitation of insulin as an insoluble picrate, which can then be converted into a soluble hydrochloride. Such preparations, though very potent, were by no means chemically pure. They gave many of the usual protein reactions and contained from 12 to 15 per cent. of total nitrogen. They also contained organically bound sulphur, but so far this sulphur content had not been correlated with the physiological activity. Recently Prof. Abel had suggested that a portion of the total sulphur was actually an index of the physiologically active hormone present. He had also announced the preparation of a crystalline substance which he considered to be pure insulin. Dr. Dudley concluded that the properties of insulin were all in keeping with the view that it was a protein-like substance, or, at any rate, a substance associated with a protein fraction in such a way that hydrolysis of the protein inactivated the insulin.

Mr. F. H. CARR read a paper on the

Commercial Production of Hormones.

He first discussed the preparation of insulin in all its stages. The collection of the raw material was a most important point. The pancreas, immediately after excision from the animal, was trimmed to remove all other tissue, and it was then quickly frozen. This was done by placing the glands in thin layers in a room of which the temperature was −5°, or colder. Rapid freezing was procured by circulation of cold air. He described the means by which this was done, the air being dried at the same time by means of calcium chloride. The raw material was then rendered acid in order to stabilise it; this was done by a method of grinding with continuous incorporation of acid and alcohol. As the grinding could not be done without the generation of heat, special methods had to be employed, by which the grinding was done in two stages, between the first and second of which alcohol was incorporated. The final result of this stage was a fairly stable product containing 65 per cent. of alcohol and having an acidity of pH 3.5. Filtration and clarification were then carried out. The next stage was that of concentration. Here again time was an important factor, and the method of vacuum evaporation had proved the most satisfactory. The insulin was then purified by fractional separation by precipitation with alcohol or other protein precipitant. Purified insulin was insoluble in water at pH 5, but was relatively soluble at this point when other associated proteins were present. Insulin was also precipitated by half saturation with ammonium sulphate at all reactions, but the purification of the mixture of albumoses so obtained was difficult. The ultimate purification of insulin was done by precipitation with picric acid and subsequent regeneration as the hydrochloride as suggested by Dr. Dudley. In large scale operations there was always a loss of insulin during the various stages, and determinations of pH, alcohol percentages, and blood-sugar reducing power must be made from time to time in order to insure success. Mr. Carr then described briefly the preparation of thyroxine, which was done by Harington's recently published method. This consisted in hydrolysing the gland in two stages, first with 10 per cent. and then with 40 per cent. baryta water; the gland was then further treated with aqueous caustic soda for 15 minutes. The two liquids so produced were boiled with strong baryta for 18 hours, leaving an insoluble precipitate of a barium compound of thyroxine. The same precautions should be used in collecting and storing the gland, as were indicated above for when discussing the pancreas. The advantages of thyroxine were the ease with which its purity could be determined and the accuracy of the dosage.

Dr. H. A. D. JOWETT read a paper on the

History of Adrenalin.

He said that adrenalin was up to the present the only hormone whose chemical constitution had been finally established beyond all doubt by its synthetic production. The medical and physiological importance of the suprarenal glands was realised by Addison in 1849, but it was not until 45 years later, in 1894, that Oliver and Schafer observed the rise of blood pressure resulting from intravenous injection of suprarenal extracts. As a result of this discovery suprarenal extracts then began to be used as hæmostatic agents. Successful isolation of the hormone was accomplished by Takamine in 1901, the active principle, which he named adrenalin, being precipitated by the use of a large quantity of strong ammonia. The formula was determined in 1901 by Aldrich. In 1903 Pauly confirmed this formula and found that adrenalin was optically active, and in 1904 Jowett finally established the constitutional formula. Synthetic production of the base in 1903 was accomplished by Stolz from catechol. The resulting adrenalin was optically inactive. The next step was then to resolve the synthetic racemic adrenalin into its optical isomers; this was effected by Plack in 1908. It appeared that *d*-adrenalin was not entirely inactive, but the ratio of the activity between the *d* and *l* isomers was 1–15. The synthetic process had now been worked out on the commercial scale, and synthetic adrenalin was sold under the name of suprarenin synthetic. A considerable amount of work had been done on allied problems, and methods for determination and detection of adrenalin had been worked out. Other methods of synthesis had also been tried. In conclusion, Dr. Jowett said that very little was known as to the way in which the suprarenal gland synthesised adrenalin, but that the working out of the constitution of the hormone paved the way for an attack on this problem.

Prof. G. BARGER read a paper on

Recent Progress in the Chemistry of Thyroxine.

Thyroxine, he said, is a crystalline active principle of the thyroid gland, first isolated by E. C. Kendall.[1] The method of isolation was recently enormously improved by Harington,[2] who obtained a yield more than 20 times that of Kendall. Harington further showed that the substance has not the formula $C_{11}H_{10}O_3NI_3$ attributed to it by Kendall, but

---

[1] Jour. Biol. Chem., 1919, xxxix., 125.

[2] Biochem. Jour., 1926, xx., 293.

Correspondence.

"Audi alteram partem."

THE R S M AND BIBLIOGRAPHIES

To the Editor of THE LANCET.

SIR —I have received notice from the Royal Society of Medicine that the library staff will in future provide references and bibliographies on request from any Fellow The reason for this arrangement is doubtless that practitioners and provincials cannot find time to visit the library, but can read books forwarded to their homes To object to authors being content to accept references at second-hand is perhaps over-scrupulous, and possibly medical literature would not suffer from the arrangement provided the authors actually read the articles in the lists supplied The arrangement lends itself however only too easily to the practice of spuriously embellishing articles with references which the writers have not taken the trouble to verify and read critically themselves Many who have examined literature must have suffered from such meretricious adornment of articles, particularly in American journals; and in America the arrangement is common Surely any advantage likely to accrue to British medical literature from the arrangement cannot counterbalance the exposure to this abuse

I am Sir, yours faithfully,

London, July 14th, 1926 HUBERT M. TURNBULL.

NON-SPECIFIC PROTEIN INJECTIONS IN CHRONIC ARTHRITIS

To the Editor of THE LANCET.

SIR,—Dr M B Ray's comments in THE LANCET of July 17th upon this subject are of great interest, and his reasoned explanation of the cause of arthritis and the rationale of its relief is very instructive Our views though not identical, have much in common It is agreed that the fault lies partly in imperfect breaking down of chemical substances by the cells and the consequent presence of irritating intermediate products in the fluids of the body. The abnormal products can be destroyed by increasing the oxidative power of the cells, and in this fever plays an active part Faults of elimination through the skin are too important to be ignored, it is to delayed correction of skin lethargy that the familiar "bath reaction" of which Dr Ray speaks is due When the inertia of the skin is overcome and adequate sweating is produced this reaction disappears

I am, Sir yours faithfully,

London, W, July 17th, 1926 C E SUNDELL

HEART DISEASE AND EPILEPSY

To the Editor of THE LANCET

SIR,—To THE LANCET of July 10th Dr Moon contributed an interesting and suggestive note on this subject Obviously he is not aiming at treating it exhaustively as he makes no mention of the association between paroxysmal tachycardia and epilepsy, of which his wide clinical experience must have afforded examples—relatively rare as is this association It has been of interest to me since the year 1903, when I published notes of a case in Vol XXI of the *Transactions* of the Royal Academy of Medicine in Ireland In brief, the case was that of a girl, aged 14, with a family history of epilepsy, the subject of frequent minor and occasional major fits, and of attacks of paroxysmal tachycardia intermingled, seeming to replace the former At the time I could find no detailed record of this association, merely that paroxysmal tachycardia had been called fancifully "epilepsy of the heart" My next case was that of a gentleman aged 60 whose epilepsy had disappeared for 16 years till convalescent from an operation He was then suddenly seized by paroxysmal tachycardia lasting till I saw him some hours later, when it ceased instantly with "vagus compression" Three days afterwards he had a severe epileptic fit.

From these and other cases which I have observed, or heard of, in which this association was more or less intimate, it would seem that, in a certain group, some common factor underlies both conditions, probably a neurotic one, and that this factor may manifest itself as paroxysmal tachycardia purely. Certain it is that cases of this condition are met with in neuropathic subjects, with a probable family or personal history of fits, who do not develop demonstrable cardiac lesions other than the paroxysmal arrhythmia, and with whom one gets the surer therapeutic results by discounting the heart symptoms and treating as for epilepsy, without suggestive mention of that dread name.

In exemplification of Dr Moon's observation of how well a damaged heart can deal with the strain superimposed by epilepsy, I can recall the case of a gentleman who was under my care for ten years He reached the age of 70 (and may still be alive) despite the fact that from his early twenties he had major fits that never relented in their incidence for longer than a month, and who from boyhood had pronounced aortic regurgitation, evidently produced by some acute, but non-progressive infection.

I am, Sir, yours faithfully,

R TRAVERS SMITH, M D, F R C P. Irel.

London, W, July 16th, 1926.

NEW DANGEROUS DRUGS REGULATIONS.

To the Editor of THE LANCET.

SIR,—In THE LANCET of June 19th attention was drawn to certain proposed new regulations concerning dangerous drugs. At a recent meeting of the Council of the National Medical Union the following resolution, which speaks for itself, was carried unanimously.—

> "That the Council of the National Medical Union, after careful consideration of the whole subject of the proposed new Dangerous Drugs Regulations, takes strong exception (1) to the proposal to set up a tribunal composed of three medical practitioners and one legal assessor to deal with cases of infringement of the regulations, instead of these cases being dealt with, as at present, by the ordinary courts, (2) to the proposal to empower the Home Secretary to withdraw from medical practitioners found guilty by the said tribunal the right to possess and even to prescribe dangerous drugs, such penalty having the effect of making it impossible for such medical practitioners to continue in practice, (3) to the proposal to make the Home Secretary the final authority without right of appeal to the courts of law, which proposal is contrary to the basic principles of British justice, (4) to the proposal to place upon non-dispensing practitioners the obligation of keeping records of their purchased supplies of the dangerous drugs, on the grounds that the properly made out prescription or order, which is retained by the wholesale or retail chemist, contains all necessary information and is sufficient safeguard"

The National Medical Union lodged a strong protest against the new regulations within the time required under the Rules Publication Act, and the Home Office has a statutory duty to consider their objections

The attempt which is being made in various directions to bring the members of our great profession under bureaucratic control must be met at once and resisted to the utmost, otherwise we shall find ourselves before very long as pawns in the hands of incompetent officials and Government inspectors. Evidently the Home Office has found that it has not always been able to secure a conviction when bringing cases before the courts With the new regulations in force no doubt this difficulty would be partly overcome There is no reason why medical practitioners who break the law should be dealt with without proper trial in a court of law. I shall be glad if medical practitioners who are interested in the matter will kindly communicate their views to me.

I am, Sir yours faithfully,

S. G ASKEY,

Hon. Sec of the National Medical Union

11, Chandos-street, Cavendish-square, W, July 19th 1926.

ROSS INSTITUTE AND HOSPITAL FOR TROPICAL DISEASES.

On July 15th the Prince of Wales opened the Institute now established at Putney as a memorial to the work of Sir Ronald Ross and as a centre for research and treatment The appeal for such a memorial was issued in 1923, but the promoters found it by no means easy to secure a suitable building The freehold of Bath House, a modern mansion standing on the edge of Putney Heath, was eventually acquired, and under the scheme of Mr G Berkeley Wills, F R I B A, three research laboratories, two wards, and a library have been installed The house has enough ground of its own to permit further extension if need be, and it overlooks pleasant country

The work of the Institute has already begun Its main purpose will be intensive research into the prevention and treatment of tropical disease, but it will also serve as a propagandist centre for handing on information to workers abroad and for stimulating control work in malaria and other tropical and subtropical diseases Unlike the schools of tropical medicine, the Ross Institute will not be a teaching centre, but medical men home from the tropics will be allowed the use of the laboratories for research

His Royal Highness was received by the Duchess of Portland (the President) and by Sir Charles McLeod (chairman of council), who presented an address of welcome recording the many benefactions received from business houses in all parts of the Empire, from Overseas Governments, and from the general public The proposal to found such an institute, he said, had met with immediate and sympathetic response from leading members of the medical profession in Great Britain, the United States, France, and Italy To continue the work of the Institute in fullest efficiency the committee was appealing for continued support to meet current expenses and also for the creation of an adequate endowment fund

The Prince of Wales, in opening the Institute, said "The opening of this Institute, which I am very glad to perform, commemorates a definite achievement in the work which the British Empire has done for civilisation Not the least important obligation which the development of that Empire has laid on the members of our race is the constant struggle against disease in all the varied forms it can assume in different climates and in different latitudes The struggle is always fiercest in the tropics, where man, and especially the white man, is the continual prey of diseases from which we in this country are, comparatively speaking, protected by a more temperate climate, and perhaps the saddest page in the whole history of our Empire is that which tells of the terrible toll taken by plague and by fever of those who helped to build it

"Of all these tropical enemies, malaria has probably been the most deadly and elusive But now, thanks to the achievement of one man, whose name we are perpetuating in this Ross Institute, its ultimate defeat is certain Only a few months ago I was able to see in the Sir Alfred Jones Laboratory in Sierra Leone not only the vital need for a campaign against malaria but also the remarkable progress which has already been made in it Perhaps I am biased by many visits to tropical and subtropical parts of the world where malaria is rife, and by having talked with so many men and women whose health has been shattered by a life's work in such districts, but I can think of no other single discovery in recent times which will earn the deep gratitude of so many thousands of human beings of all nationalities as the discovery made in India by Major Ronald Ross—as he was then—on August 20th, 1897 The story of its subsequent development and of what it has led to is well known to you all. I need only summarise it in the words of a famous writer 'It is not too much to say that Sir Ronald Ross has made one-third of the world inhabitable'

"Over a quarter of a century has elapsed since that epoch-making discovery, and this Institute and Hospital now stands as a memorial to the life-work of Sir Ronald and his colleagues But it is not merely a passive memorial to work accomplished in the past, it is also, as Sir Charles McLeod has just reminded us, a very active centre for work to be done in the future All who have any experience of the tropics will know that there is still a vast field for scientific medical research, and here, with all the sources that modern science can provide, such research can be effectively carried out, provided adequate funds are forthcoming From this building may issue results which will bring back health to thousands who have lost it, or safeguard the lives of countless others threatened by unseen dangers in tropical lands More than that, it may open out, for the use and benefit of mankind as a whole, huge districts which are at present denied to civilisation

"It is not surprising, therefore, that when the scheme for founding this Institute was first put forward it immediately received widespread public support That support happily made its inception possible, and once the first financial obstacle was surmounted its promoters lost no time in making it a reality To the President, the Duchess of Portland, to Sir Charles McLeod and Mr Shakespeare, and to Sir Ronald and his two co-directors, Sir William Simpson and Dr Castellani, the gratitude of all of us is specially due for the time and energy they have devoted to its execution They and their fellow officers of the Institute may well feel proud of the result of their labours and of the knowledge that they have called into being something which cannot fail to be of incalculable benefit to many generations

"It is with the sincere hope that further public support for the necessary endowment may be forthcoming, and that the labours of those who will work here may be blessed with every success, that I now declare the Ross Institute and Hospital open"

A vote of thanks to the Prince of Wales was proposed by the Duchess of Portland and seconded by Sir Ronald Ross, director-in-chief, who said that the Prince's words would bring vividly before everyone in the British Empire some sense of the terrible loss which malaria inflicted on the world and some idea of the need to overcome it On behalf of his associates he acknowledged the ready and generous assistance given by more than 1000 contributors headed by His Royal Highness, no fewer than 15 tropical dependencies and eight rulers of States had helped Sir Ronald Ross said that he was particularly grateful to the Prince for the kind way in which he had referred to his work, hundreds of workers in the field of tropical medicine had done their bit He himself could only expect to view from afar the promised land of a perfectly sanitated world, but, at least the Institute could be left in the best possible condition for future use as a centre for study and a home of sound research

---

Poplar Hospital for Accidents—Last week the Lord Mayor of London (Sir William Pryke), who was accompanied by the Lady Mayoress and the Sheriffs, opened a new nurses' home, which has cost £30,000, at this hospital The Lord Mayor recalled that the hospital was originally housed, 70 years ago, in the buildings of the old Custom House

Grants for Local Services—According to a statement made by Sir John Utting to the Liverpool Port Sanitary and Hospital Committee, the city will lose £110,000 a year if the Government carry out their proposal to replace the 50 per cent grants for local services by block grants Liverpool is spending £180,000 a year on tuberculosis alone —according to Sir John Utting 50 per cent more than any other municipality The change would involve either an addition of 4*d* to the rates or a curtailment of the tuberculosis work.

HELEN BEATRICE DE RAZTRICKE HANSON, M D, B S LOND, D P H OXF

ANOTHER victim was added to the long list of motor casualties in London streets when, on July 6th, close to her home, Dr Helen Hanson was struck by a passing car and killed almost instantaneously.

Helen Hanson studied medicine at the London (R F H) School of Medicine and was a keen and capable student. After qualifying M B B S Lond in 1901 she held resident posts at the Bristol Children's Hospital, the Morpeth County Asylum, and the St Pancras Infirmary. She then went to India as a medical missionary and was attached to the Kinnaird Hospital, Lucknow, where she was much beloved by patients and colleagues. She was the principal surgeon to the hospital and performed a large number of major operations. The climate affected her health and she was invalided home after three years' service. In 1911 she became assistant medical officer to the L C C, a post to which she returned after a break during the war. To school medical work she devoted great energy, never forgetting that prevention of disease was the object to be arrived at. She took a personal interest in the nurses who worked under her, and was very popular among them, and her care of the children was maternal.

When the war broke out Dr Hanson volunteered at once for foreign service. She went through the siege of Antwerp with Mrs Stobart's unit, and escaped, among the last to leave, on the top of a motor 'bus packed with ammunition. Later she went to Serbia where she was established in a hospital under canvas at Kragujevatz and found again opportunity to do much surgical work. She left Serbia during the summer of 1915, before the last invasion of the country, and returned to England through Russia. Shortly afterwards she became a temporary medical officer in the R A M C and was sent first to Malta and afterwards to Salonica, where she remained till the Armistice. Against the persistent refusal of the authorities to give commissisons to women medical officers, which meant loss of prestige and many real difficulties and disadvantages, Dr Hanson made repeated protest, based on personal experience. Her next move was to Constantinople with the Black Sea Expeditionary Force, where she remained until 1920, when she returned home via Palestine, a journey which was to her full of interest and enjoyment, and stirred her religious feelings deeply.

Dr Hanson was a woman of many and varied interests. It has been said of her that "she had a genius for friendship." Her friends were indeed legion and none was ever forgotten. In her family circle she was a most devoted daughter and sister. Her loss is one which will leave a blank in many lives.

ANDREW RAE [WILBUR] WRIGHT, D S O, M B,

BREVET LIEUT-COL., R A M C

THE death of Lieut-Colonel Wright on June 30th at the comparatively early age of 45 which occurred at the Government General Hospital, Madras from appendicitis has cut short a career of great promise, but it is some consolation to reflect that it was already a career of high achievement.

Born at Wigan in 1881, Colonel Wright was the younger and only surviving brother of Prof William Wright, dean of the London Hospital. He received his professional education at the Owens College, Manchester. After graduation he held amongst other appointments those of house physician at the Manchester Royal Infirmary and senior resident medical officer at the Infirmary Crumpsall. In 1908 he joined the R A M C in which corps the remainder of his life was spent. After the usual preliminary course at Aldershot he was posted to Malta, where he was stationed when war broke out. Attached as regimental medical officer to the 2nd Battalion of the Royal Warwicks, he disembarked at Zeebrugge on Oct 6th, 1914, and took part in the memorable rear-guard action fought by the 7th division around Bruges, Hansbeke, Ghent, Thielt Roulers, and Menin. On Dec 31st he was posted to command C Section of the 21st Field Ambulance, and on April 19th, 1915, to be second in command of No 10 Casualty Clearing Station at Hazebrouck. When it was decided to introduce the practice of pitching C C. stations on open ground without buildings of any kind, the 10th C C S was the first chosen for the experiment, being placed at Rémy siding, near Poperinghe. He remained here for some time serving, as Major-General Sir Anthony Bowlby writes, "with great credit, a most zealous and capable officer, and a first-rate organiser." He was several times mentioned in despatches and was made a Companion of the Distinguished Service Order. Later he served on the staff, occupying various positions. For his services in the rearguard action leading up to the first battle of Ypres he received the decoration of the Belgian Croix de Guerre. At the close of the war he became personal assistant to the Director-General of Medical Services and later acted in a similar capacity to the Adjutant-General, being, we believe, the first officer of the R A M C to hold this position. For his services in these posts he received the rare distinction of being, while still a captain, gazetted Brevet Lieut-Colonel, on promotion to Major. In 1921 Lieut-Colonel Wright proceeded to India, serving on the staff at Simla and later commanding the British Station Hospital at Roorkee. Returning to England in October, 1925, he was posted D A D M S to the British Army on the Rhine, and was one of the last to leave Cologne when the army moved south to Wiesbaden. Early in the present year, however, he returned to India and had just taken up the appointment of Senior Medical Officer at the British Station Hospital Madras, when he was stricken down with appendicitis which proved, unhappily, fatal in the afternoon of June 30th. So passed away one who it is safe to say is and will continue to be mourned by a singularly large number of devoted friends.

The following note from an intimate source will recall "Wilbur" Wright to many of these:—

"A man of commanding presence he filled most doorways through which he entered and gave an impression of strength and power which was still further accentuated by his imperturbable composure. Reserved and seemingly austere on first acquaintance, his manner rapidly thawed when, as so often happened, acquaintance ripened into friendship. Gifted with a sense of humour—forms of leg-pulling particularly in his earlier days were a favourite amusement one of his most successful efforts being commemorated in the nom de corps of Wilbur by which he was almost universally known. Devoted to the army, and punctilious in attending to his duties, he yet found time to become well informed on most subjects and to develop a no mean musical talent. Geniality, modesty, and sympathy were the outstanding features in a very attractive personality. With his natural gifts and varied experiences he seemed destined for positions of still greater influence and honour than those he had already held. It was however, not to be. Death is common, it is all one in the final event of things, but in his prime, who would not mourn for Lycidas?

. . . haec .
Accipe fraterno multum manantia fletu,
Atque in perpetuum frater, ave atque vale"

ARCHIE REITH FRASER, M D ABERD

Dr Archie Reith Fraser, who died on July 10th at Plumstead Cape Province, South Africa aged 36, was educated at the Aberdeen Grammar School and studied medicine at the University where he graduated M B, Ch B in 1914, and immediately took a temporary commission in the R A M C. He was invalided from abroad after Neuve Chapelle and on recovery served at home with the 1st Scottish General Hospital and afterwards at the Scottish Command Venereal Hospital at Robroyston. He acquired a wide and varied experience of venereal work in the

MARSEILLES BRITISH MERCHANT SEAMEN'S HOSPITAL

To the Editor of THE LANCET

SIR,—In 1924 I appealed, through the press of Great Britain, for funds to complete and open the above hospital As a result of the response we were enabled to complete the building, and the hospital is now ready to receive patients A representative of His Majesty's Office of Works recently inspected it and gave a very favourable report both as regards the sums expended and the nature of the work accomplished Provision exists for 60 beds which, as things are at present, is more than sufficient for the needs of the seamen for whom the hospital has been built, and the Executive Committee have, therefore, arranged to take in private patients who may require treatment when passing through Marseilles and whose contributions will materially assist in the cost of maintenance Her late Majesty Queen Alexandra, our patroness, took a keen interest in the hospital In token of our gratitude, and with His Majesty's permission, the Executive Committee have decided to re-name it the Queen Alexandra Memorial Hospital (Marseilles) The building fund is practically exhausted and, while there is no debt, the Committee do not feel justified in actually opening the hospital without a satisfactory balance to meet the initial running expenses They are, therefore appealing for a sum of £5000, and immediately this is forthcoming the hospital will be opened, and, it is hoped and believed, satisfactorily meet a need which has long been felt by the merchant seamen who visit the port of Marseilles as well as by such travellers from the Far East and others for whom there may be accommodation

Subscriptions should be sent to Mr F C Goodenough (chairman, Barclays Bank), Hon Treasurer, Queen Alexandra Hospital (Marseilles), Barclays Bank, 54, Lombard-street, E C 3

I am glad to be able to announce that their Royal Highnesses the Duke and Duchess of York have graciously consented to become patron and patroness of the hospital, and I am authorised to say that this appeal has their warmest sympathy and support

I am, Sir, yours faithfully,
SPENCER S DICKSON,
H B M 's Consul General, Marseilles,
Chairman of the Executive
Committee

July 6th, 1926

⁂ The requirements of seamen in British and foreign ports have often been described in our columns, and we have pleasure in publishing this appeal for an institution which could do excellent work where it is urgently needed —ED L

ALTERATION OF VISION DUE TO BASAL FRACTURE OF SKULL

To the Editor of THE LANCET

SIR,—With reference to Dr Ibotson's suggestion in THE LANCET of July 3rd (p 43) that alteration of vision may follow upon fracture of the base of the skull, it should be borne in mind that it is in just this type of case that the liability exists to implication of the nerve trunks at their exit at the foramina Vision that has previously been apparently normal would, undoubtedly, tend "to be indistinct" on the development of even a relative degree of muscular imbalance from, let us say, a paresis rather than a paralysis of some of the muscles supplied by the third nerve Implication of all the muscles supplied by this nerve is by no means necessary

It should also be borne in mind that vision which before an accident has been described as normal may in reality have been very far from being orthophoric, but may have given no trouble owing to attention never having been directed to the defect, the nature of the patient's occupation, it may be, having made no call on the finer muscular movements The accident, leading to fracture of the base, may in reality have unmasked a latent defect rather than have caused the development of anything new (of course, in the case of a minus defect this is not so likely to occur) In this way an amblyopia discovered after cranial injury may be more easily explained than by postulating an actual distortion of the corneal curves to even so trifling an extent as half a diopter, as in the case cited by Dr Ibotson

I am, Sir, yours faithfully,
Manchester, July 15th, 1926 W J RUTHERFORD

Obituary.

ROBERT HUNTER STEEN, M D , F R C P LOND,

EMERITUS PROFESSOR OF PSYCHOLOGICAL MEDICINE, KING'S COLLEGE

WE much regret to record the death of Dr Robert Hunter Steen, the well-known psychiatrist, who died at Bexhill on July 12th, aged 56

Robert Hunter Steen was born in Belfast in 1870 the son of Dr Robert Steen, Ph D , and was educated at the Royal Belfast Academical Institution and Queen's University, Belfast His medical education was obtained at St Mary's Hospital, and in 1894 he graduated with honours as M B London He was house physician at his hospital, and afterwards at the Brompton Hospital for Consumption, when, having decided to take up the specialty of mental disease, he became assistant medical officer at "The Priory," Roehampton He held the post of assistant also at the West Riding Asylum, Wakefield, and at the West Sussex County Asylum, Chichester, and in 1905 was appointed medical superintendent of the City of London Mental Hospital at Dartford Here the admirable work which he did is familiar not only to his more immediate colleagues, but to all interested in psychological medicine Four years later he became professor of psychological medicine at King's College and at the time of his death, having retired from Dartford, he held the emeritus professorship

Dr Steen took the M R C P Lond in 1913 and obtained the F R C P eight years later, and during his period of office at Dartford wrote much on various aspects of asylum work and mental diseases Among those contributions to scientific literature may be mentioned papers on exophthalmic goitre, on moral insanity, on dementia præcox, on hallucinations in the sane, and on chronic hallucinatory psychosis, all the latter papers being contributed to the *Journal of Mental Science* The last essay showed very well Steen's learning as derived from actual experience and sound methods of thought The work was based upon a series of cases in which the presence of hallucinations was the principal symptom, and some of the cases could be classed as melancholia, while the development of delusion of persecution might in others lead to a provisional diagnosis of paranoia, and yet others might be classified as dementia præcox In the face of the confusion of category and nomenclature, which was greater then than now, Steen set out to show that there were hallucinatory cases which could be grouped together on a well-defined clinical entity Throughout his discussion of the differential diagnosis he recognised the difficulties of classification in the way that is now leading to a much better clinical understanding of mental symptomatology, while he prophesied that the multiplication of special out-patient departments at large hospitals, by familiarising more observers with psychological patients, would greatly improve the treatment of early disease, and that psycho-analysis would prove of service

Psychological medicine has lost in Steen a valuable thinker and worker He was a keen exponent of humane methods and spared no pains in the abolition of all that savoured of prison in the treatment of the insane, keeping the ideal of the mental hospital steadily before him, and before a large public was discussed by Colonel Lister and Colonel Coppinger, Mr Zorab, Mr. Harrison Butler, Mr Walker, Mr Coulter, and Mr Jaques

On the morning of Saturday Dr T. S Good, medical superintendent of the Oxford City and County Mental Hospital, read a paper entitled Psychology and the Eye, in which he gave details of cases where the relief of trouble caused by refraction error had had a marked effect in clearing up mental disturbances and of other cases in which no result was obtained although eye symptoms were prominent in these, but without abnormality in the eyes themselves

Mr Harrison Butler followed with an instructive paper on the signs of inflammation in the eye when examined by the slit-lamp The proceedings of the meeting concluded with a paper by Dr Margaret Dobson on the macular region as seen by red-free light Some interesting drawings of the appearance presented by the macula in both normal and diseased conditions were shown and revealed changes which could not be easily detected by other means

The annual dinner took place on the evening of July 15th in Keble College, amongst the guests being Sir Archibald Garrod and Prof J A. Gunn

Medical News.

UNIVERSITY OF OXFORD —The Theodore Williams Scholarship in Anatomy has been divided between Mr G H Bateman and Mr J H B Beal (both of University College) Mr H A Mansell (Pembroke) has been elected to the Theodore Williams Scholarship in Pathology

UNIVERSITY OF CAMBRIDGE —The following candidates have now satisfied the examiners in both parts of the examination for the Diploma in Tropical Medicine and Hygiene —

Herbert M Ayres, James L Dunlop Bandi Ethirajulu, Neil E Goldsworthy, Riad Abdel Noor Henein *Farid Hilmy, Wasfy Omar, *Trilok Chand Puri, Francis C Tibbs, and *Abdul Wahid el Wakil

* Distinguished in the examination for Part II.

At recent examinations for the Diploma in Medical Radiology and Electrology the following candidates were successful —

Part I—I Arons, Frances Dooley, H Franklyn, L Freeman, H M Grey, Elsie H Parker, and Constance A P Wood

Part II—I Arons A E I Connolly J D Dhruv, A C Dixon, H H Elliot Mollie Fisher H Franklyn Margery Freeborough H J Louw, P J McKenna, Elsie H Parker R Phillips S J Rom A C Rusack, J O P Smith, H T Stack, J G Stephens, and Constance A. P Wood.

UNIVERSITY OF EDINBURGH —The following candidates have passed the Final Examination for degrees of M B , Ch B —

Ashley G Abraham Katharine H Aitchison John B Allan, Arthur M Anderson, David Anderson Frederick P M. Anderson, Hyman E. Bernstein William W Besson, Lucia L C Black Philip W H Bleasdale, Abraham Bortz, Irene Bott, George S Broadbent George Brown, Mary A. Buchanan, George R. Burnett William D Cairns, Robert A. Cameron, John Campbell, Sine Kirstine Carlsen, Eric L Carter, John A. Chapel, James B Cherry, Robert Cormack David K. Crawford, Edith E. Cromb, Harold T Crossley, Lillie S Dickson, Maurice B D Dixey, George S N Dow, David C Dunlop Derrick M Dunlop Annie C Easterbrook, James A Elliot, Dorothy Ellison Robert Everett Isabelle B S Flett Arthur D Frazer Patrick C Garson, Anne Gibson Hubert J Gibson, Robert S Gilchrist, James C Gilroy Frank O Graham, James D A. Gray, Evelyn F Hartley, Vincent L P Hayes, Lillian A Hayward James R. Henderson, Muriel G Henderson, William R. Henderson Margaret R. Henry, Jane A Horne Jessie Horne Leonard C Huggins, Margaret H Hunter Jess Marian Ireland Stanley Jackson May Jones (with distinction), Mohamed C M Kaleel Martha Keith Alfred L. Kiow, Pauline Klenerman, John Lamb William L Lamb, Noel A Large, Martha J Lennox, Luke N Liang Julius Lipetz John Litt James L. Lochhead, Maurice L Lucas Robert B Lumsden John Macdonald Cecil T. M'Inerney Donald C Mackenzie, Archibald J M'Kinlay, Margaret I M'Kinlay, William M M'Lellan Margaret G M'Millan Robert L. M'Morris Margaret M'Murray George H Macnab, George R M'Nab James A S Macpherson Saadallah Madwar Samuel Layinka Ayodeji Manuwa Robert M Marshall, Hamish F Masson Aileen E. Mathers David M. W Maxwell (with distinction), William B Millar Gavin W Milroy, James E. Monro (with distinction), Susannah S. Murdoch, Ranald M. Murray-Lyon Honor O Newell Douglas N Nicholson, John S Oliphant Nathaniel Taiwo Olusoga James P D Parsons Andrew Patrick, Kumara Nilkanda Pillai, Neelakanda Palpoo Pillai, Richard E. H Pulipaka William M Quin, Syed Abdur Rahman, Frank M'Lean Richardson Frances A Roberts, John B Rolt, Archibald Ronald, William R. Russell, Vidya Vati Saberwal Simon Tsoi Mook-Sang, John M. Sanson, Richard G A Savage Charles M Scott, William S Shearer, William Simpson, Evan Siung, Angus D. Smith, Francis A. M'C Somerville Michael Stein, Leo J. Stone, Thomas M Strang, Ian N Sutherland, Harry Sweidan Margaret E N Tait, Cyril G K Thompson, Dorothy A. S Thompson, William E Thompson, Violet B Tulloch, Lionel Turiansky, Robert L Turner, Frank Walker, Victor G H Wallace, John H Watson, David Wilkie, Philip M Wood, Thomas V Woods, Harold R. Worth, Helen A. Wright, and David J Young

ROYAL COLLEGE OF SURGEONS OF EDINBURGH — At recent examinations out of 22 candidates entered the following five have passed the Final Professional Dental Examination and have been granted the Diploma L D S R C S Edin —

Margaret Leslie, Kenneth Stewart, Richard V P Campbell, Hugh Linn, and Max Nathan

ROYAL COLLEGE OF SURGEONS OF ENGLAND —At a meeting of the Council held on July 8th the following were elected Hunterian professors for the ensuing collegiate year Sir Arthur Keith (six lectures on Recent Researches carried out in the Museum), Mr Zachary Cope (Shock and Collapse in Acute Abdominal Disease), Mr J. E H Roberts (The Diagnosis and Treatment of Intrathoracic Tumours), Mr E M Cowell (Recent Advances in the Surgery of Hernia), Mr A. H Southam (The Pathology and Treatment of the Retained Testes in Childhood), Mr W B Williams (The Importance of Toxæmia Due to Anaerobic Organisms in Intestinal Obstruction and Peritonitis), and Mr J Howell Evans (Testicular Tumours of Congenital Organs) The following were elected Arris and Gale lecturers Mr R St Leger Brockman (The Cause of Toxæmia and Death in Acute Obstruction), Dr Hildred Carlill (The Simulation of Surgical Affections by Hysteria); and Dr Alfred Piney (Hyperplasia and Neoplasia in Lymphatic Tissue) Mr C E Shattock was elected to the Erasmus Wilson lectureship and will give six demonstrations on pathology Sir Arthur Keith, as Arnott demonstrator, will give six demonstrations on the contents of the Museum. Mr Richard H. Burne was elected physiological curator, Mr C F Beadles pathological curator, and Sir Frank Colyer honorary curator of the Odontological Collection

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION —The Fellowship of Medicine announces that the last of the demonstrations arranged for this session will be given by Mr Dorrell at the Royal Eye Hospital, Southwark on Friday, July 30th, at 3 P M This will be open to members of the medical profession without fee Attention is directed to the formal lectures at the North-East London Post-Graduate College Tottenham which are delivered at 4 30 P M throughout the week and are open to members of the Fellowship of Medicine Subscription to the Fellowship is 10*s* per annum, which includes a copy each month of the *Post-Graduate Medical Journal* A late afternoon course of instruction in neurology will be given at the West End Hospital for Nervous Diseases throughout the week at 5 P M The fee for the course will be £1 1*s* and it will continue until August 12th Owing to unforeseen circumstances the intensive course to be given at the Brompton Hospital for Chest Diseases has been cancelled The entire clinical work of the hospital will, however, be available to graduates daily throughout the month on payment of 1 guinea. From August 18th to 28th the Queen's Hospital for Children will hold an all-day course covering instruction in all departments of the hospital The hospital staff are kindly providing luncheon and tea The Queen Mary's Hospital has arranged an intensive brush-up course from August 23rd to Sept. 4th for the benefit of those who wish to refresh their knowledge in up-to-date hospital practice The Fellowship can accommodate graduates with practical courses in anæsthetics and weekly practical courses in obstetrics and child welfare at the City of London Maternity Hospital The fee for the latter is £2 2*s* a week and personal application must be made at the office of the Fellowship Full particulars and details of the various courses may be had from the Secretary of the Fellowship at 1 Wimpole-street, London, W 1

RESIGNATION OF PROF MATTHEW HAY —The University Court of the University of Aberdeen has accepted with regret the resignation of Prof Matthew Hay from the Chair of Forensic Medicine, and has passed a minute of appreciation of his valued services to the University, extending over the long period of 43 years The minute sets forth the services of Prof Hay "The indebtedness of the whole University to his ability and assiduity both in teaching and administration, to his patience and impartiality, and his sagacity and foresight in the supervision of the finances of the University, cannot be overestimated" army, and in 1920, having taken the M D degree with distinction, he went to Pretoria as a venereal specialist to the Union Government of South Africa. His health soon broke down, but after resigning this post he was appointed university lecturer in venereal diseases at Cape Town. He was intensely keen on this work, and besides a monograph on Gonorrhœa, published a number of papers in the medical journals, all his writings being characterised by originality and clearness of outlook. Those who did not always agree with him could not plead that they did not follow his arguments. He was secretary to the Cape Town branch of the British Medical Association, and Dr Alfred Cox writes: "He was a really brilliant personality and one could not meet him even casually without having a strong impression left. he was a white man all through."

Dr Fraser was also an accomplished artist. He leaves a widow and two daughters.

OXFORD OPHTHALMOLOGICAL CONGRESS.

Under the Mastership of Mr Philip H Adams, the sixteenth meeting of the Oxford Ophthalmological Congress took place at Oxford on July 14th to 17th. No meeting was held last year owing to the Convention of English-speaking Ophthalmological Societies, but with this exception the congress has met annually since its inception in 1910. The membership, which in that year was 181, has steadily increased to 380 at the present time. As in past years, the proceedings took place in the Department of Human Anatomy through the kindness of Prof Arthur Thomson, and members were again indebted to Keble College for hospitality.

The congress was opened on the 15th by a short address of welcome by the Master, followed immediately by a discussion on

Sympathetic Ophthalmia

Mr. Malcolm Hepburn opened the discussion by outlining the history of the treatment of the condition during the past 50 years and comparing this with present-day methods. He said that owing to the dread of sympathetic ophthalmia occurring even many years after the injury, probably many eyes had been excised in the past which might have proved useful. The general trend of opinion now, however, was against the likelihood of sympathetic trouble appearing after a lapse of years, and it was to those cases of cyclitis developing within a few months after the exciting cause that Mr Hepburn directed attention. Not all such cases were of the nature of sympathetic ophthalmia, and some scientific method should be aimed at whereby a cyclitis of sympathetic origin, could be differentiated from one due to other causes. Mr Hepburn suggested that not all eyes which manifest keratitis punctata, even though of sympathetic origin, should be excised, and that many eyes with keratitis punctata following injury or operation should be operated on for the relief of symptoms. He emphasised the value of the differential blood count, a large excess in percentage of the large mononuclear cells with decrease in the polymorphonuclears was a valuable guide in deciding the line of treatment to be taken. Mr. S H Browning presented the bacteriological side of the subject dealing chiefly with the question of the differential blood count. Cases were quoted in which a change in the blood count had preceded any other signs of sympathetic ophthalmia and had determined the line of treatment to be followed. He discussed treatment by arsenic preparations of the "606" type, and also the anaphylactic theory of the disease. Dr. G E de Schweinitz (Philadelphia) followed with a special reference to the work recently done by Verhoeff and presented at the last meeting of the American Ophthalmological Society. Seven cases of sympathetic uveitis were treated by Verhoeff by frequent subcutaneous or intramuscular injections of diphtheria antitoxin in large doses. In four of the seven a remarkable improvement in vision was obtained, but the effectiveness of the treatment was most striking in causing a rapid subsidence of the inflammatory condition. Mr Harrison Butler pointed out the value of the slit-lamp in detecting the earliest signs of the disease and mentioned illustrative cases.—Mr Russ Wood described two cases in each of which the reaction to tuberculin tests was positive.—Prof Emile de Grósz (Budapest) stated that in the past 50 years 150 cases of sympathetic ophthalmia had been treated at the No 1 Eye Hospital at Budapest, making 28 per cent. of the total patients seen. Ten per cent. of these had followed operations, most of which had been performed elsewhere. In his view repeated operations on injured eyes increased the risk of sympathetic trouble. He was convinced that the inflammation was metastatic in nature.—Lieut.-Colonel H Herbert referred to the iris-inclusion operation for glaucoma and the supposed risk of sympathetic ophthalmia.—Mr J Gray Clegg spoke on the occurrence of the trouble after evisceration.—Lieut.-Colonel A E J Lister commented on the rarity of the disease in hot dry climates.—The following also took part: Mr A. F MacCallan, Mr A Greene, Dr Arnold Verrey (Lausanne), Mr T C Summers, Mr R J Coulter, Mr N C Ridley, Mr A. Zorab, and the Master. Mr Hepburn and Mr Browning replied.

Demonstrations in the Scientific Museum

The afternoon was given up to demonstrations in the Scientific Museum. Colonel Herbert demonstrated an iris inclusion operation for glaucoma, Dr G Young showed statistics on ophthalmometry, Colonel Lister presented tables showing the weights of 180 cataractous lenses with details as to patients' weight, age, blood pressure, &c.—Dr Thomson Henderson showed microscopical specimens of the ciliary region in mammalia and demonstrated his apparatus, showing the mechanism of accommodation.—Mr Tomlinson demonstrated his light-sense test for the light-adapted eye.—Lieut.-Colonel W V Coppinger showed (a) a prothesis of crude Indian manufacture which had cut through the lid of the wearer, and (b) prints of the plans of the new Calcutta Eye Hospital.—Dr Burdon Cooper demonstrated Pulfrich's phenomenon and brought forward evidence that the explanation was one connected with accommodation rather than with dark-adaptation.

In an adjoining room the most recent ophthalmic apparatus and instruments were on exhibit by a number of well-known firms.

The Doyne Memorial Lecture.

On Friday morning papers were read by Dr Young on (a) Can an amblyopic eye recover good vision, and (b) a suggestion as to the cause of the invisibility of the retinal vessels and explanation of Purkinje's phenomenon. The former referred to the case of a man of 60 with an amblyopic eye associated with internal strabismus who had lost the vision of the good eye from embolism; the vision of the amblyopic eye improved in a year from less than 6/60ths to 6/6ths. Dr Marion Gilchrist presented some interesting medico-legal cases. The Doyne memorial lecture was delivered by Dr Thomson Henderson, of Nottingham, on the Anatomy and Physiology of Accommodation in Mammalia. Some original theories on the physiology of accommodation were put forward whilst the anatomy of the ciliary region was shown in a valuable series of slides and drawings from various mammalia, including man. At the conclusion of his lecture Dr Henderson was presented with the Doyne memorial medal for the year.

In the afternoon Lieut.-Colonel H Smith presented a review of the various methods of performing intracapsular extraction of cataract and described in detail his own latest method of expression, the outcome of his work during the past winter in India. The paper

STANLEY HOSPITAL, LIVERPOOL.—At the fifty-ninth annual meeting it was stated that during 1925, for the first time in its history, the hospital's income equalled the expenditure There is still, however, a debit balance of over £10,000

A YEAR'S WORK AT GUY'S HOSPITAL —The report for 1925, which has just been issued, contains a mass of interesting and important matter In the department of finance it is pointed out that annual subscriptions and donations are apparently stationary at less than £12,500, about 7½ per cent of the total expenditure, and "a small recognition of the hospital's service to the public" The bicentenary appeal for a capital sum to relieve the hospital and medical school of debt has produced £86,500, considerably more than half of which has come from what may be called domestic sources—governors, medical, surgical, and dental staff, old Guy's men, the administrative staff, Past and Present Nurses' League, and the Ladies' Association The income and expenditure account has been balanced by appropriating £18,200 from the Bicentenary Fund Patients' voluntary contributions amounted to £6000, payments from the Hospital Saving Association on behalf of its working-class members increased from £1690 to £5000 Ordinary expenditure has increased by nearly £10,000 The report records that in no previous year of its history has the hospital "admitted so many patients, relieved so much suffering, or made such advances in the knowledge and treatment of disease" Since 1921 the increase in the number of patients passed through the wards has amounted to more than 1000 a year The cost of each occupied bed was £207 10*s* 6*d*, and since some 400 new out-patients are dealt with every working day the governors will shortly be confronted with the need for reorganising and enlarging the out-patient department The department of deep X ray therapy possesses only one machine, and there is urgent need for two additional installations A nurses' representative council has been established, the members of which are selected by ballot from among the nurses of each year, and some useful reforms have already resulted A more liberal diet has been supplied to the nursing staff There has been no lack of applicants for training as nurses, and they have shown a notable record of success in the State examinations, the whole of the candidates for the certificate of the C M B were successful Sympathetic reference is made to the death of Dr G H Hunt, physician to the hospital, whose work, it is remarked, "had marked him out as a scientific clinician who would some day have ranked among the most distinguished physicians of his time"

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED JULY 10TH, 1926

Notifications —The following cases of infectious disease were notified during the week —Small-pox, 128 (last week 135), scarlet fever, 1374, diphtheria, 853, enteric fever, 85, pneumonia, 590, puerperal fever, 37; cerebro-spinal fever, 9, acute poliomyelitis, 5, acute polio-encephalitis, 1, encephalitis lethargica, 37, dysentery, 20, ophthalmia neonatorum, 115 There were no cases of cholera, plague, or typhus fever notified during the week

Deaths —In the aggregate of great towns, including London, there were 3 (1) deaths from enteric fever, 18 (0) from measles, 6 (0) from scarlet fever, 27 (3) from whooping-cough, 17 (2) from diphtheria, 48 (8) from diarrhœa and enteritis under 2 years of age, and 35 (8) from influenza. The figures in parentheses are those for London itself

THE LANCET SUBSCRIPTION RATES

		£	s	d
INLAND	One Year	£2	2	0
	Six Months	1	1	0
	Three Months	0	10	6
ABROAD	One Year	2	10	0
	Six Months	1	5	0
	Three Months	0	12	6

Subscriptions not paid in advance are charged out at the published price of 1*s* per copy, plus postage Cheques and P O's (crossed "Westminster Bank, Ltd, Covent Garden Branch") should be made payable to THE MANAGER, THE LANCET Offices, 423, Strand, London, W C 2

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

University of London Bill

THE University of London Bill passed the Report stage in the House of Lords on Tuesday, July 13th

Mental Defectives Bill

A new Bill introduced by the Government amending the law with regard to mental defectives was introduced and read a first time in the House of Lords on Thursday, July 15th

The Royal Assent was given to the Bethlem Hospital Act on Thursday, July 15th

HOUSE OF COMMONS

WEDNESDAY, JULY 14TH

Invaliding Tests in the Navy.

Mr **HORE-BELISHA** asked the First Lord of the Admiralty to what causes the Admiralty attributed the fact that 95 per cent of those invalided from His Majesty's Navy were denied pensions on the ground of non-attributability, seeing that every one of these men had passed a severe test of physical fitness on entering the service —Mr **BRIDGEMAN** replied A disability is not regarded as attributable to the service when it is due to ordinary conditions of service such as might equally have arisen had the invalided rating been engaged in a civilian occupation, or when it is due to conditions of health that are normally constitutional in origin Every officer or man is subjected on entry to a thorough physical examination, but from time to time disabilities of an obscure or latent character are bound to escape detection Moreover, the mere passage of time may produce a condition of health which, although it does not necessarily unfit a man for civil occupation renders him unsuited to a fighting service where the highest state of physical fitness is required and his invaliding then becomes necessary I would remind the hon Member that pensions are granted in non-attributable cases where the invalided man has a certain minimum period of service

Physical Tests for Post Office Employees

Captain **GARRO-JONES** asked the Postmaster-General whether there remained any appointments under his control which were not open to ex-Service combatant officers or men on the ground that, though in good health, they had not the physical strength or height necessary to fulfil their duties —Sir W **MITCHELL-THOMSON** replied An ex-Service man is given preference for Post Office employment wherever possible, but it occasionally happens that a candidate does not reach the required standard of physical fitness—modified I may say, in the case of disabled ex-Service men—or is below the minimum height fixed by definite regulations

THURSDAY, JULY 15TH.

THE MIDWIVES AND MATERNITY HOMES BILL

On the order for the consideration of the Lords amendments to the Midwives and Maternity Homes Bill

Lieut -Colonel **FREMANTLE** moved that the House do agree with the Lords amendment to Clause 1 providing that the clause should not apply in the case of a person who while undergoing training with a view to becoming a duly qualified medical practitioner, or a certified midwife, attended a woman in childbirth as a part of a course of practical instruction in midwifery recognised by the General Medical Council or by the Central Midwives Board He explained that this amendment had been inserted as necessary to safeguard the work of medical students under tuition Although they were not qualified men they were doing useful work under proper safeguards in training schools

The Lords amendment was agreed to

Lieut -Colonel **FREMANTLE** moved that the House do agree with the following amendment to Clause 11 inserted in the Lords —

> (1) A local supervising authority may grant exemption from the operation of this part of this Act in respect of (*a*) Any hospital or other premises for the conduct of which a duly qualified medical practitioner resident therein is responsible or (*b*) any hospital or institution not carried on for profit and not used mainly as a maternity home
>
> (2) A local supervising authority may at any time withdraw an exemption granted by it under this section.
>
> (3) Any person who is aggrieved by the refusal of local supervising authority to grant exemption under this section in respect of any hospital premises or institution or by the withdrawal of any such exemption previously granted by the authority may appeal against the refusal or withdrawal to the Minister of Health and the Minister after considering the matter shall give such directions therein as he thinks proper, and the authority shall comply with any directions so given

He said that this amendment was necessary in order to allow certain social welfare institutions which occasionally took in maternity cases incidental to their work to escape

Royal Society of Medicine—Although the society's house will be closed as usual during August for cleaning, the library will be open on week-days from 11 A M to 6 P M, except on Saturdays, when it will close at 1 P M

Victoria University of Manchester — The following awards have been made Sheridan Delepine Fellowship in Preventive Medicine M A Omar, Robert Platt Physiological Scholarship, Cæcilia E M Pugh, Prof Tom Jones Exhibition in Anatomy, Dorothy A Geiler

Trinity College Dublin Post-graduate Course—The School of Physics has completed arrangements for a post-graduate course which will begin on Sept 13th and finish on Oct 2nd Classes will meet in the Medical School of Trinity College and in several of the Dublin hospitals

At the quarterly meeting of the directors of the Naval Medical Compassionate Fund, held on July 6th, Surgeon Vice-Admiral Sir Joseph Chambers, Medical Director-General of the Navy, in the chair, the sum of £55 was distributed among the several applicants

New Hospital for Lyme Regis—The cottage hospital at Lyme Regis, which is in the heart of the town, has long been unsuitable for its purpose, but it has been difficult to replace it The obstacles have now been removed by the generosity of the Rev G F Eyre, who has presented to the hospital the large residence known as Herne Lea

Hospital for Diseases of the Heart and Lungs—The Prudential Assurance Company is providing £3250, the cost of building a laboratory for pathological research work at the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park This is the only hospital in the East End which deals solely with affections of the heart and lungs

The late Dr H Edmondson—Dr Herbert Edmondson, who died at his home at Reedley on July 13th, had practised for nearly 25 years in the Burnley district as an aural and ophthalmic surgeon Educated at Repton, Cambridge and the London Hospital, Dr Edmondson graduated M B, B Ch in 1901 He was honorary ophthalmic and aural surgeon to the Burnley Victoria Hospital and to several other institutions in the neighbourhood

Dinner to Dame Mary Scharlieb—A dinner, organised by the London Association of the Medical Women's Federation, was held at the Welbeck Palace Hotel, on July 15th, in honour of Dame Mary Scharlieb The President, Dr Christine Murrell, regretted the absence of many friends who had been unable to attend at such short notice The health of the principal guest was proposed by her old friend and fellow-student, Dr Jane Walker, who spoke warmly of her personal qualities and professional standing Dame Mary Scharlieb was over 40 years of age before she ever had a scalpel in her hand, and now, at 81, she was still operating with unimpaired judgment and skill Dr W Carr paid tribute not only to the outstanding surgical ability of Dame Mary Scharlieb, but to her high character, without which her other qualifications would have been useless, if not even dangerous All her friends would rejoice at the national recognition of her services, which were the more valuable because love of her fellow-creature had prompted them Lord Riddell pointed out that the British virtues of courage, pertinacity, and ability were combined in her with charm of manner and an unusual and enduring vitality Sir Alan Anderson praised the pioneer spirit that was an inspiration to younger women who were attempting to open up other professions to women Mrs Scharlieb's example and reputation could not fail to help to allay prejudice against women workers in every sphere Lady Barrett, speaking as dean of the London (R F H) School of Medicine for Women, spoke of the pride of all members of the school in the honour that had been conferred on Dame Mary Scharlieb There had been great excitement, and in certain quarters some misgivings, when a previous honour had been paid her—that of being the first woman to be appointed on the staff of any general hospital in this country Dame Mary Scharlieb had soon silenced any doubts by the swiftness and skill of her operative technique, and her unfailing courtesy to the sisters in charge of the wards In reply, Dame Mary Scharlieb said that if life were a quest for happiness, she had discovered how to achieve it, in the love of God and of her friends Among the guests present, other than the speakers, were Sir John Rose Bradford and Sir James Berry

Pensions for Hospital Officers and Nurses—Definite steps have now been taken by 69 of the hospitals in London to start a general contributory system of pensions for hospital officers and nurses on the lines of the draft scheme published by King Edward's Hospital Fund for London in November last It is anticipated that the system will be in operation on or before Jan 1st next

Small-pox and Poor-law Institutions—A circular has been issued by the Ministry of Health drawing the attention of guardians to the need for care in the admission to Poor-law institutions of persons who may be suffering from small-pox Unrecognised cases of this disease, it is stated, have been the means of spreading infection in such places, and attention is drawn to the regulation that before admission every applicant must be examined by the medical officer

A **Committee** has been appointed by the Privy Council to consider whether any modifications are desirable in the Poisons and Pharmacy Acts The members are Mr E Mitchell-Innes, K C (chairman), Mr L G Brock, Sir Malcolm Delevingne, Mr F W Gamble, Sir W Graham Harrison, Sir Donald MacAlister, M D, Mr E T Neathercoat, Mr Colin Smith, Mr G Stubbs, Sir William Willcox, M D, and Mr A E Young The secretaries are Mr M D Perrin, of the Home Office, and Dr E W Adams, of the Ministry of Health

Beit Memorial Fellowships—A senior Fellowship (£600 per annum) has been awarded to Ernest Basil Verney, and fourth-year Fellowships (£400 per annum) to William Kershaw Slater, Harold John Channon, and John Maurice Hardman Campbell The following have been elected to Junior Fellowships (£350 per annum) —

Richard James Lythgoe, M A, B Ch Camb, Sharpey Scholar University College, London, who will investigate the electrical reactions of the optic and auditory nerves

Frank Macfarlane Burnet, M D Melb, temporary assistant, the National Collection of Type Cultures, Lister Institute, London, who will study bacteriophage in relation to the treatment of enteric bacillary infections

John Glover Hugo Frew, M Sc Birm, working at the Research Hospital, Cambridge, who will investigate the physiology of the blow-fly

Maurice Walter Goldblatt, M D, B Sc Belf, working at St Thomas's Hospital, who proposes to continue his study of (1) the relation between ketosis and alkalosis, (2) the fate of the two terminal carbon atoms in the fatty acid chain during the hypothetical β oxidation process, and (3) the rôle of insulin in fat metabolism

James Tutin Irving B A Camb, now junior demonstrator in Biochemical Department, Cambridge, who will undertake research in the Biochemical Department, Oxford, on the metabolism of carbohydrates and allied compounds in the animal body

John Gower Stephens, M B, M S B Sc, Sydney, now working at the Physiological Department, Cambridge, who intends to make a further study of the functions of the spleen by the method of window observation

Barnet Woolf, B A Camb, working at the Sir William Dunn Institute, Cambridge, who will undertake a comparison of some chemical reactions induced by resting bacteria with those induced by animal tissues

Payment of Panel Doctors—The system by which panel practitioners are paid by attendances is confined to the Manchester and Salford areas and to the Isle of Man, all the rest of the country having adopted the capitation system In order to discover whether Manchester doctors want to fall into line, the Manchester Medical (and Panel) Committee has been taking a postal vote of all insurance practitioners, of whom there are about 400 in the Manchester and Salford area The total number of insured persons who now come under the attendance system (in the Manchester, Salford and the Isle of Man) is about half a million, and some 14,000 doctors are in panel practice in the area Insured persons who come under the capitation system in other parts of the country number about 14½ millions In its report the committee discusses the differences between the two systems The amount of money available for distribution is the same, calculated on the number of insured persons in each area Under the attendance system, no doctor working single-handed can receive more than £1125 Under capitation a doctor's list may not exceed 2500 insured persons A large amount of clerical work is entailed by the attendance system, as compared with the capitation system Under the attendance system, the number of services rendered to each insured person in Manchester was 4 38 for 1923, and in all other areas 3 75 for the same year The actual payment per service per insured person in Manchester for 1923, worked out at 1*s* 11*d*, and in some other areas at 2*s* 7*d* As a result of the postal vote Salford insurance practitioners have decided to fall into line with the general rule in the country—i e they have declared themselves in favour of the capitation basis members of the junior division of the Officers' Training Corps from attending camp in the previous year

TUESDAY, JULY 20TH

Public Health in India

The House went into Committee of Supply, Captain FITZROY in the chair.

On a vote of £47,401 for the salaries and expenses of the India Office

Earl WINTERTON, the Under Secretary for India, referred to the decision of the Government of India to extinguish their exports of opium, except for medical and scientific purposes, by progressive annual reductions The Government of India had decided to reduce the exports in ten years, when the process would be complete. The total exports for 1926 would be reduced by 10 per cent in each subsequent year, so that the last export would take place in 1935 The bulk of the recommendations of the Lee Commission with regard to the Civil Service, including those of a financial character, had been implemented. A decision in the case of almost all officers appointed by the Secretary of State in Council had been reached and most of the recommendations of the Government of India and the local governments in respect of officers appointed by them had been received and were being considered The rest were expected shortly All possible steps to expedite a decision were being taken. The Public Services Commission had been appointed and the chairman had already gone to India while the commission would meet on October 1st. The position in regard to recruitment for the Indian Services continued to improve in a satisfactory manner The entries for the Civil Service examination to be held next month showed a total of 183 against 143 last year.

Sir GEOFFREY BUTLER said that there was very much that could be done by British people in this country and in India attached to the Government to help on progress in regard to the various transferred subjects The statement one sometimes heard and the assumption one sometimes encountered that the subjects transferred to the Provincial Governments were inadequately administered was one of which there was no proof But looking at these scientifically transferred services from the point of view of the Indian public, Indian public officials, or scientific experts, no one would contemplate with equanimity the severance or isolation of their activities from the best and most modern Western thought. In the medical, scientific, industrial and agricultural research fields it would be a thousand pities if they found that they had put these transferred services in water-tight compartments Therefore, he would like to know what relation existed between the scientific and technical activities of the Government of India and those of the Provincial Governments What, for example, were the relations between the central officials and the various technical officials in the public health departments of the provinces? Was the central organisation going to fade out of the picture as was the case to some extent at Washington? One could not exaggerate the importance of scientific work in the future development of India. We had won India by the sword, and we wanted to keep her for our commerce, but we must woo her by means of scientific methods India was a paradise for those engaged in scientific research. Anyone who wanted to conduct experiments in botany, physiology, into various forms of disease, and so forth, could not wish for a better field of work. He suggested that facilities should be given in our universities for students from India who came here to take up scientific research.

The Vote was agreed to

Suspension of Meals for School-Children in Scotland.

Mr THOMAS KENNEDY asked the Secretary for Scotland whether he was aware that during the summer holidays, extending over seven weeks, the Clackmannanshire education authority has decided not to continue the provision of meals for necessitous children on the ground that the authority was under no obligation to provide meals except when the children were actually in attendance at school, whether he proposed to sanction this action on the part of local education authorities, and if not, whether he proposed to take any steps to ensure that meals were provided during the vacation.—Sir J GILMOUR replied I have no information at all regarding Clackmannanshire and such information as has reached me regarding Ayrshire suggests that the hon. Member is under a misapprehension as to the decision reached by that authority On the general question however, I may remind him of the legal position as stated in Circular 67, issued under the instructions of my predecessor in office Education authorities in Scotland have no general powers of feeding, but they have a duty to deal with particular cases and provided that the circumstances of a case come within the provisions of the statute this duty would not appear to be affected by holidays It is only if and when there is reason to believe that any authority is neglecting that duty, that it will be open to me to consider what action can appropriately be taken.

Communications with the Shetland Islands

Sir ARCHIBALD SINCLAIR asked the Under Secretary to the Scottish Board of Health whether, in view of the need, particularly on the ground of public health, for the improvement of communications between the island of Stroma and the mainland, the Government would consider experimenting with the installation of low-power wireless telephony on the duplex system on this island—Sir J. GILMOUR replied. The establishment of communication by wireless telephony between the island of Foula and the mainland of Zetland for medical service purposes is under consideration at present Should the arrangements which it is hoped to make in that instance prove successful and not unduly expensive I shall be glad to consider whether assistance can be given from the Highlands and Islands (Medical Service) Fund towards the cost of similar arrangements for the other islands to which the ordinary telegraph and telephone services do not extend

Dust-shoot Nuisance at Purfleet

Mr. LOOKER asked the Minister of Health if he was aware of the nuisance and the menace to the health of the neighbourhood caused by the dust-shoot at Purfleet, and if he would take steps to see that this nuisance was not continued and that no fresh dust-shoots were allowed to be created—Sir KINGSLEY WOOD replied. An inspection was made some two years ago of the two tips to which my hon. friend refers and that inspection did not disclose any nuisance or menace to health. My right hon friend has, however, directed that a fresh inspection shall be made in the immediate future.

Houses Built of Concrete and Special Materials.

Mr HERBERT WILLIAMS asked the Minister of Health the number of houses completed during the 12 months ended March 31st, 1926, which were constructed of materials other than ordinary bricks and natural stone—Sir KINGSLEY WOOD replied. Returns from local authorities of houses built with State assistance show that during this period approximately 10,000 houses constructed of concrete or by other special methods were completed Statistics are not available for houses built without State assistance

Tuberculosis Dispensaries.

Colonel DAY asked the Minister of Health what steps are being taken by his department with a view to the greater utilisation of the opportunities provided by the tuberculosis dispensaries—Sir KINGSLEY WOOD replied My right hon. friend is not clear what further use of the tuberculosis dispensaries the hon. Member has in mind These dispensaries are provided by the local authorities and my department have always encouraged their full use as centres for diagnosis, observation, and special forms of treatment.

Increasing Cost of Working-class Houses

Viscountess ASTOR asked the Minister of Health whether officials of his department were inquiring as to the reasons for the increasing costs of working-class houses; and if so, to what causes was the continuous rise attributed—Sir KINGSLEY WOOD replied A constant watch is kept by my right hon. friend's department upon the trend of house-building prices An investigation of the reasons for the rise in building costs during the past two and a half years, which is approximately 11 per cent, shows that a rise of wages accounts for from 2½ per cent to 5 per cent., according to district, and increases in the prices of materials account for about 4 per cent The remainder of the rise in costs is probably partly due to the increase in the number of houses let in contracts, and in my right hon friend's opinion the existence of the subsidy may have contributed something in this direction

Nursing Homes for the Poorer Middle Class

Major AINSWORTH asked the Minister of Health if his department had any record of the extension of nursing homes or institutions for the poorer middle class for the use of which payment was made on a modest scale; and whether he could take any action to stimulate such provision.—Mr NEVILLE CHAMBERLAIN replied. The answer to the first part of the question is in the negative As regards the second part while I appreciate the need for accommodation of this kind, its provision is a matter for local initiative and there are no funds at my disposal from which assistance can be given

R A M C and Dental Corps Officers

Sir L. WORTHINGTON-EVANS (Secretary of State for War) informed Colonel Clifton Brown that the number of officers not holding permanent regular commissions still employed with the Regular Army on July 1st was 152 which included Royal Army Medical Corps 35, and Army Dental Corps 60.

inspection where the local supervisory authority thought it could safely be done He thought it would appeal to all members of the House when they realised that there were certain homes known as rescue homes, and other places of that sort, which occasionally had cases of women who gave birth to children They came to those homes and were properly looked after, but it was of the essence of the good work of those institutions that there should be no publicity about it It was especially in connexion with the Salvation Army that they had been approached Obviously there would be some difficulty unless the matter were left to the judgment of the proper authority The local supervisory authority was therefore given power to exempt in such cases

Mr A. V **ALEXANDER** said that the hon Member must know that an amendment of this kind was very controversial The principle involved was of very great importance A large number of the maternity cases which were likely to be dealt with in this class of home were cases from the working class, and the amendment was not all in the interest of working-class mothers who might be confined in institutions of that kind He suggested that in view of the strong feeling likely to be aroused that the amendment might be withdrawn in order that the House might have time to consider it

Dr **DRUMMOND SHIELS** said in regard to the first amendment he had nothing to say, he thought it was quite necessary. But in regard to this one, while he was in general sympathy with it, he thought it required a little consideration On the whole there was an effective safeguard in the fact that the inspecting authority would have to be satisfied of the bona fides of any hospital or similar institution before exemption was given But he would like the hon Member to consent to another safeguard—namely, that the exemption given should not extend for more than 12 months

The **SPEAKER** I take it that the hon Member is objecting If that be so, as it is after 11 o'clock the debate must stand adjourned.

The further consideration of the Lords' amendments to the Bill was adjourned

The Death in Bedford Prison

Mr **HAYES** asked the Home Secretary whether he was aware that the governor of Bedford prison advised the prison doctor on several occasions on and after May 19th to remove prisoner Russell to a hospital cell and inform the relatives of the prisoner's serious illness, that this advice was not acted upon, that the doctor stated that the man was not seriously ill and would be all right in a day or two, that the governor reported to the Prison Commissioners that he was not satisfied that the doctor had done all that could have been done for the prisoner, whether these points were considered at the Home Office inquiry, and whether the Prison Commissioners took into account, when submitting their recommendations to him, the 36 years of unblemished record of the governor and his consistent advocacy for many year of prison and penal reform —Sir **WILLIAM JOYNSON-HICKS** replied I am very sorry to have to answer questions which compel me to go into details concerning the degree of blameworthiness of an officer who, apart from this painful incident, had a long record of valuable service to his credit, and I will be as brief as possible Every point that could be urged in his favour was considered at the inquiry, and every factor was taken into consideration by the Commissioners and by me, but the responsibility of the governor of a prison for what goes on under his management must be recognised, and I felt that it was my clear duty after what had happened in this case to take the course that I announced to the House a fortnight ago

Motor Bicycles as Cause of Street Accidents

Mr **WARDLAW-MILNE** asked the Home Secretary whether his attention had been drawn to the large number of motor accidents, particularly in connexion with motor bicycles, which were now taking place, and whether, in view of this, he would instruct the police authorities to prosecute more rigorously the riders of motor bicycles who were travelling at very high speeds, in preference to instituting prosecutions against motor-car drivers who, under reasonable conditions of traffic, drove their cars at a speed which slightly exceeded that laid down by law —Sir **WILLIAM JOYNSON-HICKS** replied I can only say that the police will continue to do all they can to check the driving of both motor-cars and motor-cycles at speeds which are dangerous to the public

Swimming for School-children.

Colonel **WOODCOCK** asked the President of the Board of Education if he would consider instituting a compulsory course of swimming for school-children, after passing a medical examination, as a definite part of the school curriculum where facilities for swimming were available, and if he was aware of any education committees in the country who had already taken steps for systematically teaching the art of swimming to the scholars —Lord **EUSTACE PERCY** replied I think my hon friend underestimates the work already being done A large number of authorities already prescribe systematic courses of instruction in swimming and, in general, I do not believe that it is necessary or desirable that the Board should issue detailed directions to authorities in regard to curriculum

MONDAY, JULY 19TH

Veterinary Inspection of Imported Meat

Sir **ROBERT THOMAS** asked the Minister of Agriculture whether he was aware that the steamer *Cambrian Countess* had just delivered 250 head of cattle from the Argentine at Zeebrugge, and that a British veterinary surgeon, appointed by the Ministry of Agriculture, had subjected these animals to examination and had certified them to be free from disease, that the animals had been slaughtered and sent to the London market, via Harwich, as fresh meat at considerably less than home-produced meat, and, having regard to the need of reducing the cost of living, whether he would permit similar regular shipments subject to the same veterinary inspection —Mr **GUINNESS** replied The vessel in question had sailed from Argentina before the date in which the Importation of Carcases (Prohibition) Order came into force In view of the special circumstances of the case carcases from this cargo were allowed to enter the country subject to a special veterinary examination of the animals both before and after slaughter I regret that I cannot see my way to accede to the suggestion contained in the last part of the question The importation of live animals from South America is prohibited by order on account of the prevalence of foot-and-mouth disease in some parts of that continent, and the establishment of a slaughter house at Zeebrugge for the purpose of this trade is an evasion of the Ministry's Order There is also the additional risk that infection might be brought from Belgium, where foot-and-mouth disease is particularly rife at the present time

Treatment of Mentally Defective Child

Dr **VERNON DAVIES** asked the President of the Board of Education if he was aware that Frederick Charles Joyce, now of 65, Heap-street, Oldham, was a mentally defective child with spinal curvature, that his father was killed in action in 1915, that his mother had since died, and that he, his brother, and a sister were living with their mother's sister, Mrs Sparkes, at the above address, which was an ordinary four-roomed house, that Mrs Sparkes's family, consisting of a husband and six children, lived also in this house, one of the children suffering from tuberculosis and another being mentally defective, that for the last two years the War Pensions Committee had been trying to get Frederick Charles Joyce removed from such unsuitable surroundings in vain, that they had been assisted in these attempts by the local education authority, and whether the Board of Education would arrange for the accommodation of this child in an institution —Lord E **PERCY** replied The case of this boy has been already brought to my notice I am making inquiries to see if anything can be done in the direction suggested by my *hon.* friend, and I will let him know the result

Importation of Opium from India

Mr **PONSONBY** asked the Under Secretary of State for the Home Department what amount of opium was sent to this country from India, and for what purposes was it used —Sir W **JOYNSON-HICKS** replied 116,000 lb of raw opium were imported into this country from India in 1925 and 16,000 lb were exported during the same year The Indian opium retained in this country is used for the manufacture of morphine and other drugs and medicinal preparations

Medical Staff of the Ministry of Health

Lieut -Commander **KENWORTHY** asked the Minister of Health if he would give a list of the names of medical men employed by the Ministry other than whole-time staff, and what salaries they received —Mr **NEVILLE CHAMBERLAIN** replied Colonel L W Harrison is the only part-time member of the medical staff of the Ministry His salary is £1500 a year Medical men are employed by the department from time to time, as occasion requires, as part-time referees, to assist the Regional Medical Staff in dealing with cases of insured persons referred by approved societies for examination and advice as to incapacity for work They receive no appointment, salary, or guarantee of employment, and are remunerated by a fee of two guineas for each session

Illness among Junior O T C Members

Mr **RENNIE SMITH** asked the Secretary of State for War what was the illness which prevented 3660 members of the junior division of the Officers' Training Corps from attending camp last year, and whether it was the same cause which kept away large number in the preceding years —Sir L **WORTHINGTON-EVANS** replied Such information as is available goes to show that the epidemics in question were principally mumps and German measles, and that the same diseases were responsible for preventing a large number of

Notes, Comments, and Abstracts.

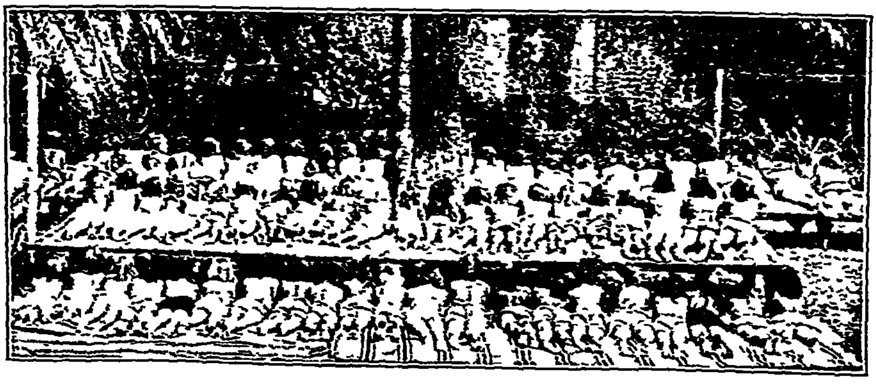
THE TREATMENT OF SURGICAL TUBERCULOSIS

AT THE INSTITUTION OF SANTA MARIA.

By W H Battle, F R C S Eng,
CONSULTING SURGEON, ST THOMAS'S HOSPITAL.

A recent visit to Cannes has given me an opportunity of seeing the treatment of surgical tuberculosis by exposure to the sun, combined with sea bathing, as carried out by Dr A. Pascal at the Institution of Santa Maria in that city This establishment is the first of the kind to be set up in any part of the world and dates from 1903-04

It was founded by Dr. Pascal and is carried on by him almost entirely at his own expense with the aid of several sisters of charity, who take charge of the domestic arrangements and training of the inmates All the patients are females. They are sent by public bodies from various parts of France—even from Paris—and kept until the age of 16, although for a long time there may have been no evidence of tubercle The cases are mostly examples of tuberculous affections of the glands skin bones and joints Girls affected by tuberculosis of the lungs either as the primary disease or as a complication are ineligible. At the time of my visit there was a case of tubercle of the peritoneum under treatment which had responded so well that the abdominal conditions appeared to have become quite normal.



The Home at Santa Maria Lying in the sun.

The establishment is on the outskirts of the town, on the shore of the Gulf de Napoule, an access to the sea at any time being assured by means of a private roadway which passes under the railway line and road. This is an important feature, for it eliminates the danger of injury to the patients who are about 200 in number and would be difficult to shepherd across any road where traffic was permitted

The grounds are divided into two parts, the one nearer the main building containing garden and playing grouned, with some wooden buildings at the sides which are used as class-rooms when the weather is too wet or the sun too hot. There is plenty of air in these rooms as the garden sides are open. The largest of them is on the right hand facing the sea, and this is used as the main dining room, where the meals are served directly from the kitchen. Some distance beyond this and less protected by the trees is an enclosure in which are sloping benches, on which lie rows of girls lightly clothed and in full exposure to the sun and air There is usually no covering to this section of the grounds but arrangements are made to draw blinds across which take away the more intense action of sun during the hotter days of the summer, when the heat might be too great for the patients.

The sleeping apartments are large and well ventilated, and it was pleasant to see how extremely clean everything was kept Each child is supplied on admission with the necessary garments, and these are placed in a cupboard which bears her name and is separated from adjoining ones These cupboards are outside the wards Near them are the lavatories one feature of which is a long trough in which the patients wash their feet before retiring for the night

For six months the new arrivals are made to keep their shoes on during the day, but are gradually induced to do without them so that after this period they join the others, who never wear any foot covering and do not appear to want it The soles of their feet have become quite impervious to pebbles or other hard objects, and they run about without fear of injury

When I paid my visit about 12 o clock on a February day, after an inspection of the patients, especially those who had been admitted for the more serious joint or bone lesions, the family was called upon to go for the daily dip in the sea This was a very interesting part of the treatment, which appeared to be much enjoyed by most of them a few of the more recent younger inmates of the home being, perhaps less vigorous in their expressions of pleasure The parade was under the eye of Dr Pascal who lives on the spot, and a sister; to make more sure of freedom from danger, each of the smaller children is placed under the charge of a senior After the bathe comes manual drill for a few minutes and then the midday meal; as one of the rules of the establishment is the provision of good food, it was not surprising to find the tables fill rapidly when the word was given to sit down. The meal was served hot and passed directly from the kitchen where several of the senior patients assisted whilst others waited on them at the table. They were a happy looking party, full of energy. All who had been residents for some time were well browned, and their muscular system in hard excellent condition.

Operations are not done for the tuberculous lesion, but are sometimes required for deformities resulting from the disease, they are seldom needed A theatre constructed on modern lines was under construction, and a small sterilising plant installed. The usual surgical instruments were already provided by Dr Pascal. It is very interesting to note the absence of splints and rigid apparatus for fixing joints, the spinal cases were none of them in jackets

The experiences of the past few years having shown that a certain number of the inmates became slack and lose flesh during the summer months, Dr Pascal has procured a small estate in the mountains not far from Glasse, to which they are taken. This is used as an auxiliary to the main institution, and from it the family is supplied with vegetables, fruit, milk, and eggs A few weeks in this more stimulating air appears very beneficial, and the natural vigour is restored.

During the whole time of their residence the inmates are undergoing training in various subjects according to their age; the younger ones are taught to read and write, to play games, and to look after their clothes Needlework, housework, cooking waiting at table, gardening, are added, until, at the time of leaving "their home," they are ready for any form of domestic service. It is truly a very interesting sight to see rows of scantily clad patients lying in the sun, toasting their young bodies until quite bronzed by its rays, and during my whole visit I did not see a single patient who looked otherwise than happy Not one appeared to find any inconvenience in lying on the wooden benches, and there were but few still using the invalid chairs because it was still inadvisable to move them

There is no doubt that this institution is doing good work; this was shown by the report published in 1914 and probably another will be issued in a few months giving fuller particulars than I can offer now It can, however, be said that everything I saw showed the value of this method of treatment, especially when it can be carried out in the surroundings and climate of the Institution of Santa Maria. And it may be added that the devotion of Dr Pascal, and his interest in "the family" is worthy of the best traditions of the medical profession

A NEW PURGATIVE

Dr Max Einhorn and Dr H. A. Rafsky writing in the *Journal of the American Medical Association* (June 5th), report on the use of isacen in a series of 47 cases. (An account of the chemical constitution of this drug appeared in The Lancet of July 17th (p 128) under the heading of Analytical Records.) The patients treated were inmates of an institution all 47 were more or less chronic invalids and were over 60 years old Tablets containing 0 005 g were given two three or four times daily and in 39 cases nothing else was needed to keep the bowels tolerably regular In the other cases an enema or

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W

Monday, July 26th, to Saturday, July 31st —Special afternoon demonstration in Clinical Ophthalmology at the Royal Eye Hospital St George's Circus, S E on July 30th, at 3 P M, by Mr Dorrell Open to all members of the medical profession, without fee —North-East London Post Graduate College, Prince of Wales's General Hospital, Tottenham Intensive Course in Medicine Surgery and the Specialties Daily, 10 30 to 5 30 P M Clinical and laboratory methods, demonstrations, operations, general hospital clinics, and formal lectures at 4 30 P M Open to members of the Fellowship of Medicine —West End Hospital for Nervous Diseases, 73, Welbeck-street, W A series of lectures, including clinical demonstrations on selected cases, on the diagnosis and treatment of common diseases of the nervous system Daily, 5 P M, Monday to Friday inclusive Further information from the Secretary of the Fellowship

NORTH-EAST LONDON POST GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N

Special Vacation Course from July 26th to July 31st Second week Daily, to Friday, 10 30 A M to 12 45 P M, Demonstration of Clinical and "Side room" Methods 2 to 2 45 P M, Demonstration of Groups of Clinical Cases 2 30 P M onwards, General Hospital Work, Clinics, Operations &c Clinical Lectures

Monday —3 P M to 4 30 P M, Colonel L W Harrison The Diagnosis and Treatment of Syphilis (cinematograph demonstration)

Tuesday —4 30 P M, Mr T H C Benians Septicæmia

Wednesday —4 30 P M, Mr A E Giles The Treatment of Uterine Fibroids

Thursday —4 30 P M, Mr W Ibbotson Laryngeal Spasm, its Causes and Treatment

Friday —4 30 P M, Mr H W Carson The "Chronic Appendix"

Saturday —11 A M, Dr J K C Laing Demonstration of Typical Cases of Mental Disease (at the Colney Hatch Mental Hospital, New Southgate, N)

Appointments.

Howell, B Whitchurch, F R C S Eng has been appointed Surgeon to the Cheyne Hospital for Children, Cheyne Walk, S W

Johnstone, Robert William, F R C S Edin, M R C P Edin, Professor of Midwifery and the Diseases of Women in the University of Edinburgh

Martin, J Purdon, M D, B Ch Belf, M R C P Lond, Physician at the Dreadnought Hospital Greenwich

Penman, G P, M B, B Ch, F R C S, Second Ophthalmic Surgeon to the Royal Northern Hospital

Whitelocke, Hugh A B, M Ch Oxf, F R C S Eng & Edin, Hon Surgeon, Radcliffe Infirmary, Oxford

St John's Hospital for Diseases of the Skin Wigley, J E M, M B, B S Melb, M R C P Lond, and Dowling, G B, M D Lond, M R C P Lond, Honorary Assistant Physicians

Victoria University of Manchester Ollerenshaw, Robert, M D Manch, F R C S Eng, Honorary Clinical Lecturer in Orthopædics, Bailey, K V M D Manch, Demonstrator in Obstetrics, Brunton, C E, M D Dub, Demonstrator in Human Physiology

Certifying Surgeons under the Factory and Workshop Acts Cartledge, N E D, L R C P Lond, M R C S (E Dereham), Stephens, J B, L R C P Lond, M R C S (Sutton), McAlister, J G, M B, Ch B Glasg (Kilmarnock)

Vacancies.

For further information refer to the advertisement columns

Aberdeen Royal Infirmary —Two Hon Jun Asst S's

Bolingbroke Hospital, Wandsworth Common —Asst Hon Phys

Bradford, Children's Hospital —H S £100

Bradford Royal Infirmary —H S £150

Brighton, Royal Sussex County Hospital —Hon Third Electro Therapeutist

Burnley, Victoria Hospital —H S £150

Burton on Trent Infirmary —Jun Res H S £150

Buxton, Derbyshire, Devonshire Hospital —Asst H P £150

Cairo, Egyptian University —Prof of Pathology £E 1200

Cardiff, Welsh National School of Medicine —Lecturer in Pathology £750.

Colchester, Essex County Hospital —H P £200

Darlington County Borough —M O H £900

Derbyshire County Council —Asst County M.O £750

East African Medical Service —Sanitation Officer £660

Grosvenor Hospital for Women, Vincent square, S W —Hon. Ast Gynæcologist

London Skin Hospital —Hon Phys

Manchester, Ancoats Hospital —R M O £150

Metropolitan Hospital, Kingsland road —Hon Anæsthetist and Ophth Surg

Miller General Hospital for South-East London, Greenwich road, S E —Sen Res M O £250

Papa Westray, Orkney —M O and P V £360

Rochester, St Bartholomew's Hospital —H P At rate of £200

Royal Northern Hospital, Holloway road, N —Clin Asst

St Bartholomew's Hospital and Medical College —Chemical Pathologist and Lecturer

St John's Hospital for Diseases of the Skin, 49, Leicester-square, W C —Pathologist £100

Seychelles Government —Asst M O R 6500 per annum.

Sheffield Royal Hospital —Surg Reg

Sheffield Royal Infirmary —Ophth H S At rate of £80

Swansea Urban District Council —M O H (part time) £200

West-End Hospital for Nervous Diseases —Hon Phys and Hon. Surg

Wolverhampton and Staffordshire Hospital —H.S At rate of £150

York County Hospital —H P £150

The Chief Inspector of Factories Home Office, Whitehall, S W, announces vacancies for Certifying Factory Surgeons at Bishops Stortford, Whithorn (Wigtownshire), and at Pontesbury (Salop)

The Secretary of State for the Home Department gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act for the Districts of the Bishop's Waltham, Petersfield Portsmouth and Newport and Ryde County Courts (Circuit No 51) Applications should reach the Private Secretary, Home Office, not later than August 4th.

Births, Marriages, and Deaths.

BIRTHS

Grant —On July 15th, at The Manor House, Wilnecote, Tamworth, the wife of Dr J V L Grant, of a daughter

Macklin —On July 14th, at Lexham gardens, W, the wife of Dr C H Macklin, of Ampthill, Beds, of a daughter

Troup —On July 18th, at The Farm House, Stonebridge, N W 10, to Jean, wife of Arthur G Troup, M D, D P H —a son

Whitby —On July 18th to Ethel Whitby, M R C S, L R C P, the wife of L E R Whitby, M B, B Ch, of Sarre road, N W —a son

MARRIAGES

Attenborough—Smith —On July 15th, at the Parish Church, Harston, Dr Cuthbert Attenborough of Lismore, Camberley, to Cicely, daughter of Mr and Mrs Thomas Smith, of Harston, Cambs

Hanson—Cox —On July 15th, at St Paul's, Knightsbridge Dr David C Hanson, to Norma Constance, daughter of Mr and Mrs John M Cox, of Derryhale, Dundalk, Ireland

DEATHS

Hugo —On July 17th, at Devonia House, Crediton, Devon (the residence of his sister), Edward Henry Hugo, M B, B S, of Berryfield, Bodmin, Cornwall, aged 44 years

Rose —On July 15th, at Norbury Lodge Upper Norwood, Anthony Strong Rose, L R C P, L R C S, L F P S

Steen —On July 12th, at Sutherland avenue, Bexhill on Sea Prof Robert Hunter Steen, M D, F R C P, late Medical Superintendent, City of London Mental Hospital, Dartford, aged 56

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

An Address

ON THE

MECHANISM OF PANCREATIC SECRETION.

Delivered at the Institute of Pathology and Medical Research, St. Mary's Hospital, London,

By JOHN MELLANBY, M.D. Camb.,

PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF LONDON

(*From the Sherrington School of Physiology, St. Thomas's Hospital, S.E.*)

A general survey of the activities of the body indicates that the functions of the liver and pancreas are intimately related to one another. In this lecture I propose to show how the external secretion of the liver (bile) determines the external secretion of the pancreas (pancreatic juice) I shall consider the subject from the following standpoints: (1) the presence of bile in the duodenum as the intestinal stimulus for pancreatic secretion; (2) secretin as the specific stimulus for the pancreas; (3) the relation of bile-salts to secretin—the isolation of secretin: (4) the path of absorption of secretin: (5) the influence of the vagus nerve on the composition of pancreatic juice: and (6) the mechanism for the discharge of bile into the duodenum

Presence of Bile in the Duodenum as the Intestinal Stimulus for Pancreatic Secretion.

From general considerations of structure it is evident that the rate of secretion of pancreatic juice should be comparable to that of saliva. In the early days of experimental physiology it was observed that a dog with a permanent pancreatic fistula gave a copious secretion of pancreatic juice after feeding. In acute experiments, however under general anæsthesia, it was difficult to obtain more than a few drops of pancreatic juice even after such procedures as vagal stimulation, the intravenous injection of pilocarpine, the injection of alcohol into the alimentary canal, &c. The first important information in regard to pancreatic secretion arose from the observation that the introduction of hydrochloric acid into the stomach or duodenum led to a secretion of pancreatic juice. This fact was investigated by many observers but in this lecture I propose to discuss two views only. In 1901 Popielski[1] stated that the introduction of hydrochloric acid into the duodenum caused the secretion of pancreatic juice by a local reflex nervous mechanism between the duodenum and pancreas. In 1902 Bayliss and Starling[2] showed that this conception was erroneous since the introduction of acid into the duodenum, isolated from the body except by its blood-vessels still caused a secretion of pancreatic juice. This result led directly to the experiment in which Bayliss and Starling gave a striking demonstration of hormone action—namely that an acid decoction of the duodenal mucosa injected into the blood stream produced a large secretion of pancreatic juice. These experiments formed the basis of the hypothesis which has been generally accepted for the past 20 years—that prosecretion exists in the mucous membrane of the duodenum, that hydrochloric acid from the stomach converts prosecretin into secretin, and that secretin after absorption into the blood is carried to the pancreas and excites it into activity.

It has long been recognised, however, that many facts militate against the acceptance of this hypothesis which makes pancreatic secretion dependent upon gastric secretion Thus Czerny[3] observed that a dog which had undergone complete gastrectomy lived and showed no diminished power of digestion. This animal experiment has its homologue in the many successful cases of more or less complete gastrectomy which have been carried out on human beings. Further, achlorhydria is a relatively common occurrence in apparently normal individuals and is not associated with any digestive disturbances. Finally, Dodds and Bennett[4] carried out a series of experiments on themselves in which they introduced a neutral food into the duodenum. A fall in the percentage of CO_2 in the alveolar air indicated that normal pancreatic secretion followed this duodenal alimentation. A consideration of all these facts led me to reinvestigate the mechanism of pancreatic secretion. At the outset I assumed the accuracy of the prosecretin hypothesis and made secretin extracts by boiling the duodenal mucosa with 0 2 per cent. HCl, &c

Distribution of Prosecretin.—Prosecretin varies widely in its distribution in animals. In the carnivorous animal (cat) it is practically limited to the duodenum; in the omnivorous animal (pig) it is found in considerable quantities at least 10 feet from the pyloric sphincter: in the herbivorous animal (goat) large quantities are found not only in the duodenum but also in the ileum. This distribution indicated that acids other than hydrochloric were capable of converting prosecretin into secretin. To test this hypothesis extracts were made of the duodenal mucous membrane with water containing amino-acids as glutamic acid, leucine, and tyrosine. All these extracts contained large quantities of secretin, although it may be observed that leucine and tyrosine are neutral to litmus (Mellanby and Huggett).[5]

Preparation of Secretin.—This result led me to explore systematically the conditions under which secretin solutions may be made. Extracts of the duodenal mucous membrane of a pig were made with a variety of solvents and the comparative secretin contents of these extracts were determined. The table of figures shows the number of drops of pancreatic juice secreted as the result of injecting 2 c.cm. of the following extracts into the femoral vein of a series of anæsthetised cats:—

Extract	Pancreatic juice (drops)	Extract.	Pancreatic juice. (drops)
75 % alcohol	28	H_2O	16
75 % acetone	24	0·05 % NaOH .	20
5 % NaCl .	24	0 1 % NaOH ..	12
0·7 % NaCl	20	0·2 % HCl	20

From these experiments it was evident that hydrochloric acid possesses no specific capacity for making secretin from prosecretin Latterly I[6] have shown that elevation of temperature is not essential. In fact, the best method for making secretin consists in grinding up the duodenal mucous membrane with four parts of absolute alcohol at room temperature. The filtrate contains a large quantity of secretin in a relatively stable condition since it shows no loss of activity even after considerable periods of time. These results prove conclusively that secretin exists in a preformed condition in the mucous membrane of the small intestine, the distribution of this secretin varying in different species of animals.

Specific Stimulus for Pancreatic Secretion.—Bayliss and Starling assumed that the formation of secretin from prosecretin by the action of acid chyme led ipso facto to the absorption of this secretion into the blood, and hence to the secretion of pancreatic juice. But if secretin exists in a preformed condition in the duodenal mucous membrane the problem arose as to what particular intestinal event (assuming that secretin calls out the activity of the pancreas) causes the absorption of secretin into the blood and hence to the discharge of pancreatic juice. In the literature on the subject of pancreatic secretion a large number of substances have been described as producing a flow of pancreatic juice when injected into various parts of the alimentary canal. Among such substances may be mentioned hydrochloric acid, water, fats soaps, alcohol mustard, and croton oil. A large number of experiments were carried out to investigate these

Epsom salts was given on some days in addition Twenty-eight of the patients were entirely free from colic or pain whilst using isacen Of the remaining 19, one had severe pain before and during defæcation, whilst 18 occasionally had some pain either before or during defæcation. The number of movements fluctuated from one to two, seldom three to four, daily Occasionally there was no movement for a day or two in some of the cases These results were obtained during one month's trial of the remedy and the patients included sufferers from chronic nephritis, severe chronic constipation, myocarditis, and pulmonary tuberculosis Dr Einhorn and Dr. Rafsky conclude by remarking that "a laxative remedy will certainly be more efficacious in healthy persons than in invalids Isacen has proved of great help in these old and helpless patients and will certainly be of assistance in the routine work of treating constipation" Such a conclusion based on clinical observation is more convincing than formulæ

THE WARNEFORD MENTAL HOSPITAL

THE centenary of the Warneford Mental Hospital, which was celebrated on July 15th, forms the occasion for the issue of a brief history of the hospital, which has been compiled for the committee of management A meeting of the governors of the Radcliffe Infirmary on April 28th, 1813, was the genesis of the hospital, though the expediency of erecting such an institution in the vicinity of Oxford had been previously discussed A sum of £20,000 was raised, and on July 10th, 1826, the hospital, then known as the Oxford Lunatic Asylum, was opened for the reception of patients "who, though poor, were not paupers, those who, though above poverty, were far from affluence, and those who, though blessed with a sufficiency to meet the ordinary calls on their resources, were unable to satisfy the pressing demands of a heavy calamity" Dr James Adey Ogle, Aldrich Professor of Medicine, was the first (non-resident) medical superintendent, in 1828 the first resident medical officer was appointed in the person of Mr F T Wintle, and the name of the institution was changed to the Radcliffe Asylum, in appreciation of the large sums of money contributed by the Radcliffe Trustees In 1843, in order to make some enduring record of the generous benefactions of Dr Samuel Wilson Warneford, whose donations over a period of 42 years exceeded the value of £70,000, it was resolved again to change the name of the institution, which became known as the Warneford Asylum, later incorporated as the Warneford Lunatic Asylum At the present time the hospital, which began on 10 acres and accommodated 30 patients, now has an estate of 120 acres and provides beds for 130 patients It is at the present time a registered hospital for the care and treatment of both sexes of the upper and middle classes when suffering from nervous and mental disorders Though it has not been possible of recent years to treat so many patients at reduced fees as in times past, those who cannot afford to pay full fees are not refused, and the committee of management invite donations to increase the funds at their disposal for this purpose

PROFESSIONAL STANDARDS

To the Editor of THE LANCET

SIR,—I was called in to attend a patient who had a blood pressure of 235, on the strength of which I prevailed upon him to stay in bed for two or three days. On calling on the fourth day I found his blood pressure was 220 He is an active-minded and energetic man, with very definite ideas of his own, and feels that if he pays, he can go where he likes On the following day, when I arrived at his house, his blood pressure was 210, and after I had taken it, he informed me that he had been so alarmed at the advice I had given him, about keeping still and quiet, resting in bed and milk diet, that when I had left his house on my last visit he got straight out of bed, dressed himself, and went round to another doctor, A, to whom he explained the whole situation

Dr A thereupon, at his request, took his blood pressure and found it was only 160 My patient put it to me afterwards thus "I have every confidence in you doctors, but I have no confidence in your machine" This opened my eyes to the possibility of a mechanical error in my sphygmomanometer I was so disturbed at my patient's behaviour, and Dr A's action, even to the extent of informing my patient that he would stand by his pressure-reading in a court of law, that I thereupon suggested a second opinion of my own choosing I brought on the following day a specialist of high repute, who examined the patient thoroughly, noting his general condition and took his blood pressure, this was 225, and the consultant gave the patient sound advice about resting in bed until his pressure had absolutely gone down and stabilised itself

Before the consultant left I took the opportunity of showing to the patient a certificate which I had received from the maker of my blood-pressure machine that very day, when I had taken it to be tested, and it proved to be absolutely accurate against the standard column at their works The next day I took the patient's blood pressure again, and it was 220 On the following day, on my arrival at the house, there were present not only another doctor, Dr B, but a specialist brought by him with the full knowledge that this man was under my care I learned who this second specialist was, and I know who Dr B is who brought him, also I happen to know who the Dr A was

It was interesting to learn that the second consultation resulted in agreement with what the specialist brought by me said, and with all that I had personally told my patient from the start

Have standards of professional conduct changed?

I am, Sir, yours faithfully,

July 14th, 1926 HONORIUS.

DIPHTHERIA IMMUNISATION

To the Editor of THE LANCET.

SIR,—A tragedy we hear of from time to time—the loss of an only child from diphtheria—must cause regret to those of our profession who are interested in diphtheria immunisation Very few parents are aware that they can have their children immunised against this serious disease I am sure many medical officers of health would be pleased to learn from their colleagues in general practice how they think this knowledge can best be brought home to parents

I am, Sir, yours faithfully,

C W HUTT

Holborn Town Hall, July 16th, 1926

THE MEDICAL KING'S PRIZEMAN

A CORRESPONDENT draws our attention to the fine performance of Dr F. H Kelly as a rifle shot in tying for the King's Prize at Bisley. He writes :—"I may say without fear of contradiction that Dr Kelly, with the possible exception of Arthur Fulton, also a winner, has for some years been the finest all-round rifle shot in Great Britain. This distinction is all the more remarkable in that he does no rifle-shooting during the year other than at the annual Bisley meeting Dr Kelly was third in the competition last year, another medical man, Dr C W Wirgman being second, while another, Dr C H Vernon, was tenth Dr Kelly in recent years has won at Bisley the Grand Aggregate in 1914, 1922 and 1923, the All-comers Aggregate in 1922 and 1923, the Service Rifle Championship in 1914, and the Elkington Aggregate in 1923 and 1925 In the King's Prize he has previously reached the final stage in 1920, 21, 22, 23, and 25, winning the Bronze Medal in the first stage in 1922 In 1924 he was again in a leading position in the aggregates but was unable to remain at Bisley for the latter part of the meeting"

We agree with our correspondent that this is a very remarkable record of skill and consistency

THE REBUILDING OF ST BARTHOLOMEW'S HOSPITAL IN THE EIGHTEENTH CENTURY

Now that that venerable house of mercy, St Bartholomew's Hospital, is about to undergo a scheme of reconstruction, a paper appearing in the current volume of the Hospital Reports, by Sir D'Arcy Power, on the reconstruction begun in 1730 and finished in 1769, has a special interest Of the buildings of the pre-Reformation Hospital practically nothing is known, but in the year 1617 a plan was made which is still extant and was reproduced in the second volume of Norman Moore's "History of the Hospital" This plan shows that most of the site of the hospital now occupied by buildings for medical or surgical use was then covered with houses In 1680 the hospital began to be enlarged, and by 1712 a committee decided that three new wards should be built, which came into use about 1714 In 1730 the "first pile decided upon by the Committee of 1723 was begun, James Gibbs being architect and the builder the well-known Ralph Allen, of Prior Park, Bath, who supplied the stone from his own quarries" The foreman in charge of the work was Richard Biggs, and, showing that present-day difficulties in the building trade are not new, we find Mr Allen writing that "Allabaster's people, who are setting the stone, are abusive and very idle The carpenters too are very dilatory in laying the floors" The "first pile" consisted of the present Great Hall, with its staircase ornamented by the Hogarth paintings and the Treasurer's House By 1736 a second pile was ordered—i e, the present south wing, and in 1743 a third pile was begun, the present west wing Then came the war of the Austrian succession, which held up the building until 1749, when building recommenced The block was finished and came into use about 1752 With this date the first portion of Sir D'Arcy Power's paper ends.

An Address

ON THE

MECHANISM OF PANCREATIC SECRETION.

Delivered at the Institute of Pathology and Medical Research St Mary's Hospital, London,

BY JOHN MELLANBY, M.D. CAMB.,
PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF LONDON

(From the Sherrington School of Physiology, St. Thomas's Hospital, S.E.)

A GENERAL survey of the activities of the body indicates that the functions of the liver and pancreas are intimately related to one another. In this lecture I propose to show how the external secretion of the liver (bile) determines the external secretion of the pancreas (pancreatic juice) I shall consider the subject from the following standpoints: (1) the presence of bile in the duodenum as the intestinal stimulus for pancreatic secretion. (2) secretin as the specific stimulus for the pancreas: (3) the relation of bile-salts to secretin—the isolation of secretin; (4) the path of absorption of secretin: (5) the influence of the vagus nerve on the composition of pancreatic juice; and (6) the mechanism for the discharge of bile into the duodenum

PRESENCE OF BILE IN THE DUODENUM AS THE INTESTINAL STIMULUS FOR PANCREATIC SECRETION

From general considerations of structure it is evident that the rate of secretion of pancreatic juice should be comparable to that of saliva In the early days of experimental physiology it was observed that a dog with a permanent pancreatic fistula gave a copious secretion of pancreatic juice after feeding. In acute experiments however under general anæsthesia it was difficult to obtain more than a few drops of pancreatic juice even after such procedures as vagal stimulation, the intravenous injection of pilocarpine the injection of alcohol into the alimentary canal, &c. The first important information in regard to pancreatic secretion arose from the observation that the introduction of hydrochloric acid into the stomach or duodenum led to a secretion of pancreatic juice. This fact was investigated by many observers but in this lecture I propose to discuss two views only In 1901 Popielski [1] stated that the introduction of hydrochloric acid into the duodenum caused the secretion of pancreatic juice by a local reflex nervous mechanism between the duodenum and pancreas In 1902 Bayliss and Starling [2] showed that this conception was erroneous since the introduction of acid into the duodenum isolated from the body except by its blood-vessels, still caused a secretion of pancreatic juice. This result led directly to the experiment in which Bayliss and Starling gave a striking demonstration of hormone action—namely that an acid decoction of the duodenal mucosa injected into the blood stream produced a large secretion of pancreatic juice. These experiments formed the basis of the hypothesis which has been generally accepted for the past 20 years—that prosecretion exists in the mucous membrane of the duodenum that hydrochloric acid from the stomach converts prosecretin into secretin and that secretin after absorption into the blood is carried to the pancreas and excites it into activity

It has long been recognised, however, that many facts militate against the acceptance of this hypothesis which makes pancreatic secretion dependent upon gastric secretion Thus Czerny [3] observed that a dog which had undergone complete gastrectomy lived and showed no diminished power of digestion This animal experiment has its homologue in the many successful cases of more or less complete gastrectomy which have been carried out on human beings. Further, achlorhydria is a relatively common occurrence in apparently normal individuals and is not associated with any digestive disturbances Finally, Dodds and Bennett [4] carried out a series of experiments on themselves in which they introduced a neutral food into the duodenum A fall in the percentage of CO_2 in the alveolar air indicated that normal pancreatic secretion followed this duodenal alimentation. A consideration of all these facts led me to reinvestigate the mechanism of pancreatic secretion At the outset I assumed the accuracy of the prosecretin hypothesis and made secretin extracts by boiling the duodenal mucosa with 0·2 per cent. HCl, &c.

Distribution of Prosecretin.—Prosecretin varies widely in its distribution in animals. In the carnivorous animal (cat) it is practically limited to the duodenum; in the omnivorous animal (pig) it is found in considerable quantities at least 10 feet from the pyloric sphincter; in the herbivorous animal (goat) large quantities are found not only in the duodenum but also in the ileum This distribution indicated that acids other than hydrochloric were capable of converting prosecretin into secretin To test this hypothesis extracts were made of the duodenal mucous membrane with water containing amino-acids as glutamic acid leucine, and tyrosine. All these extracts contained large quantities of secretin, although it may be observed that leucine and tyrosine are neutral to litmus (Mellanby and Huggett) [5]

Preparation of Secretin.—This result led me to explore systematically the conditions under which secretin solutions may be made. Extracts of the duodenal mucous membrane of a pig were made with a variety of solvents and the comparative secretin contents of these extracts were determined. The table of figures shows the number of drops of pancreatic juice secreted as the result of injecting 2 c.cm of the following extracts into the femoral vein of a series of anæsthetised cats —

Extract	Pancreatic juice (drops)	Extract	Pancreatic juice (drops)
75 % alcohol	28	H_2O . .	16
75 % acetone	24	0·05 % NaOH	20
5 % NaCl	24	0·1 % NaOH . .	12
0·7 % NaCl .	20	0·2 % HCl . .	20

From these experiments it was evident that hydrochloric acid possesses no specific capacity for making secretin from prosecretin Latterly I [6] have shown that elevation of temperature is not essential. In fact the best method for making secretin consists in grinding up the duodenal mucous membrane with four parts of absolute alcohol at room temperature. The filtrate contains a large quantity of secretin in a relatively stable condition since it shows no loss of activity even after considerable periods of time. These results prove conclusively that secretin exists in a preformed condition in the mucous membrane of the small intestine the distribution of this secretin varying in different species of animals.

Specific Stimulus for Pancreatic Secretion [7]—Bayliss and Starling assumed that the formation of secretin from prosecretin by the action of acid chyme led ipso facto to the absorption of this secretion into the blood and hence to the secretion of pancreatic juice. But if secretin exists in a preformed condition in the duodenal mucous membrane the problem arose as to what particular intestinal event (assuming that secretin calls out the activity of the pancreas) causes the absorption of secretin into the blood and hence to the discharge of pancreatic juice. In the literature on the subject of pancreatic secretion a large number of substances have been described as producing a flow of pancreatic juice when injected into various parts of the alimentary canal. Among such substances may be mentioned hydrochloric acid, water, fats soaps alcohol, mustard, and croton oil A large number of experiments were carried out to investigate these

Epsom salts was given on some days in addition Twenty-eight of the patients were entirely free from colic or pain whilst using isacen Of the remaining 19, one had severe pain before and during defæcation, whilst 18 occasionally had some pain either before or during defæcation The number of movements fluctuated from one to two, seldom three to four, daily Occasionally there was no movement for a day or two in some of the cases These results were obtained during one month's trial of the remedy and the patients included sufferers from chronic nephritis, severe chronic constipation, myocarditis, and pulmonary tuberculosis Dr Einhorn and Dr Rafsky conclude by remarking that "a laxative remedy will certainly be more efficacious in healthy persons than in invalids Isacen has proved of great help in these old and helpless patients and will certainly be of assistance in the routine work of treating constipation" Such a conclusion based on clinical observation is more convincing than formulæ

THE WARNEFORD MENTAL HOSPITAL

THE centenary of the Warneford Mental Hospital, which was celebrated on July 15th, forms the occasion for the issue of a brief history of the hospital, which has been compiled for the committee of management A meeting of the governors of the Radcliffe Infirmary on April 28th, 1813, was the genesis of the hospital, though the expediency of erecting such an institution in the vicinity of Oxford had been previously discussed A sum of £20,000 was raised, and on July 10th, 1826, the hospital, then known as the Oxford Lunatic Asylum, was opened for the reception of patients "who, though poor, were not paupers, those who, though above poverty, were far from affluence, and those who, though blessed with a sufficiency to meet the ordinary calls on their resources, were unable to satisfy the pressing demands of a heavy calamity." Dr James Adey Ogle, Aldrich Professor of Medicine, was the first (non-resident) medical superintendent, in 1828 the first resident medical officer was appointed in the person of Mr F T Wintle, and the name of the institution was changed to the Radcliffe Asylum, in appreciation of the large sums of money contributed by the Radcliffe Trustees In 1843, in order to make some enduring record of the generous benefactions of Dr Samuel Wilson Warneford, whose donations over a period of 42 years exceeded the value of £70,000, it was resolved again to change the name of the institution, which became known as the Warneford Lunatic Asylum, later incorporated as the Warneford Lunatic Asylum At the present time the hospital, which began on 10 acres and accommodated 30 patients, now has an estate of 120 acres and provides beds for 130 patients It is at the present time a registered hospital for the care and treatment of both sexes of the upper and middle classes when suffering from nervous and mental disorders Though it has not been possible of recent years to treat so many patients at reduced fees as in times past, those who cannot afford to pay full fees are not refused, and the committee of management invite donations to increase the funds at their disposal for this purpose

PROFESSIONAL STANDARDS

To the Editor of THE LANCET

SIR,—I was called in to attend a patient who had a blood pressure of 235, on the strength of which I prevailed upon him to stay in bed for two or three days. On calling on the fourth day I found his blood pressure was 220 He is an active-minded and energetic man, with very definite ideas of his own, and feels that if he pays, he can go where he likes On the following day, when I arrived at his house, his blood pressure was 210, and after I had taken it, he informed me that he had been so alarmed at the advice I had given him, about keeping still and quiet, resting in bed and milk diet, that when I had left his house on my last visit he got straight out of bed, dressed himself, and went round to another doctor, A, to whom he explained the whole situation

Dr A thereupon, at his request, took his blood pressure and found it was only 160 My patient put it to me afterwards thus "I have every confidence in you doctors, but I have no confidence in your machine" This opened my eyes to the possibility of a mechanical error in my sphygmomanometer I was so disturbed at my patient's behaviour, and Dr A's action, even to the extent of informing my patient that he would stand by his pressure-reading in a court of law, that I thereupon suggested a second opinion of my own choosing I brought on the following day a specialist of high repute, who examined the patient thoroughly, noting his general condition and took his blood pressure, this was 225, and the consultant gave the patient sound advice about resting in bed until his pressure had absolutely gone down and stabilised itself

Before the consultant left I took the opportunity of showing to the patient a certificate which I had received from the maker of my blood-pressure machine that very day, when I had taken it to be tested, and it proved to be absolutely accurate against the standard column at the works The next day I took the patient's blood pressure again, and it was 220 On the following day, on my arrival at the house, there were present not only another doctor Dr B, but a specialist brought by him with the full knowledge that this man was under my care I learned who this second specialist was, and I know who Dr B is who brought him, also I happen to know who the Dr A was

It was interesting to learn that the second consultation resulted in agreement with what the specialist brought by me said, and with all that I had personally told my patient from the start

Have standards of professional conduct changed?

I am, Sir, yours faithfully,
Honoris

July 14th, 1926

DIPHTHERIA IMMUNISATION

To the Editor of THE LANCET

SIR,—A tragedy we hear of from time to time—the loss of an only child from diphtheria—must cause regret to those of our profession who are interested in diphtheria immunisation Very few parents are aware that they can have their children immunised against this serious disease I am sure many medical officers of health would be pleased to learn from their colleagues in general practice how they think this knowledge can best be brought home to parents

I am, Sir, yours faithfully
C W. HUTT

Holborn Town Hall, July 16th, 1926

THE MEDICAL KING'S PRIZEMAN

A CORRESPONDENT draws our attention to the fine performance of Dr F. H. Kelly as a rifle-shot in tying for the King's Prize at Bisley He writes —"I may say without fear of contradiction that Dr Kelly, with the possible exception of Arthur Fulton, also a winner, has for some years been the finest all-round rifle shot in Great Britain This distinction is all the more remarkable in that he does no rifle-shooting during the year other than at the annual Bisley meeting Dr Kelly was third in the competition last year, another medical man, Dr C W Wirgman being second, while another, Dr C H Vernon, was tenth Dr Kelly in recent years has won at Bisley the Grand Aggregate in 1914, 1922 and 1923, the All-comers Aggregate in 1922 and 1923, the Service Rifle Championship in 1914, and the Elkington Aggregate in 1923 and 1925 In the King's Prize he has previously reached the final stage in 1920, 21, 22, 23, and 25, winning the Bronze Medal in the first stage in 1922 In 1924 he was again in a leading position in the aggregate but was unable to remain at Bisley for the latter part of the meeting"

We agree with our correspondent that this is a very remarkable record of skill and consistency

THE REBUILDING OF ST BARTHOLOMEW'S HOSPITAL IN THE EIGHTEENTH CENTURY

NOW that that venerable house of mercy, St Bartholomew's Hospital, is about to undergo a scheme of reconstruction, a paper appearing in the current volume of the Hospital Reports, by Sir D'Arcy Power, on the reconstruction begun in 1730 and finished in 1769, has a special interest Of the buildings of the pre-Reformation Hospital practically nothing is known, but in the year 1617 a plan was made which is still extant and was reproduced in the second volume of Norman Moore's "History of the Hospital." This plan shows that most of the site of the hospital now occupied by buildings for medical or surgical use was then covered with houses In 1680 the hospital began to be enlarged, and by 1712 a committee decided that three new wards should be built, which came into use about 1714 In 1730 the "first pile decided upon by the Committee of 1723 was begun, James Gibbs being architect and the builder the well-known Ralph Allen, of Prior Park, Bath, who supplied the stone from his own quarries" The foreman in charge of the work was Richard Biggs, and, showing that present-day difficulties in the building trade are not new, we find Mr Allen writing that "Allabaster's people, who are setting the stone, are abusive and very idle The carpenters too are very dilatory in laying the floors" The "first pile" consisted of the present Great Hall, with its staircase ornamented by the Hogarth paintings, and the Treasurer's House By 1736 a second pile was ordered—i e., the present south wing, and in 1743 a third pile was begun, the present west wing Then came the war of the Austrian succession, which held up the building until 1749, when building recommenced The block was finished and came into use about 1752 With this date the first portion of Sir D'Arcy Power's paper ends

An Address

ON THE

MECHANISM OF PANCREATIC SECRETION.

Delivered at the Institute of Pathology and Medical Research, St. Mary's Hospital, London,

BY JOHN MELLANBY, M.D. CAMB.,
PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF LONDON

(From the Sherrington School of Physiology, St. Thomas's Hospital, S.E.)

A GENERAL survey of the activities of the body indicates that the functions of the liver and pancreas are intimately related to one another In this lecture I propose to show how the external secretion of the liver (bile) determines the external secretion of the pancreas (pancreatic juice) I shall consider the subject from the following standpoints: (1) the presence of bile in the duodenum as the intestinal stimulus for pancreatic secretion: (2) secretin as the specific stimulus for the pancreas: (3) the relation of bile-salts to secretin—the isolation of secretin; (4) the path of absorption of secretin; (5) the influence of the vagus nerve on the composition of pancreatic juice; and (6) the mechanism for the discharge of bile into the duodenum

PRESENCE OF BILE IN THE DUODENUM AS THE INTESTINAL STIMULUS FOR PANCREATIC SECRETION.

From general considerations of structure it is evident that the rate of secretion of pancreatic juice should be comparable to that of saliva. In the early days of experimental physiology it was observed that a dog with a permanent pancreatic fistula gave a copious secretion of pancreatic juice after feeding. In acute experiments however under general anæsthesia, it was difficult to obtain more than a few drops of pancreatic juice even after such procedures as vagal stimulation, the intravenous injection of pilocarpine the injection of alcohol into the alimentary canal, &c. The first important information in regard to pancreatic secretion arose from the observation that the introduction of hydrochloric acid into the stomach or duodenum led to a secretion of pancreatic juice. This fact was investigated by many observers but in this lecture I propose to discuss two views only In 1901 Popielski[1] stated that the introduction of hydrochloric acid into the duodenum caused the secretion of pancreatic juice by a local reflex nervous mechanism between the duodenum and pancreas In 1902 Bayliss and Starling[2] showed that this conception was erroneous since the introduction of acid into the duodenum isolated from the body except by its blood-vessels, still caused a secretion of pancreatic juice. This result led directly to the experiment in which Bayliss and Starling gave a striking demonstration of hormone action—namely that an acid decoction of the duodenal mucosa injected into the blood stream produced a large secretion of pancreatic juice. These experiments formed the basis of the hypothesis which has been generally accepted for the past 20 years—that prosecretion exists in the mucous membrane of the duodenum that hydrochloric acid from the stomach converts prosecretin into secretin and that secretin after absorption into the blood is carried to the pancreas and excites it into activity

It has long been recognised however, that many facts militate against the acceptance of this hypothesis which makes pancreatic secretion dependent upon gastric secretion Thus Czerny[3] observed that a dog which had undergone complete gastrectomy lived and showed no diminished power of digestion This animal experiment has its homologue in the many successful cases of more or less complete gastrectomy which have been carried out on human beings. Further, achlorhydria is a relatively common occurrence in apparently normal individuals and is not associated with any digestive disturbances Finally, Dodds and Bennett[4] carried out a series of experiments on themselves in which they introduced a neutral food into the duodenum A fall in the percentage of CO_2 in the alveolar air indicated that normal pancreatic secretion followed this duodenal alimentation A consideration of all these facts led me to reinvestigate the mechanism of pancreatic secretion At the outset I assumed the accuracy of the prosecretin hypothesis and made secretin extracts by boiling the duodenal mucosa with 0 2 per cent HCl, &c

Distribution of Prosecretin.—Prosecretin varies widely in its distribution in animals. In the carnivorous animal (cat) it is practically limited to the duodenum; in the omnivorous animal (pig) it is found in considerable quantities at least 10 feet from the pyloric sphincter; in the herbivorous animal (goat) large quantities are found not only in the duodenum but also in the ileum This distribution indicated that acids other than hydrochloric were capable of converting prosecretin into secretin To test this hypothesis extracts were made of the duodenal mucous membrane with water containing amino-acids as glutamic acid, leucine, and tyrosine All these extracts contained large quantities of secretin although it may be observed that leucine and tyrosine are neutral to litmus (Mellanby and Huggett)[5]

Preparation of Secretin.—This result led me to explore systematically the conditions under which secretin solutions may be made. Extracts of the duodenal mucous membrane of a pig were made with a variety of solvents and the comparative secretin contents of these extracts were determined The table of figures shows the number of drops of pancreatic juice secreted as the result of injecting 2 c.cm of the following extracts into the femoral vein of a series of anæsthetised cats.—

Extract	Pancreatic juice (drops)	Extract.	Pancreatic juice. (drops)
75 % alcohol .	28	H_2O .	16
75 % acetone	24	0·05 % NaOH .	20
5 % NaCl .	24	0 1 % NaOH .	12
0 7 % NaCl	20	0 2 % HCl . ..	20

From these experiments it was evident that hydrochloric acid possesses no specific capacity for making secretin from prosecretin Latterly I[6] have shown that elevation of temperature is not essential. In fact, the best method for making secretin consists in grinding up the duodenal mucous membrane with four parts of absolute alcohol at room temperature. The filtrate contains a large quantity of secretin in a relatively stable condition since it shows no loss of activity even after considerable periods of time These results prove conclusively that secretin exists in a preformed condition in the mucous membrane of the small intestine, the distribution of this secretin varying in different species of animals

Specific Stimulus for Pancreatic Secretion.—Bayliss and Starling assumed that the formation of secretin from prosecretin by the action of acid chyme led ipso facto to the absorption of this secretion into the blood, and hence to the secretion of pancreatic juice. But if secretin exists in a preformed condition in the duodenal mucous membrane the problem arose as to what particular intestinal event (assuming that secretin calls out the activity of the pancreas) causes the absorption of secretin into the blood and hence to the discharge of pancreatic juice. In the literature on the subject of pancreatic secretion a large number of substances have been described as producing a flow of pancreatic juice when injected into various parts of the alimentary canal. Among such substances may be mentioned hydrochloric acid, water fats soaps, alcohol, mustard, and croton oil A large number of experiments were carried out to investigate these statements On one occasion only a definite secretion of pancreatic juice was obtained—namely, after the injection of 50 c cm of 0 1 per cent HCl into the duodenum of a cat In this case only 10 drops of juice were secreted in 30 minutes It was evident, therefore that the entrance of hydrochloric acid into the duodenum does not constitute the essential stimulus for pancreatic secretion The clue to the solution of the problem was obtained from an experiment in which extracts of various portions of the alimentary canal, alone or in conjunction with one another, were injected into the duodenum of a cat It was found that the injection of a mixture of bile and an acid extract of the pyloric mucous membrane was followed by a copious secretion of pancreatic juice After a latent period of ten minutes pancreatic juice was secreted at the rate of two drops a minute, and the secretion continued for two hours At the end of that time 6 c cm of pancreatic juice had been collected

Dilute Bile into the Duodenum—An analysis of this result showed that the effect was due to the introduction of dilute bile into the duodenum, the addition of the acid extract of the pyloric mucous membrane having conferred on the bile the adequate reaction for calling out its activity. The following experimental results illustrate the essential facts

10 c cm of dilute acidified bile (2 c cm bile, 8 c cm 0 9 per cent NaCl 0 05 c cm HCl N) was injected into the duodenum of a fed cat After a short latent period (five minutes) pancreatic juice was rapidly secreted, thus —

Minutes	Pancreatic juice (drops)	Minutes	Pancreatic juice (drops)
5	1	24	40
7	5	36	60
9	10	65	80
13	20	95	100

An analysis of this result showed that the essential factor was the cholic acid contained in the bile-salts, since the injection of pure sodium cholate of an adequate reaction into the duodenum led to a large secretion of pancreatic juice

Function of Mucin in Bile—The injection of bile-salts or bile-acids into the gut often led to hæmolysis and hæmoglobinuria This fact suggested a possible function for mucin Therefore the comparative activities of bile (A) and mucin-free bile (B) as pancreatic excitants were determined

Pancreatic juice (drops)	A		B	
	Hrs	Mins	Hrs	Mins
1	0	54	0	22
5	0	58	0	29
10	1	16	0	34
20	1	21	0	47
40	1	32	0	57
90	2	20	1	5
120	2	53	—	—

The result indicates that mucin delays the absorption of bile-salts and thereby prevents hæmolysis of the red cells of blood whilst prolonging the action on the pancreas

The Adequate Reaction of Bile—I have stated that bile injected into the duodenum should possess an adequate reaction in order to cause a secretion of pancreatic juice During this investigation it was observed that the injection of bile, which had been rendered slightly acid, into the duodenum in the majority of cases caused a copious secretion of pancreatic juice In a few cases, however, practically no juice was secreted A detailed investigation into this fact showed that the state of alimentary activity of the animal exercised a great influence on the capacity of any given bile to evoke a secretion of pancreatic juice Briefly stated, a recently fed cat (within four hours of feeding) gave a large secretion of pancreatic juice after the injection of slightly acidified bile (pH 6 5) into the duodenum, if, however, the cat had not been fed for 24 hours the effective pancreatic stimulant was the injection of a slightly alkaline bile (pH 8 0) into the duodenum. This fact illustrates the influence of reaction on the activities of the alimentary canal

SECRETIN AS THE CAUSE OF PANCREATIC ACTIVITY

I have shown that bile injected into the duodenum calls out a secretion of pancreatic juice, and that the active substance in the bile is cholic acid I now propose to consider the question whether the immediate agent stimulating the pancreas to activity is cholic acid, or secretin, or some hitherto undescribed substance The direct injection of cholic acid into the blood causes no secretion of pancreatic juice Therefore cholic acid is not the immediate stimulant to the pancreas On the other hand the injection of cholic acid into the duodenum calls out a secretion of pancreatic juice, whereas a similar injection into the ileum evokes no pancreatic response In both cases the solution of cholic acid appears to be absorbed The essential difference between the duodenum and ileum in the cat is that the former contains preformed secretin in the mucosa whilst the latter contains no secretin It appears, therefore, that the absorption of cholic acid from the duodenum carries the secretin contained in the cells of the mucous membrane into the blood and thence to the pancreas, and that the immediate pancreatic stimulus is secretin carried to the pancreas by cholic acid This assumption receives substantial support from experiments in which the vagus and sympathetic nerves were paralysed by atropine and ergotamine respectively

Paralysis of Vagus by Atropine—It is a well known fact that paralysis of the vagus by atropine does not diminish, but slightly increases, the quantity of pancreatic juice secreted after the intravenous injection of secretin into an animal The following experiment shows that vagal paralysis gives similar results on pancreatic secretion after the injection of dilute bile into the duodenum

Pancreatic juice (drops)	A		B	
	Mins	Secs	Mins	Secs
1	9	40	0	20
10	9	30	6	35
20	13	35	11	54
40	24	22	20	0
60	36	40	28	12

Secretion A was obtained after the injection of 10 c cm dilute bile (pH 6 5) into the duodenum After the cessation of this secretion 10 mg of atropine were injected into the cat Complete paralysis of the vagus ensued Table B shows the rate of pancreatic secretion subsequently produced by the injection of bile similar to that used in experiment A The figures show an augmentation of secretion similar to that observed after the direct injection of secretin into the blood

Paralysis of the Motor Side of the Sympathetic by Ergotamine—Paralysis of the sympathetic by the intravenous injection of ergotamine (1 mg) does not diminish the pancreatic activity of secretin injected directly into the blood Similarly, ergotamine does not diminish the capacity of bile injected into the duodenum to cause a secretion of pancreatic juice The inability of vagal and sympathetic paralysis to influence the efficacy of an injection of bile into the duodenum to stimulate the pancreas affords strong evidence in favour of the assumption that the immediate stimulus to pancreatic activity is the presence of secretin in the blood

RELATION OF SECRETIN TO BILE-SALTS—THE ISOLATION OF SECRETIN

It is evident from the foregoing statements that the presence of bile of an adequate reaction in the small intestine causes secretin to pass from the cells of the mucosa into the blood and hence leads to a secretion of pancreatic juice The probable mechanism of this secretion is indicated by the method I have described for the isolation of secretin This method is based on three observations: (*a*) secretin exists in a preformed condition in the duodenal mucosa: (*b*) secretin may be extracted from the mucous membrane by absolute alcohol; and (*c*) secretin is adsorbed from solution by precipitated bile-acids. A preliminary account of this method has been published In this lecture I wish to emphasise the fact that the addition of bile-salts to the extract of 0.2 per cent. to an acid solution of secretin results in the precipitation of bile-acids to which the whole of the secretin is adsorbed This observation probably indicates the essential mechanism whereby the introduction of bile-salts into the duodenum causes a secretion of pancreatic juice—viz. the bile-salts in their passage through the intestinal mucosa adsorb the secretin contained in the cells, and thereby carry it into the blood, and so to the pancreas. Secretin isolated by bile-salt precipitation possesses a remarkable degree of activity. since 0.03 mg. evokes the secretion of 3 c.cm of pancreatic juice in a cat It is freely soluble in water and a strong solution gives a faint biuret reaction and a definite Pauly reaction Since Millon's test is negative the positive Pauly reaction probably indicates that secretin contains histidine or some derivative of it in its molecule It is very rapidly destroyed by pepsin and trypsin Heating to 100° C with NaOH (0.1 M) for five minutes destroys it: similar heating with HCl (0.1 M) destroys 50 per cent of it. These properties indicate that secretin is a polypeptide Purified secretin exercises no depressant action on the blood pressure. Incidentally it may be observed that although secretin possesses properties very similar to those of insulin, yet a subcutaneous injection of secretin has no effect on the blood-sugar of a rabbit, although such an injection causes a slow flow of pancreatic juice. Therefore its action is limited to the external secretion of the pancreas, and it has no effect on carbohydrate metabolism either directly or indirectly through an action on the islets of Langerhans

The Path of Absorption of Secretin [8]

In 1917 Djenab[9] stated that secretin injected into the portal circulation is a much less effective stimulant of pancreatic secretion than when injected into the jugular vein. This observation has been confirmed by many observers (Halliburton and de Souza[10] Cowgill and Deuel[11]) Since the obvious path of absorption of secretin is via the portal blood these results indicated that secretin is not necessary for the production of pancreatic juice in the normal animal. The experimental results described by Djenab are invariably obtained when crude secretin solutions are injected in turn into the femoral and mesenteric veins The diminished secretion in the latter case is very striking Thus in one experiment the injection of 2 c.cm of secretin into the femoral vein of a cat resulted in the production of 25 drops of pancreatic juice whilst a similar injection into the mesenteric vein caused the secretion of only 10 drops of juice. It is evident that this apparently anomalous action of secretin may be due to one of two causes: (*a*) the initial action of secretin on the liver. or (*b*) the absorption of secretin from the intestinal mucosa into the lacteals and its indirect passage into the blood

Bayliss and Starling in their original paper. stated that secretin in addition to stimulating the pancreas to activity doubles the rate of flow of bile. It appeared. therefore that an injection of secretin into the portal circulation would result in the secretin acting as a cholagogue rather than as a stimulant of pancreatic secretion This hypothesis was tested by determining the relative capacities of secretin to act as a cholagogue when injected into the femoral vein and into the portal vein It was found that the hypothesis was incorrect since secretin was a less effective stimulant to the liver when injected into the portal vein than when injected into the femoral vein As an alternative hypothesis it was assumed that secretin was absorbed into the lacteals from the intestinal mucosa and passed indirectly into the blood through the left thoracic duct This hypothesis appeared to be supported by the well-known observation that a meal of fat promotes the secretion of a large quantity of pancreatic juice in a dog with a pancreatic fistula This hypothesis also was tried by direct experiment. In this case the efficacy of bile injected into the duodenum to cause a secretion of pancreatic juice before and after tying the left thoracic duct was determined. It was found that the ligature of the thoracic duct neither increased nor diminished the secretion of pancreatic juice produced after the injection of dilute bile into the duodenum No evidence was therefore obtained that secretion or any other alimentary stimulant to pancreatic secretion was absorbed into the lymphatic system of the intestine. The correct explanation of Djenab's striking results was obtained from the comparative effects on pancreatic secretion produced by the injection of pure secretin into the portal and the femoral vein respectively. This experiment showed that there is practically no difference in the amount of pancreatic juice secreted after the injection of pure secretin into the portal or the femoral blood. Thus 0.05 mg. of secretin contained in 1 c.cm of 0.9 per cent. NaCl was injected in turn into the femoral vein and a small branch of the mesenteric vein of a cat In the former case the total secretion amounted to 60 drops in the latter case to 50 drops of pancreatic juice Probably the anomalous results obtained when crude secretin extracts are injected into the two circulations are due to the association of the secretin in such extracts with other substances which are removed from the portal blood when passing through the liver. The results may illustrate the importance of the liver in protecting the body against the absorption of poisons from the alimentary canal—a liver function which has been emphasised by Willcox[12] and designated by the word toxiphylactic.

Influence of the Vagus Nerve on the Composition of Pancreatic Juice [13]

I have previously confined myself to the consideration of the humoral control of pancreatic secretion. In this section I propose to consider the part played by the nervous system in the mechanism

Previous to the discovery of secretin the nervous mechanism was supposed to play the dominant rôle in pancreatic secretion But whereas in acute experiments on dogs under general anæsthesia injections of secretin may produce 150 c.cm of pancreatic juice in the course of a few hours stimulation of the vagus nerves either by electrical methods or by the intravenous injection of small doses of pilocarpine rarely produces 10 c.cm of pancreatic juice in a similar time. Further, it was shown that the quantity of pancreatic juice secreted as the result of the intravenous injection of secretin was independent of the paralysis of the vagus by atropine On the basis of these results it was assumed generally that secretin played the dominant rôle in pancreatic secretion and that the vagus took only a minor part in the mechanism. and possibly only came into action as the immediate result of taking food Two facts however. militated against this hypothesis. (*a*) the extraordinary concentration of enzymes contained in vagal pancreatic juice, and (*b*) clinical observations on cases of dyspepsia. A detailed examination of the quantity and quality of pancreatic juice under a variety of conditions established the important function of the vagus nerve in pancreatic secretin

The composition of seven successive quantities of pancreatic juice secreted by a cat under the influence of secretin was determined The following figures show the quantities of sodium bicarbonate. trypsinogen, and amylase in these fractions:—

Per cent of $NaHCO_3$ (N)—						
0.125	0.124	0.134	0.128	0.132	0.128	0.124
Units of trypsinogen—						
665	640	360	400	230	260	130
Units of amylase—						
340	290	160	100	70	70	60

Two facts are evident from these figures: (*a*) throughout the experiment the quantity of

$NaHCO_3$ contained in the successive portions of juice remained approximately constant about a mean value of 0·128 N *per cent*; and (*b*) the quantities of trypsinogen and amylase continually decreased during secretion, the final fraction containing less than one-quarter of trypsinogen and one-sixth of amylase of the quantities in the first fraction.

This result might have been due to the exhaustion of the fluid under the secretin stimulus. This hypothesis, however, does not accord with the histological appearance of the gland at the end of a long period of activity produced by secretin Moreover, it is directly negatived by the effect of vagal stimulation (by the intravenous injection of pilocarpine) after the apparent exhaustion of the gland by the action of secretin

The following figures show this effect of vagal stimulation —

Secretin only					Secretin containing 2 mg pilocarpine
Per cent of $NaHCO_3$ (N)—					
0 150	0 158	0 156	0 148	0 146	0 146
Units of trypsinogen—					
1350	1300	1150	800	600	1300
Units of amylase—					
270	210	160	160	60	200

The figures show the constancy of the bicarbonate and the steady diminution in trypsinogen and amylase in successive fractions of the pancreatic juice secreted under the stimulus of secretin only, but after the injection of pilocarpine—i e, after the stimulation of the vagal endings in the gland—the quantity of alkali remained the same, but the trypsin and amylase contents of the juice were raised to approximately their initial concentration These and a series of similar experiments illustrate the relative functions of secretin and the vagus nerves in the mechanism of pancreatic secretion Briefly stated, it seems that the metabolism of the enzymes of the pancreas is under the control of the vagus nerves, whilst the quantity of fluid and the bicarbonate content of this fluid is determined by secretin

Secretin, therefore, determines the presence in the intestine of the pancreatic enzymes in a large volume of sodium bicarbonate solution. This solution possesses an optimum reaction for the activity of lipase, amylase, and trypsin, and is able to preserve the neutrality of the intestinal contents during digestion This dual hypothesis coordinates the views of Pavlov and his fellow workers on the function of the vagus in pancreatic digestion with the work of Bayliss and Starling on the humoral control of pancreatic secretion

Discharge of Bile into the Duodenum

I propose to deal in a brief way only with this subject The majority of animals possess a gall-bladder which acts as a reservoir for the storage of bile during the quiescent periods of digestion A few animals, such as the horse and rat, possess no gall-bladder, but in these animals the biliary passages are dilated so as to form a comparatively large reservoir for bile It is evident, therefore, that the discharge of bile into the duodenum must be considered from two points of view (*a*) the relaxation of the common bile-duct leading into the duodenum, (*b*) the contraction of the gall-bladder

(*a*) The mechanism of this reaction has been variously stated to be under the control of the vagus and sympathetic system of nerves, and also to be due to a local reflex from the intestine to the gall-bladder It appears, however, that the mechanism is more simple There is no doubt but that the passage of a peristaltic wave of contraction from the pylorus greatly diminishes for a few seconds the pressure required to force fluid from the common bile duct through the ampulla of Vater into the duodenum This effect is doubtless due to the obliquity of the entrance of the common bile-duct into the duodenum, and to the fact that the peristaltic wave of contraction is always preceded by a definite wave of relaxation This wave of *relaxation* practically annuls the contraction of the sphincter around the entrance of the bile-duct into the duodenum

(*b*) As a subsidiary factor, however, the contraction of the gall-bladder must be considered In a fasting animal the gall-bladder is always distended with bile, in a recently fed animal the gall bladder is practically empty despite the fact that the natural flow of bile is directly into the gall-bladder If strips of gall bladder are suspended in warm oxygenated Ringer a well-marked contraction is produced by adding a trace of pure secretin to the fluid It appears, therefore, that secretin absorbed into the blood not only stimulates the pancreas to secrete, but also contracts down the gall-bladder, and thereby ensures the discharge of bile into the duodenum when a peristaltic wave of contraction passes from the pyloric sphincter down the small intestine

General Considerations

As a result of the observations detailed in this lecture the following may indicate the sequence of events in the normal animal which lead to the orderly secretion of pancreatic juice During the period of alimentary rest the liver continuously secretes bile which is stored in the gall-bladder After eating, usually within 20 minutes, peristaltic waves of contraction pass down the intestine from the pyloric sphincter of the stomach During the passage of these waves the intestinal muscle surrounding the entrance of the common bile-duct into the duodenum is relaxed Bile therefore is forced from the distended gall-bladder into the duodenum This bile is mixed with the contents from the stomach, which gives it an adequate reaction to ensure the absorption of bile-salts through the intestinal mucosa

The bile-salts in their passage through the cells adsorb the preformed secretin contained in them and pass into the portal blood The secretin causes the pancreas to secrete and the liberated bile salt is carried to the liver to cause the secretion of a further quantity of bile In addition the secretin in the portal blood causes the gall-bladder to pass into a state of tonic contraction, so that as it empties the pressure is kept up to ensure the direct discharge of secreted bile into the duodenum The cessation of pancreatic secretion occurs therefore when bile is no longer discharged into the duodenum—i e, when peristaltic waves of contraction cease to be initiated at the pyloric sphincter—and this probably occurs after the emptying of the stomach of food The mechanism admirably illustrates the interdependence of the activities of the pancreas and liver, and correlates the digestive functions of the former with the metabolic activities of the latter

References

1 Popielski Arch. f d ges Physiol, 1901, lxxxvi
2 Bayliss and Starling Jour Physiol, 1902, xxviii, 325
3 Czerny Quoted from Gamgee's *Chemistry of the Anima Body*, 1893, ii, 163
4 Dodds and Bennett Jour Physiol, 1921, lv, 382
5 Mellanby and Huggett Ibid, 1926, lxi, 122
6 Mellanby Proc Physiol Soc, June 5th, 1926
7 Mellanby Jour Physiol, 1926, lxi, 419
8 Mellanby Ibid
9 Djenab Berl Klin Wochenschr, 1917, liv, 524
10 Halliburton and de Souza Arch Int de Physiol, 1921, xviii, 231
11 Cowgill and Deuel Amer Jour Physiol, 1924, lxix, 568
12 Willcox Brit Med. Jour, *Dec 2nd, 1922*
13 Mellanby Jour Physiol, 1925, lx., 85

The following books are announced for publication by Mr Henry Kimpton, *of 263, High Holborn*, London, W C —"Orthodontics An Historical Review of its Origin and Evolution, including an *extensive Bibliography of* Orthodontic Literature up to the time of Specialisation," by Bernhard Wolf Weinberger, D D S, New York, and published in two volumes of *1000 pages containing nearly 600 illustrations*, "The Pathology and Treatment of the Inflammatory Diseases of the Nasal Accessory Sinuses," by Prof M Hajek, of Vienna, translated by Dr Joseph D Heitger, and "Nasal Neurology, Headaches and Eye Disorders," *by Prof Greenfield* Sluder, Washington University of St Louis

THE EFFECTS OF FEEDING ANTERIOR LOBE PITUITARY EXTRACT TO CHILDREN.

By H. GARDINER-HILL, M.B. CAMB., M.R.C.P. LOND.,
AND
J. FOREST SMITH, M.R.C.P. LOND.

(*From the Clinical Medical Unit, St. Thomas's Hospital.*)

THIS paper is a preliminary report on the effects of feeding anterior lobe pituitary extracts to children. The observations have extended over a period of one year. It has frequently been held that such preparations when given by the mouth, are entirely inert but the extracts we have used appear to influence both growth and metabolism, and in the former connexion at any rate corroborate the experimental work on amphibians, and more recent work on other animals.

In dealing with children, however, there are a number of factors one cannot control. In connexion with growth particularly it is impossible to say what the course of events might have been had treatment not been undertaken. The age at which different children begin to grow varies considerably and the liability of even the most under-developed to sudden spurts is well recognised In the cases mentioned in the present paper, however, the condition before treatment appears to have been either stationary or steadily deteriorating and there were in all cases associated disturbances of metabolism which have also been improved by treatment.

Type of Case Investigated.

The cases we have investigated fall into three groups—first, children with infantilism and defective growth: secondly, older female children with minor degrees of this condition and disturbances of menstruation: and thirdly, children with obesity of the apparently endogenous type.

In the first group, where the main features are infantilism and defective growth, anterior lobe feeding appears to have produced a stimulation of growth and bone development and an improvement in carbohydrate metabolism

In the second group where the main features are poor development with irregular and scanty menstruation, also associated with defective carbohydrate metabolism, anterior lobe feeding appears to have brought about an increase in the frequency and quantity of the menstrual losses with a similar improvement in metabolism No instance has been noted, however of the onset of menstruation occurring as a result of treatment in girls of this type with primary amenorrhœa.

In the third group, where the main feature is obesity of the endogenous type we have not been able to observe any noticeable diminution of weight as a result of anterior lobe feeding This is contrary to the usual statements There does however, appear to have been an improvement in carbohydrate metabolism as a result of treatment. The patients seem generally to have gained rather than lost weight. In females of this group a beneficial effect on menstruation has been noted. and this is probably a point worth taking into consideration, when the tendency of these children to periods of amenorrhœa is remembered

It is obvious, of course that in none of the groups that we have mentioned can a positive diagnosis of pituitary disturbance be made in the present state of our knowledge In the absence of a tumour of the gland, there is no known means of making this diagnosis In none of the cases of the present series was there any evidence of a pituitary tumour and if there had been, little benefit could have been expected from anterior lobe treatment. On the other hand, the clinical features, the disturbances of growth and bone development, of genital function and carbohydrate metabolism, which are presented in these children, bear such a striking resemblance to those seen in pituitary disease, that one is tempted to explain them on a pituitary basis. There can be no absolute justification for this and none is offered It is suggested only that these children are not normal from the point of view of development or function, and that the course of events can probably be modified to some extent and benefit derived from the administration of anterior lobe pituitary extract.

Functions of Anterior Lobe of Pituitary

Before going into the question of our results, brief reference may be made to the most recent experimental work in animals, both ablation and feeding experiments, as they throw additional light on the functions of this part of the gland Paulesco,[1] Cushing,[2] Aschner,[3] and others showed originally that partial removal of the anterior lobe in animals leads to obesity, genital hypoplasia, and lack of development of the skeleton with undergrowth Since then other observers have repeated these experiments. and although there is general agreement as to the lack of growth and genital hypoplasia, there has been some difference of opinion as to whether the operation is followed by obesity. Bell[4] did not find it, although in his experience it did follow the operations of compression and separation of the stalk. Recently Dott[5] has carried out a series of experiments in dogs, and also made a thorough review of the literature of this subject. Taking all the evidence into consideration he concludes that a syndrome—namely, depression of temperature, lethargy, obesity, retardation of growth and degenerative changes in the thyroid and genital glands—results from partial removal of the anterior lobe, or injury to its blood-supply, or from equivalent experiments Dott and Fraser,[6] in a report to the Medical Research Council, have also shown that partial removal of the anterior lobe leads to disturbances of bone development. There is a decrease in epiphyseal activity with degeneration of cartilage and diminution of activity at the ossifying junction They also found that by feeding their animals with anterior lobe extracts, an increase of epiphyseal activity with intense ossification at the epiphyseal junction took place Radiological studies confirmed these observations. The effect of anterior lobe feeding on the general state of the animal was to accelerate growth and development. They suggest, however, that anterior lobe feeding does not produce gigantism, for though the animals grow faster and mature earlier, their epiphyses ossify sooner and the normal limits of stature are not exceeded Positive results with anterior lobe feeding experiments have been reported by previous observers, notably Schafer,[7] Goetsch[8] and Marinus.[9]

A considerable amount of work has also been done on the relationship between the thyroid gland and the anterior lobe of the pituitary, chiefly by Loeb[10] Biedl,[11] and recently by Dott The latter found in his animal experiments that partial removal of the anterior lobe was followed by a thyroid hyperplasia of some seven days' duration with subsequent involutionary changes and hypoplasia. Anterior lobe feeding however, produced no obvious changes in the thyroid histology. In another series of animals after thyroidectomy there was a hyperplasia of the anterior lobe of the pituitary to double the normal size In this series no obvious changes in the pituitary body followed thyroid feeding

As to the experimental work on the relationship between the anterior lobe of the pituitary and the genital glands various observers, notably Paulesco Cushing Aschner and Dott, have shown that partial removal of the anterior lobe in young animals leads to a syndrome of infantilism. The animals remain infantile in size, configuration behaviour, and sexuality. The secondary sexual characteristics fail to develop Dott has reported atrophy of the testicles following this operation, and in the female animals functional disturbances of the generative organs, as the failure to come on heat At post-mortem the uterus and tubes were found to be smaller than even the infantile size of the animal would warrant Histologically, the ovaries showed definite degenerative changes As a result of anterior lobe feeding, on the other hand, he found an acceleration of ovarian development, the follicles being much larger than in the control animals Sexual function was also established at an earlier date

From this brief review of the experimental work in connexion with the anterior lobe, it seems fairly reasonable to conclude that it is intimately connected at any rate with growth and genital function, leaving the question of obesity still for the present sub judice, also that, following its partial removal, degenerative changes occur in the thyroid and genital glands It also seems clear that feeding experiments with anterior lobe extracts in animals give positive results on growth and bone development From the results of treatment with these extracts in children, we are hoping to show that similar results can sometimes be expected

GROUP 1 —*Effect of Anterior Lobe Feeding in Infantilism.*

As illustrations of the first group of cases of children with infantilism, lack of development, and defective growth, details of two infantile boys, both 12 years of age, who have been treated with anterior lobe pituitary extract with considerable benefit and acceleration of growth are given.

1. F V., aged 12 This boy was sent to hospital for lack of growth This was first noticed at the age of 8, and since then his mother had kept accurate measurements of his height from time to time Between the ages of 8 and 11 he grew at the rate of 1 inch (roughly 2½ cm) per annum, but during the following year (11 to 12), the year before he came under treatment, his rate of growth fell to half an inch (1 25 cm) per annum This, of course, is considerably below the average rate of about 5 cm per annum for a boy of this age

When he was first examined by us he appeared to be a miniature of the so-called hypopituitary type of individual, rather plump, very under grown and under-developed, but mentally alert He formed a most striking contrast to his brother, who was only three years older but 2 feet taller and 4 st heavier, and from the secondary sexual characteristics point of view most remarkably developed for a boy of 15. His mother was a small woman, his father of average build The boy had apparently been always remarkably free from illness and there was no history or evidence of any of the usual complaints with which infantilism is generally associated His height was 106 cm The average for a boy of this age is about 140 cm He was longer in the trunk than in the limbs, the symphysis vertex measurement being 54 5 cm , symphysis soles 50 5 The sella turcica was about average size The visual fields were normal His bone development was considerably delayed, being that of a child of 7 The centre for the semilunar bone of the wrist should normally appear at the age of 5 In this boy the centre had not yet appeared in the left wrist, and was only just appearing in the right, when he was first brought to hospital at the age of 12

Pituitary treatment was started in October, 1924 He has been given desiccated anterior lobe extract (Armour) by the mouth in gradually increasing doses, and for the second six months of treatment has been taking 15 gr a day In the course of a year he has grown 7 25 cm as against 1 25 in the previous year He has had no other treatment His bone development has advanced to a corresponding extent. X ray photographs taken at intervals of about three months give a good idea of this There are now very well-developed centres for the semilunar bones in each wrist, and the centre for the pisiform is also present This does not appear normally until the twelfth year The bones are still, of course, below average size, but as far as the appearance of epiphysial centres goes, bone development is now reported on as " about normal " During the year he has also gained steadily in weight. When he first came to hospital he weighed 3 st 1 lb At the end of his year's treatment his weight had increased to 3 st 8½ lb , a gain of 7½ lb —about 17 per cent of his original weight

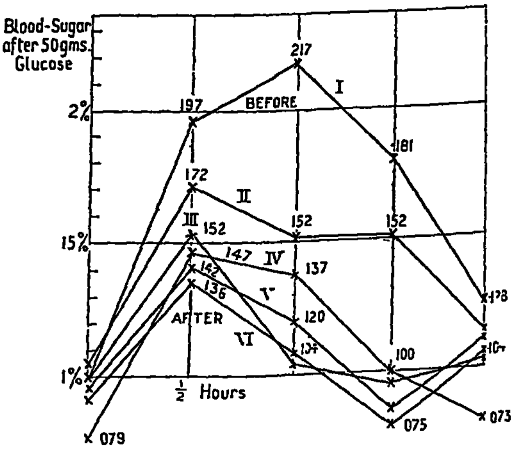
There has also been a considerable improvement in his carbohydrate metabolism as judged by the results of carbohydrate-tolerance tests (obtained by estimating the blood-sugar at half-hourly intervals after 50 g of glucose) The whole question of the improvement of the carbohydrate metabolism after anterior lobe feeding is dealt with later in this paper But in this case, as in the others, a preliminary decreased tolerance which we have regarded as a sign of inability to deal with sugar has become increased after treatment to a level above the normal

This case has been recorded in some detail as the results have been so striking, and it is difficult to explain them except on the assumption that the anterior lobe extracts are active and have influenced metabolism Previously the boy's condition was apparently steadily deteriorating, and there was no reason to suppose that any spontaneous improvement was on the point of taking place This possibility however, must not be entirely overlooked

We have at the present moment a number of these infantile children under treatment with anterior lobe extract, but the majority were only started a few months ago, when we found that our trials were proving fruitful It is early yet to make any definite statements as to increase in growth and bone development, but the carbohydrate metabolism appears to be following the course already described One other infantile boy, however, was put on this treatment a year ago, after a period of observation and treatment for ten months with cod-liver oil. The result has been the same

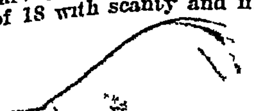
C C , aged 12 This boy's height when he started treatment was 118 cm , the average for a boy of his age being 140 cm His weight was 3 st 10 lb , as against the average for age of 5 st 6 lb He was far below average in development, though his mentality was alert. His bone development was delayed, but to nothing like the same extent as in the first case mentioned His sella turcica was about normal for a boy of his size. His Wassermann reaction was negative , his sugar tolerance considerably decreased Treatment with anterior lobe pituitary extract was commenced in November, 1924 The dose was gradually increased to 15 gr a day In the course of a year he has grown 6 cm , a rate which is slightly in excess of the average for his age During the previous ten months, whilst he was under observation and on cod-liver oil, he only grew 3 cm. The rate of growth has been almost doubled His bone development has advanced but is still behind the normal, the centre for the pisiform bone not having yet appeared His weight has increased to 4 st 7 lb since starting anterior lobe pituitary treatment This is a gain of 8 lb in the year During the previous year he only gained 2 lb Sugar-tolerance estimations show the same improvement which was noted in the first case The actual curves before and after treatment are demonstrated in Chart 1 Again, it is difficult to account for the improvement, except on the assumption that the extracts are active

CHART 1



GROUP 2 —*Effect of Anterior Lobe Feeding in Undeveloped Girls with Menstrual Disturbance*

As illustrations of the second group of cases of older female children with lack of development and menstrual disturbance, we would like to mention two examples, who derived benefit from anterior lobe treatment They represent different grades of severity of the same condition The first is an undeveloped girl of 19 with primary amenorrhœa The second an undeveloped girl of 18 with scanty and irregular



menstruation. In the first, the more advanced case menstruation has *not* commenced in spite of anterior lobe treatment for five months, although there has been a very definite improvement in metabolism. This has been our experience in other cases of this type, where puberty is considerably delayed. Anterior lobe extract does not appear to be effective in inducing menstruation under these circumstances. One supposes that the atrophic condition of the pelvic organs has become too far advanced. But in other ways these girls are markedly under-developed and poorly nourished. Their bone development is behind the average; their ability to utilise sugar, as judged by the results of sugar-tolerance tests, defective. And it is from the metabolic aspect that we have noticed improvement as a result of anterior lobe treatment. The details of this case are as follows:—

D. H., aged 19. This girl was sent for examination because menstruation had not yet started. Pelvic examination in the gynæcological department showed that the uterus was of the infantile type and extremely small. Her height was only 146 cm., her weight only 5 st. 8 lb. She is said to have stopped growing at the age of 10. Her bone development was considerably delayed, the epiphyses being still widely open. Her mentality was infantile. In addition to her menstrual trouble she also suffered from periodic frontal headaches which were accompanied by epistaxis. Her carbohydrate tolerance was markedly decreased. She has been treated on anterior lobe pituitary extract for five months with a considerable improvement in her general condition and metabolism. She has grown 2¾ cm. in that time—that is, at the rate of 5½ cm. per annum—growth previously being at a standstill for nine years. Her menstruation, however, has not started, though the periodic headaches with epistaxis have entirely ceased since the onset of treatment. Her weight has remained stationary. Improvement was shown in her sugar-tolerance curves.

The second case in this group illustrates the very considerable improvement in menstruation which results from anterior lobe treatment in the less advanced cases of this type. In these girls, after a normal or somewhat delayed onset, the menstrual losses tend to get more and more irregular and are finally followed by periods of amenorrhœa. These patients are also to some extent underdeveloped and poorly nourished. Their bone development is delayed and their ability to utilise sugar defective. As a result of anterior lobe pituitary treatment, the quantity and normal rhythm of the menstrual losses can to a large extent be re-established. This is accompanied by a similar improvement in metabolism.

The details of this second case are as follows:—

D. D., aged 18. Infantile type with poor development, started menstruating at the age of 13½, but the losses have always been irregular and scanty, occurring at intervals of from nine weeks to nine months. Immediately preceding treatment they had occurred at eight-weekly intervals on the last four occasions. Menstruation had always been accompanied by severe frontal headaches which were becoming steadily worse. On the last four occasions they had been of the migrainous type and accompanied by vomiting. She commenced treatment with anterior lobe pituitary extract and the dose was gradually worked up from 1 gr. three times a day to 5 gr. three times a day. She menstruated four times in the four succeeding months—on Nov. 12th, Dec. 15th, Jan. 18th, and Feb. 20th. The first period was accompanied by a characteristic headache with sickness, the second by a headache only, the last two were entirely free. She gained 5 lb. in weight in the four months. Her carbohydrate tolerance test, which in the first place showed a considerable decrease, at this stage gave a normal result.

GROUP 3.—*Effect of Anterior Lobe Pituitary Extract in Adolescent Obesity.*

In our experience there appear to be three main types of obese children. First, the type described by Frohlich[12] in which obesity is associated with lack of growth, delayed bone development, and genital hypoplasia. A pituitary tumour is sometimes present in these cases, though in others the disturbance seems to be one of pituitary function only. Secondly, a type in which the onset of obesity is accompanied by a period of accelerated growth and advanced development of bone and genital function which is well up to the average or even in excess of it. We have suggested elsewhere[13] that in these cases there is a preliminary period of over-activity of the anterior lobe. They do not ultimately become giants, because their epiphyses fuse early and growth ceases soon after puberty. Thirdly, a type in which obesity is accompanied by bodily development of the eunuchoid type and genital hypoplasia. The epiphyses remain open far longer than in the normal person and the obesity tends to diminish to some extent as growth advances. These patients often become taller than the average and continue growing beyond the average age.

The two cases described in this paper belong to the second type of adolescent obesity. On theoretical grounds, of course, it would be in the first type (provided the disturbance was one of function only) that benefit might be expected from this treatment. Unfortunately, we have not met with a case of this type recently and others have been treated with thyroid in addition to anterior lobe pituitary extract, as the latter does not reduce their obesity. The results consequently are of no value from the present standpoint. The giving of anterior pituitary to these two cases resulted in the same effect on the carbohydrate metabolism that we have previously described, but this method of treatment is not effective in reducing their obesity.

The first case in this group, S. E., aged 9, is a boy of average height and development, who had been gaining weight for about six months. When first seen, he was about a stone above the average in weight for his height and age. His sella turcica was small, his carbohydrate tolerance considerably decreased. For the past ten months he had suffered from fits of an epileptiform nature, occurring at intervals of from one to seven weeks. He was treated with anterior lobe pituitary extract, 1 gr. three times a day for a period of nine weeks, during which time he gained 9 lb. in weight. His fits occurred about once a week during this time. His carbohydrate metabolism, however, altered in a characteristic way, a previously low tolerance being considerably increased.

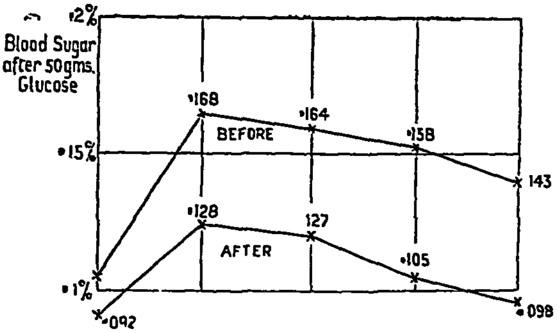
The second boy, D. L., aged 15, had developed obesity at the age of 10. The onset was sudden and accompanied by headaches. Previously he had been thin. When he was first brought to hospital he weighed 15 st. 2 lb., was above the average in height, and well developed. There was no evidence of pituitary tumour. His sella turcica was small, his visual fields and fundi normal. His bones were large, though the epiphyses were still unjoined, and at about the average stage of development. He was treated with anterior lobe pituitary extract, 15 gr. a day, for a period of two and a half months, and during this time he gained 9 lb. in weight. The sugar-tolerance curves, before and after treatment, show an increased tolerance still further increased.

Effect on Carbohydrate Metabolism.

The sugar-tolerance curves have been worked out according to MacLean's[14] method. The fasting blood-sugar was first determined, 50 g. of glucose given, and subsequent blood-sugar examinations carried out at half-hourly intervals for two hours. In the normal person the blood-sugar rises from a fasting level of about 0.1 per cent. to 0.17 per cent. or thereabouts at the end of half an hour; after this it falls to the normal level again at the end of an hour and a half. In the cases described in this paper the result has been different, the fall in the blood-sugar curve being gradual and delayed, and only reaching a level of about 0.14 to 0.15 per cent. at the end of two hours. It is assumed by the majority of investigators that the fall in the blood-sugar content is caused by the intervention of a storage mechanism, and that the oxidation of the ingested glucose is only a small factor. On this assumption the delayed curves seen in our cases would be considered to be the result of a defect in storage and represent a loss of power of the body to store sugar. This may or may not be so. We are hoping to obtain further information on this point from simultaneous examinations of the sugar tolerance and respiratory quotient. At the moment, however, our main object is to demonstrate that the sugar-tolerance curves of our patients alter very considerably as a result of treatment with anterior lobe pituitary extract and apparently alter consistently in the same direction The curves after treatment are all low and suggest an increase of carbohydrate tolerance, that is, they appear to represent an increased ability on the part of the body to store a single dose of 50 g of glucose. As a large majority of the patients gained weight on this treatment, there would appear to be some support for this view.

This general reduction in the blood-sugar readings following the administration of anterior lobe pituitary extract by mouth is represented in the chart by a composite curve obtained by averaging the results observed in nine cases before treatment compared with similar results in the same cases after treatment (Chart 2)

CHART 2



Composite curve embodying the nine cases

Type of Case Suitable for Anterior Lobe Treatment

Apart from clinical considerations, which come first in importance in deciding whether a child is a suitable case for the use of anterior lobe pituitary extract, we would like to lay stress on the defective carbohydrate metabolism which we have found present in these children Investigations of the sugar tolerance are of value both from the point of view of diagnosis and from that of control of treatment

It is advisable to make X ray examinations of the bone development Our usual routine is to examine the epiphyses of the lower end of the forearm and hand Where the bone development is delayed some improvement may be expected from treatment In actual practice, however, it is frequently found that some of the older children who are sent to hospital for defective growth have passed through a stage of accelerated growth with premature fusion of the epiphyses Under these circumstances, of course, the possibility of further growth is out of the question

Conclusions

1. Feeding of anterior lobe pituitary extracts by mouth does appear to have some therapeutic value, although the number of cases which we are quoting is too small to allow of dogmatic statements 2 In cases of infantilism, where the epiphyses are not already fused, these extracts appear of value in influencing growth 3 They may prove of value in certain types of amenorrhœa associated with minor degrees of infantilism 4 The effect of these extracts on the blood-sugar curve has been constant in all the cases which we have investigated, but in the present state of our knowledge we cannot attempt to give an explanation of this

References

1 Paulesco, N C L'Hypophyse du Cerveau, Paris, 1908
2 Cushing, Harvey The Pituitary Body and its Disorders, London, 1912
3 Aschner, B Wien Klin Rundschau, 1909, xxii, 1730
4 Bell, W Blair The Pituitary Body, London, 1919
5 Dott, Norman M. Quart Jour Exp Physiol, London, 1923, xiii, 241.
6 Dott, N M, and Fraser, J Report to Med Research Com, London, 1918
7. Schafer, E A Proc Roy Soc, London, 1909, Ser B, lxxxi, 442
8 Goetsch, E Johns Hopkins Hospital Bull, Baltimore, 1916, xxvii, 29.

(Continued at foot of next column)

(Continued from previous column)

9 Marinus, C J Amer Jour Physiol, 1919, xlix, 238
10 Loeb, Leo Jour Med Research, 1924, xliv, 557.
11 Biedl, A Annals of Clin Med December, 1924, iii, No 6, 444–458
12 Fröhlich, A Wien Klin Rundschau, 1900, xv, 883
13 Gardiner Hill, H Jones I, and Smith, J. Forest. Quart Jour Med., London, 1925 18, lxxi, 309
14. MacLean, H Modern Methods in Diagnosis and Treatment of Glycosuria and Diabetes, London, 1924

SECONDARY JEJUNAL ULCERS

AND THEIR RADIOLOGICAL DIAGNOSIS

BY S GILBERT SCOTT, M R.C S, L R C P. LOND,
D M R E CAMB,
RADIOLOGIST AT THE LONDON HOSPITAL

PRIMARY jejunal ulcers, that is those ulcers which form primarily in the jejunum, not secondarily as the result of a gastro-enterostomy, are extremely rare, and a few only have been recorded. These, therefore, will not be considered

Secondary jejunal ulcers, however, are a serious drawback to the otherwise valuable operation of gastro-enterostomy, or, more correctly, jejunostomy, for gastric ulcer That they are a comparatively frequent complication cannot be denied Most authorities agree that in the majority of cases their occurrence is the combined result of trauma and infection, but this does not explain satisfactorily why the jejunum is more susceptible to trauma and infection after operation The acid gastric juices passing directly into the jejunum must, of course, play an important part in exaggerating a slight trauma. Unabsorbed sutures around the stoma are known to be one of the causes of ulceration, but this condition will not account for ulcers occurring well away from the site of operation

Joekes, by means of the duodenal drainage tube, has definitely established the fact that the normal contents of the jejunum in the human being are, if anything, slightly alkaline, but certainly not acid. Thus it would appear that damage to the lining mucous membrane of the jejunum is more than likely to occur when the very acid contents come in direct contact with it Its structure is not acid-resisting as is that of the stomach It seems, therefore, that the post-operative procedure of giving alkalines is sound, but it is doubtful whether this treatment achieves its object in all cases The duodenal drainage-tube might be used to investigate this point

There is another possible contributory cause However carefully a patient may be fed while under observation, the time comes when he is left to himself, and may find dieting very irksome; even if he does not have an occasional " bust," it is more than likely he will eat unsuitable food, and this will probably be imperfectly masticated

In the majority of cases examined radiologically, food is seen to pass almost directly through the stoma, the stomach, therefore, has but little opportunity of fulfilling its function as a digestive organ, consequently the jejunum and small intestine are at a great disadvantage, having to deal with food that has undergone little or no gastric digestion Thus it is surprising that the jejunal mucous membrane does not more often resent this ill-usage No doubt, with time, the jejunum can adjust itself to the new conditions and eventually become acid-resisting

The Rôle of Faulty Mastication.

Faulty mastication of food, due to many causes, including carelessness and hasty eating, is, I believe, the primary cause of 90 per cent of gastric ulcers

> " A man eats and walks
> As fast as his thoughts ! "

It needs but a small abrasion of the mucous membrane to form an ulcer, while a septic mouth, of course, renders the chances of bacterial invasion more probable As with the skin, an unbroken surface can

withstand infection while a pinprick may be sufficient to cause death

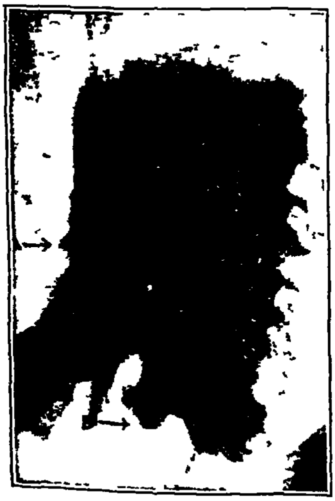
This theory, however, does not hold in those cases where foreign bodies get imprisoned in the stomach I have examined a mentally deficient patient who had over twenty articles in her stomach, including a meat hook, gas burner, keys, &c , yet at operation for their removal no ulceration of the mucous membrane could be detected. In the radiographic examination of the urinary tract I have found a sixpence that had been swallowed unknowingly in a Christmas pudding, some six months previously, yet the patient had no gastric symptoms whatever.

The Detection of Jejunal Ulceration.

The radiologist, in the course of his gastric work, examines many cases where symptoms point to ulceration of the jejunum after gastro-enterostomy, but such ulceration is probably seldom detected Personally, up to a few years ago, I had to content myself with merely reporting on the functioning powers of the stoma and with the examination of the stomach and duodenum, direct evidence of a jejunal ulcer was seldom obtained This was owing to faulty technique ; the large majority of these ulcers can now be accurately located.

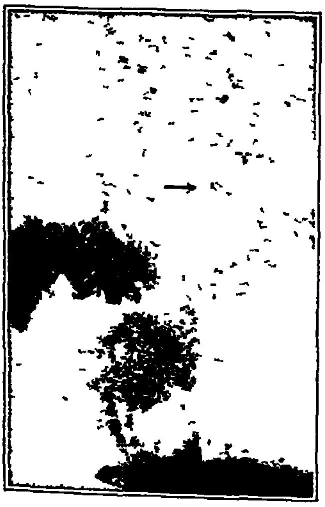
The method employed is based on the same principles as those used for gastric work—i e , systematic radioscopic palpation, details of which are given in the *Archives*, 1923, and in THE LANCET, 1922 Radioscopic palpation to most radiographers merely means prodding the abdomen after a full opaque meal This has probably been done since the early days of gastric radiology, but will certainly not give the same degree of accuracy in diagnosis as the method about to be described when efficiently practised and developed , it takes time and perseverance to become proficient in the art of palpation

FIG 2



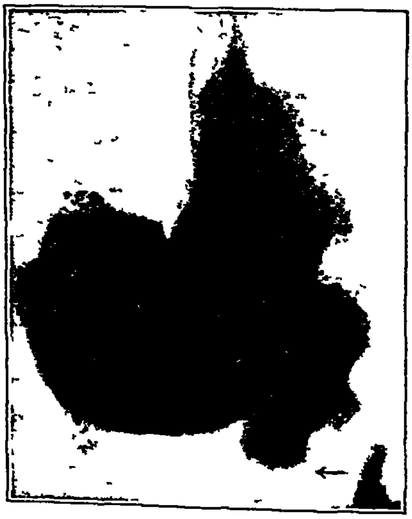
Gastric ulcer (A) and large jejunal ulcer (B)

FIG 3



Jejunal ulcer

FIG 4



Large jejunal ulcer

The main features of the method are as follows ·

(*a*) A meal of a creamy consistency is used I concocted, some years ago, a suitable barium cream for this purpose (now sold under the name of " Ramul ")

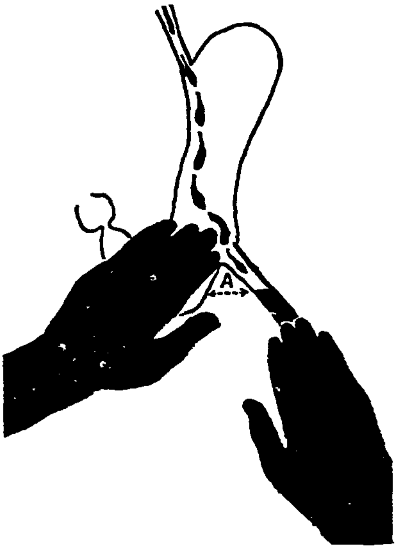
(*b*) Only a small quantity (3 oz.) of this is administered at first, This is important, as a full meal, say of from 6 to 7 oz., will defeat one s object

(*c*) By means of pressure of the hands on the abdomen, the opaque substance comes under full control

(*d*) It is then possible to smear the cream over each section of the mucous membrane systematically I have described this as " whitewashing " the interior of the stomach.

(*e*) The systematic examination of the *whole* stomach and duodenum must be emphasised—that is, the whitewashing process must start at the cardiac end, working down inch by inch and ending at the jejunum.

FIG 1.



Method of palpation, gastro jejunal angle (A)

Full control over the meal by this method takes some time to acquire At first much unnecessary energy is expended as many beginners will admit As in golf, where muscle alone will not send the ba as far as a well-timed swing, so with palpation, swing or knack is required to extract the full diagnostic value from the method

When a case of suspected jejunal ulcer after gastro-enterostomy is being examined, certain modifications of this technique are required The process is as follows —

The patient is instructed to swallow one mouthful only of the opaque cream. This is watched passing down the œsophagus into the cardiac end of the stomach It is then taken in charge by the palpating hands on the abdomen · and being controlled by this means, the emulsion can be carefully manœuvred through the stoma. The business of the left hand is now to prevent, by gentle pressure, any of the meal passing further into the body of the stomach, for, if the pylorus is passed, shadows in the afferent limb of the jejunum will cause confusion The business of the right hand is to dam up the emulsion in the first few inches of the efferent limb This manœuvre is not always easy to accomplish The opaque cream is now manipulated backwards and forwards through the stoma into the jejunum, and back again into the stomach This whitewashing process will cause the opaque substance to adhere to any ulcer crater present, showing itself as a black fleck or spot which remains isolated after the displacement of the contents by pressure This fleck, as in gastric ulcer, shows denser than the surrounding meal The penetrating type of ulcer is more usual and is easier to detect, as a nipple or bud-like projection on the jejunal wall This will also remain filled after displacement of the contents Pressure of the right hand is now released, allowing the contents to flow on into the remainder of the jejunum Six inches from the stoma may be considered the limit of jejunal ulceration The remainder of the meal is now swallowed and the rest of the stomach examined as a matter of routine

Ulcers may occur around the anastomosis or several inches from it in the efferent loop, usually just opposite the stoma itself These may be multiple, and are seldom found on the afferent side I have found that the majority of jejunal ulcers detected radiologically are in the angle formed by the greater curvature of the stomach and the efferent limb of the jejunum, (the gastro-jejunal angle, Fig 1, A) The closer the ulcer is to the anastomosis (gastro-jejunal ulcer), the deeper it will lie in this angle The true jejunal ulcer, usually of the penetrating type, is found as a rule projecting from the *inner* surface of the jejunum, well out of the gastro-jejunal angle Deep pressure in this angle will in many cases help to demonstrate an ulcer.

Those unaccustomed to this examination will at first experience difficulty in detecting an ulcer among the numerous projections and isolated flecks that will be seen in the neighbourhood simulating ulcers, and the inexperienced are more apt to see ulcers that are not there than to miss the genuine lesion The shadow cast by a full meal will mask or overlap the diagnostic features of ulceration, besides rendering full control of the contents difficult In other words, the whitewashing process described will be almost impossible under this condition, and many small gastric ulcers are still being missed for the same reason As in gastric work, radiographs alone are of little diagnostic value, most jejunal ulcers being extremely difficult to record on a radiograph, even after they have been located on the screen

Under present conditions, radiologists should not give a diagnosis of an organic lesion of the intestinal tract unless it has been visualised on the screen—in other words, *direct* evidence must be forthcoming The value of the examination is in no way lessened because a distinction between, for example, a simple and malignant ulcer cannot always be discriminated The hand and eye *properly trained* are of greater diagnostic value than radiographs, and direct evidence of *gastric* lesions in nearly 100 per cent of cases is, I believe, possible in the near future if this fundamental fact is but thoroughly grasped and recognised

Clinical and Laboratory Notes.

ON THE USE OF WEDGES FOR ELEVATING THE LOIN IN GALL-STONE OPERATIONS

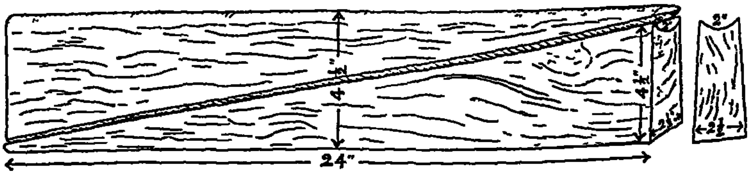
By G Grey Turner, M S Durh, F R C S Eng,

SURGEON, ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE

For nearly 20 years I have been in the habit of using wooden wedges for elevating the middle of the body in gall-stone operations to secure the Mayo-Robson position The wedges were originally devised for the elevation of the loin in operating on the kidney, hence the name "kidney wedges" by which they have come to be known in Newcastle I would not have thought of bringing this device before the notice of the profession had it not been that many friends, who also use the wedges, are enthusiastic about their utility

The wedges which I use are made of soft wood and are of the shape and dimensions indicated in Fig 1

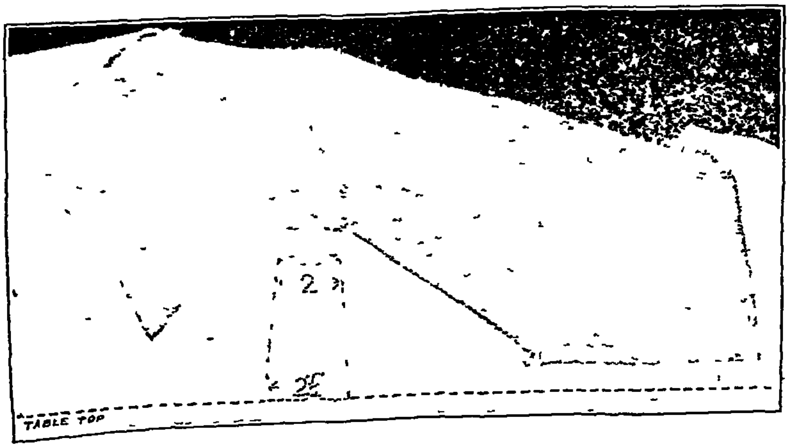
Fig 1



The principle involved is simple The wedges slide on each other, and are passed beneath the patient, one from either side of the operating table, so that when both are in position the patient is elevated by their conjoined height The groove in the top of the bottom wedge, and the under-surface of the upper wedge, ought to be very smooth, and it is a good plan to have this part of the wedges kept polished with some kind of furniture cream One of my difficulties has been to prevent this smooth surface being destroyed by the frequent washing or other cleansing to which theatre equipment is subjected on Sunday mornings!

The mode of application of the wedges is simple but important, for if they are not properly used, muddle ensues, and the wedges are apt to be discarded as clumsy and unsatisfactory As a matter of fact, when properly used, they are eminently satisfactory in every way When the stage of the operation arrives at which the surgeon wishes the loin to be elevated, the nurse takes the grooved wedge and passes it between the bottom sheet of canvas on which the

Fig 2



patient lies and the top of the table To do this properly the canvas is lifted up a little until the point of the wedge is introduced. The nurse now lays hold of the canvas with both hands and presses with her body against the base of the wedge, thus easily pushing the latter on until its point appears at the other side of the table The second wedge is then introduced in a similar way from the opposite side, its rounded surface being applied to the groove on the upper surface of the thin end of the wedge first introduced When it, in turn, is pushed home, the body of the patient is elevated by 4½ inches, which is the conjoined height of the wedges when assembled (Fig 2)

The process can be more easily carried out by two persons, one working from either side of the table When one person carries out both manœuvres, the surgeon must press against the wedge first introduced with his body, so as to prevent it getting displaced while the second one is being introduced from the other side The insertion of the wedges takes far less time to carry out than to describe If either is not properly introduced, or if one or other turns on its side, or is otherwise disarranged, then it, or both, should be withdrawn and reintroduced It is never necessary to lift the patient in order to put in the wedges, and in fact, the principle involved is grossly violated by any such attempt

With the wedges which I at present use I have never known any displacement occur after they have once been properly introduced, but I have known a narrower wedge fall on its side If that happens, it is very easy to withdraw both and to commence the process again The wedges have the advantage that they can be introduced at any part of any table at any stage of an operation, and can likewise be easily withdrawn when the incision is about to be sutured The rubber pads which have recently been introduced for placing on operating tables for the comfort of the patients have rather complicated matters; but we find that the wedges are as easily used as before if a strong canvas cover is placed between the table and the rubber pad The wedges are then introduced between the canvas cover and the top of the table as before These wedges are made and stocked by Messrs R McQueen and Son, Newcastle-upon-Tyne

---

VESICAL CALCULUS WITH NUCLEUS OF PARAFFIN WAX

BY ERNEST H SHAW, M R C P LOND,
DIRECTOR OF CLINICAL PATHOLOGY AND PATHOLOGIST, ROYAL NORTHERN HOSPITAL AND HONORARY PATHOLOGIST, HORNSEY COTTAGE HOSPITAL.

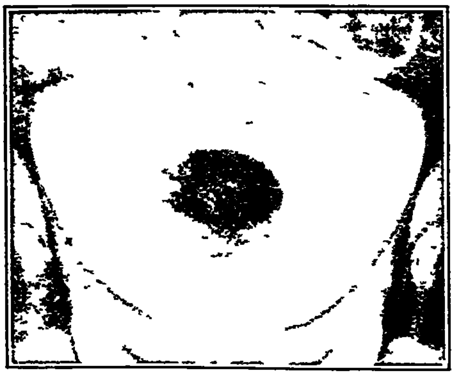
THE following case is reported on account of its rarity and general interest The specimen consists of a calculus, the centre of which is occupied by a mass of paraffin wax The stone was removed by operation from the urinary bladder by Mr Kenneth Walker, and the writer is greatly indebted to him for his permission to report the case

Clinical History —L. P aged 19 years (male), admitted to the Royal Northern Hospital on August 11th, 1925, under the care of Mr Kenneth Walker, complaining of burning sensation on micturition

Past History —October, 1924 patient first noticed burning sensation on micturition, and slight frequency and, a month later he observed a brownish colour of the urine He then consulted a doctor February 1925, pus and *B coli* were found in the urine, and vaccine treatment was undertaken No improvement occurred and about April the urine was examined for tubercle bacilli with negative result on two occasions Another specimen was examined by the same pathologist who used the Ellerman and Erlandsen method and tubercle bacilli were found He verified this on two subsequent occasions. The specimens of urine were collected with aseptic precautions but *not* through a catheter The patient subsequently underwent open air treatment for some months The youth stated that three years ago while boxing he was hit on the "kidney region," and afterwards passed blood

Present Condition —The burning sensation is still present, but much less than last year It is felt just above the pubes The stream stops suddenly occasionally Physical examination of chest and abdomen revealed nothing abnormal. X rays showed a large stone in the bladder Urine normal; no T B found, two specimens examined

FIG 1.



Calculus in the bladder

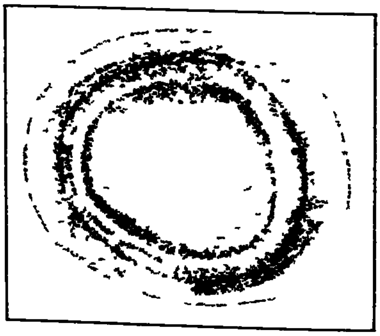
Operation (August 14th, 1925)—Suprapubic cystotomy. The stone was removed from the bladder, and no evidence of tuberculous disease was discovered After drainage with a rubber tube, the wound healed and the patient was discharged on Sept 9th.

Description of Stone

Flattened, ovoid in shape, measures 4 3 × 3 6 × 2 6 cm. Weight 32 g The surface is finely granular, whitish in colour with patches of light brown deposit On section the stone shows concentric layers of hard, somewhat brittle material, the centre being a solid mass of semi-translucent wax, roughly oval in outline, and measuring 1 9 × 1 2 cm From within outwards the layers of stone are a layer of white, soft, brittle material around the wax, and then several layers of hard light brown stone alternating with soft white rings. Surrounding these rings the outer part of the stone is white and hard for the most part, but soft crumbling patches are present in places

Chemical Composition —Mr H Skinner kindly examined the stone and made the following report —Stone: Composed almost entirely of phosphates The darker rings contain a little oxalate of lime in addition to phosphates Nucleus: Composed of pure paraffin wax with a melting point of between 53–54° C Burning gave the characteristic smell of paraffin wax In xylol the wax dissolved quickly and completely The wax was easily softened and moulded into any shape by the finger and thumb A suggestion that the nucleus might be adipocere was disproved by the above findings for this substance has a melting point between 61–67° C and is easily dissolved or emulsified by NaOH This chemical has no effect on the wax

FIG 2



The structure of the calculus after dividing it with saw

The identity of the substance forming the nucleus having been established it became necessary to explain its presence there The patient would not give any information on this point but there can be no doubt that it was passed along the urethra how long before the stone was removed it is impossible to tell Mr Walker states that wax has been found in the male bladder in other cases and patients have confessed to having collected candle 'drippings' moulded them into shape and pushed the material into and along the urethra Mr Skinner states that nearly all modern candles are made of the left hand is now to prevent, by gentle pressure, any of the meal passing further into the body of the stomach, for, if the pylorus is passed, shadows in the afferent limb of the jejunum will cause confusion. The business of the right hand is to dam up the emulsion in the first few inches of the efferent limb This manœuvre is not always easy to accomplish The opaque cream is now manipulated backwards and forwards through the stoma into the jejunum, and back again into the stomach This whitewashing process will cause the opaque substance to adhere to any ulcer crater present, showing itself as a black fleck or spot which remains isolated after the displacement of the contents by pressure This fleck, as in gastric ulcer, shows denser than the surrounding meal The penetrating type of ulcer is more usual and is easier to detect, as a nipple or bud-like projection on the jejunal wall This will also remain filled after displacement of the contents Pressure of the right hand is now released, allowing the contents to flow on into the remainder of the jejunum Six inches from the stoma may be considered the limit of jejunal ulceration The remainder of the meal is now swallowed and the rest of the stomach examined as a matter of routine

Ulcers may occur around the anastomosis or several inches from it in the efferent loop, usually just opposite the stoma itself. These may be multiple, and are seldom found on the afferent side. I have found that the majority of jejunal ulcers detected radiologically are in the angle formed by the greater curvature of the stomach and the efferent limb of the jejunum, (the gastro-jejunal angle, Fig 1, A) The closer the ulcer is to the anastomosis (gastro-jejunal ulcer), the deeper it will lie in this angle The true jejunal ulcer, usually of the penetrating type, is found as a rule projecting from the *inner* surface of the jejunum, well out of the gastro-jejunal angle Deep pressure in this angle will in many cases help to demonstrate an ulcer

Those unaccustomed to this examination will at first experience difficulty in detecting an ulcer among the numerous projections and isolated flecks that will be seen in the neighbourhood simulating ulcers, and the inexperienced are more apt to see ulcers that are not there than to miss the genuine lesion The shadow cast by a full meal will mask or overlap the diagnostic features of ulceration, besides rendering full control of the contents difficult. In other words, the whitewashing process described will be almost impossible under this condition, and many small gastric ulcers are still being missed for the same reason As in gastric work, radiographs alone are of little diagnostic value, most jejunal ulcers being extremely difficult to record on a radiograph, even after they have been located on the screen.

Under present conditions, radiologists should not give a diagnosis of an organic lesion of the intestinal tract unless it has been visualised on the screen—in other words *direct* evidence must be forthcoming The value of the examination is in no way lessened because a distinction between, for example, a simple and malignant ulcer cannot always be discriminated. The hand and eye properly trained are of greater diagnostic value than radiographs, and direct evidence of *gastric lesions* in nearly 100 per cent of cases is, I believe, possible in the near future if this fundamental fact is but thoroughly grasped and recognised

Clinical and Laboratory Notes.

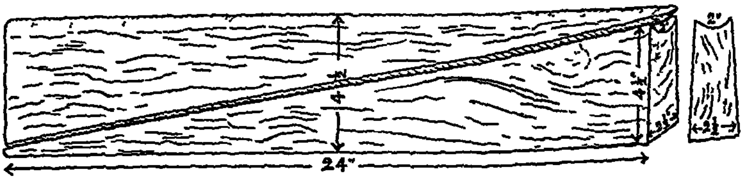
ON THE USE OF WEDGES FOR ELEVATING THE LOIN IN GALL-STONE OPERATIONS

BY G GREY TURNER, M S DURH, F R C S ENG,
SURGEON, ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

FOR nearly 20 years I have been in the habit of using wooden wedges for elevating the middle of the body in gall-stone operations to secure the Mayo-Robson position The wedges were originally devised for the elevation of the loin in operating on the kidney, hence the name "kidney wedges" by which they have come to be known in Newcastle I would not have thought of bringing this device before the notice of the profession had it not been that many friends, who also use the wedges, are enthusiastic about their utility

The wedges which I use are made of soft wood and are of the shape and dimensions indicated in Fig 1

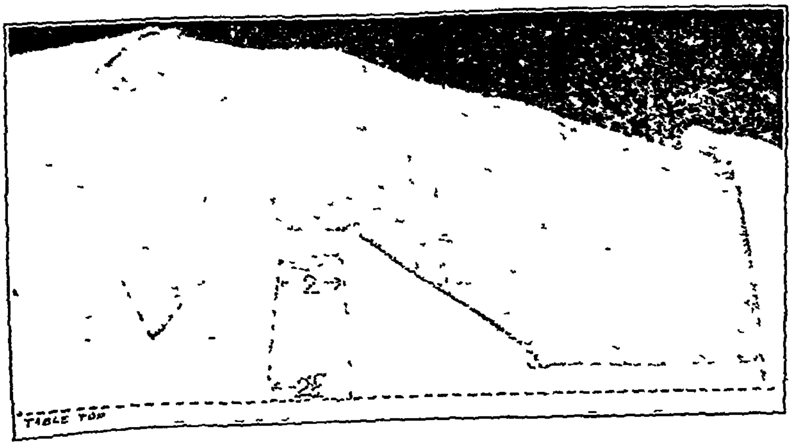
FIG 1



The principle involved is simple The wedges slide on each other, and are passed beneath the patient, one from either side of the operating table, so that when both are in position the patient is elevated by their conjoined height The groove in the top of the bottom wedge, and the under-surface of the upper wedge, ought to be very smooth, and it is a good plan to have this part of the wedges kept polished with some kind of furniture cream One of my difficulties has been to prevent this smooth surface being destroyed by the frequent washing or other cleansing to which theatre equipment is subjected on Sunday mornings!

The mode of application of the wedges is simple but important, for if they are not properly used, muddle ensues, and the wedges are apt to be discarded as clumsy and unsatisfactory As a matter of fact, when properly used, they are eminently satisfactory in every way When the stage of the operation arrives at which the surgeon wishes the loin to be elevated, the nurse takes the grooved wedge and passes it between the bottom sheet of canvas on which the

FIG 2



maternity hospitals on the same basis, and quoted a small local hospital where a consultant was retained at an annual fee of £21, in some years he had no work at all, in others he would have a few operations Dr Claxton proposed

> That a local authority may retain for a municipal maternity hospital the services of a consultant on a yearly salaried basis

Dr R C Buist (Dundee) said there were so many local difficulties that the question could not be settled for everyone, and proposed to refer the matter to Council

Dr Peter Macdonald (York), seconding this, quoted a case where the local authorities had appointed a consultant and had asked, and taken, the advice of the local division of the B M A on the form and remuneration of the appointment That sort of local option was very desirable

The meeting agreed to refer the question to Council

Dr Bone proposed on behalf of the Medico-Political Committee

> That the Representative Body strongly objects to the practice adopted by some public bodies of asking medical practitioners to tender for appointments, and that advertisements of such appointments be not published in the *British Medical Journal*

In answer to questions he explained that by "tendering" he meant advertisements in which the applicants were asked to state what salary they would accept The motion was carried, as was the further recommendation of Council

> That, having reviewed the whole situation as regards complaints and charges in courts against medical practitioners, the Representative Body does not consider that it is necessary for the Association to take any action in the matter of such complaints and charges

Factory Medical Service

Dr Bone moved on behalf of Council

> That a medical service of occupational hygiene should form no exception to the Association's policy that the administration of all health services should be unified first centrally and then locally

He said that the matter had been very fully discussed by a joint committee and there had been no dissentient voice raised against this proposition

Dr F W Dearden (Manchester) asked what would be the attitude of the Association to a Factory Bill, among the provisions of which was a proposal to hand over any part of the certifying factory surgeon's duties to the local authority as at present constituted? Dr Bone replied that the Association would not agree to such provisions, and the motion under discussion covered that eventuality It was carried

Officers at Orthopædic Clinics

The Council recommended

> That for part-time work at ordinary orthopædic clinics the remuneration of the medical practitioner should be £2 12*s* 6*d* per session of not more than two hours, provided there is a limitation to be agreed locally, of the average number of new cases to be seen in each session

It was proposed by the Chairman, in the absence of Dr E Solly (Harrogate), and seconded by Dr D Roxburgh (London)

> That the words "not less than" be inserted before "£2 12*s* 6*d*"

Dr H B Brackenbury pointed out that these words did not occur in any other corresponding clause in the scheme Dr Bone said that if the whole schedule was to be altered it should be done deliberately and not as a side issue The amendment was lost

In reply to a question as to why the fee should be greater than that given to pensions doctors and other medical officers of clinics, Dr Bone pointed out that it was a specialist service and the fee corresponded with that for two other specialist clinic services—viz, ophthalmic and anæsthetic work The motion was carried

Royal Commission on Local Government

The Deputy Chairman, Dr C O Hawthorne, took the chair, while Dr Brackenbury spoke to the motion proposed by the Chairman of the Medico-Political Committee

> That the following recommendation of Council be adopted. That the Memorandum of Evidence submitted to the Royal Commission on Local Government on behalf of the Association be approved

Dr Brackenbury said that there were certain fundamental principles laid down by the Association which lay at the basis of the memorandum The first was that health services should be separated as completely as possible from other administrative services which were not of a health character—*for instance*, that the health functions of Poor-law guardians should not be complicated by relief work The second was that when these health services had been separated they should be combined as far as possible with all other health services, so that all the health services of the country, centrally and locally, should be under one form of administration and under one local authority. The question arose as to what body and area was most suitable for this authority The ideal was that all present divisions should be swept away and the country parcelled out afresh into areas, each with a large town as centre This was unattainable, so the suggestion made was that all health authorities should be compelled so far to work together as to approach as nearly as possible the ideal of unification The machinery by which this should be done was a fundamental point Those who had drawn up the memorandum believed that, as had been done under the Education Act, the best way would be to have a statutory health committee of a composite character, elected by local doctors, to advise and report, without touching finance This committee would have on it representatives of the medical practitioners and such other bodies as were experienced and interested in the health services of the local area Unification of health administration could not be obtained if there were in any part of the country a superior and a minor health authority, the memorandum therefore looked with disfavour on the proposal of the Ministry of Health to give to county councils supervision and, largely, control of all health matters in the hands of urban or rural districts or in county boroughs within their area He instanced a borough like Willesden, of some 200 000 inhabitants, which had been the successful sanitary authority for many years The county council would have had no experience whatever of sanitation, and the transference to it of supervisory authority must lead to friction, overlapping, disturbance, and inefficiency Rural areas with scattered and sparse population and few funds were more difficult, a satisfactory service might be attained either by giving the county council a supervising and controlling position or by making the small rural area give up its authority to the county council which would thus become *the* health authority for the rural area. The memorandum preferred the latter

Dr J Middleton Martin (Gloucestershire) proposed an amendment

> That the following words be added, "but that further consideration of the matter by the Council be given, if possible, before any Parliamentary or political action be taken"

He said that in Gloucestershire the health services had been successfully put in the hands of local practitioners and he was in favour of this, but took exception to any extension of their representation on the new health authority It had been found that the opinion of a medical advisory committee, presented as a considered report, had much more weight than the individual voices of members of the executive body People were too inclined to think in terms of London, which required exceptional treatment, he suggested making the county council the responsible authority, with exceptions where desirable

Dr R A. Lyster (Hampshire) seconded the amendment, and said that it was outrageous for the meeting to endorse a complicated memorandum which would commit the Association to a conflict with the Ministry of Health on a subject only remotely connected with medical affairs The great urban paraffin wax Tallow candles are not used so much as formerly

Commentary

On reviewing the clinical history, it will be noted that the pathological findings in the urine reveal apparently three phases (1) pyuria with infection by *B coli*, (2) the same and tubercle bacilli; (3) normal urine with stone in the bladder

As the urine was free from pus and organisms at the time when the stone was removed, and the bladder wall was found to be normal, an interesting field for speculation is opened up in regard to the presence of tubercle bacilli found in the urine during the second phase Four possibilities present themselves (1) a tuberculous lesion of the bladder wall had healed without visible scarring, (2) one or both kidneys are tuberculous, (3) contamination, (4) mistaken identity

(1) Must remain just a possibility (2) no evidence to prove this during the patient's stay in hospital, (3) contamination of the urine by tubercle bacilli during its collection need only be mentioned to be dismissed; (4) the question of mistaken identity is, however, one which has to be considered, as all workers in clinical pathology are aware of The smegma bacillus at once occurs to one's mind, and it seems possible, if not probable, that this was the organism found in the urine in what has been labelled the second phase of the case As the urine was not collected through a catheter, the possibility of smegma bacilli being included in the urine passed through the meatus must be taken into consideration

Incidentally, the writer wishes to observe that the idea that smegma bacilli lose the red colour deposited by carbol fuchsin on well washing the films with methylated spirit is not always reliable He has repeatedly experimented with films of the smegma bacillus—treated them with acid followed by spirit and found the bacilli stained a bright red Another point which is of importance to the laboratory worker is the curious fact that *B coli*, when lying on loose epithelial (squamous) cells in the urine, seem to have an affinity for carbol fuchsin It is not very uncommon to see red bacilli on a squamous cell with large numbers of others stained blue (with Löffler's stain) in the other part of a field This apparent acid-fast property of *B coli* is no doubt due to incomplete washing in acid and methylated spirit, but it arouses one's curiosity and causes speculation as to whether these bacilli have absorbed a certain amount of fatty material from dead and degenerated epithelial cells on which they lie

It will be remembered that tubercle bacilli are said to possess a certain amount of fatty substance in their covering or body, and this is given as an explanation for their acid-fast property

To continue with one's speculation over this curious and interesting case, might the *B coli* remaining in the bladder for some time have absorbed some of the paraffin wax, and in this manner been able to retain the carbol fuchsin stain like the tubercle bacillus?

The accompanying X ray photographs show the position and structure of the calculus

---

THE PRINCE OF WALES'S INTEREST IN HOSPITALS During the past fortnight the Prince of Wales has been showing active interest in hospitals and their work He attended the centenary celebrations at the West Herts Hospital at Hemel Hempstead, and laid there the foundation stone of a new maternity ward Later on he visited the Isle of Wight County Hospital at Ryde, where he presented Mr B O Cochrane with a silver model of a galleon on behalf of the staff of the hospital, of which he has been treasurer and chairman At Ventnor he opened the nurses' home at the Royal National Hospital for Consumption and Diseases of the Chest, of which His Royal Highness is patron On his return to Portsmouth, to be formally admitted to the freedom of the city he visited the Royal Portsmouth Hospital, to which he presented the masses of roses with which he had been pelted during his progress through the streets

BRITISH MEDICAL ASSOCIATION

ANNUAL MEETING AT NOTTINGHAM

(Continued from p 198)

REPRESENTATIVE MEETING

MONDAY, JULY 19TH

Practitioners' Fees in Municipal Maternity Hospitals

THE Chairman of the Medico-Political Committee, Dr J W BONE, moved on behalf of the Council

That where the local authority makes provision for the institutional treatment of maternity cases, this should be mainly or primarily for serious cases of antenatal complications, for cases requiring major obstetric operations, for cases where isolation and treatment of septic infection is specially indicated and other cases where the home conditions are unsuitable or dangerous for confinements

This merely made what had already been resolved at Bath the policy of the Association Dr BONE also proposed

That where a general practitioner is called upon to render assistance at a confinement in a municipal maternity hospital, the fees payable to such practitioner should be in accordance with the scale of fees approved by the Ministry of Health for the payment by local supervising authorities to medical practitioners called in on the advice of midwives under Section 14 of the Midwives Act, 1918

To this Dr R FORBES proposed an amendment on behalf of Gateshead

That the whole of the last clause be deleted and the following substituted therefor The local authority shall be responsible to such practitioner for his fees until such time as the patient is removed from the hospital

He pointed out that under Section 14 of the Midwives Act, 1918, a medical practitioner could obtain payment when called in by a midwife only up to the twenty-eighth day It was quite conceivable that complications might arise so that attendance was necessary for a much longer period

Dr BONE said that the point was a good one, and he was in full sympathy with it, but it was necessary to bargain and to deal with other people Already a good scheme and good remuneration had been secured, and it was not easy to remove such a limit at a time when economy was the idol of Government departments He suggested that the matter be referred to Council Dr Forbes accepted this

Dr C F T SCOTT (Willesden) proposed a verbal emendation

That the words "not be less than" be substituted for the words "be in accordance with,"

which was carried

Dr BONE proposed and carried the recommendation of Council

That where a consultant is called in by the practitioner in charge of the case the fee should be for the consultation not less than 3 guineas and for a major operation not less than 10 guineas

Dr FORBES said that Gateshead felt that a consultant spent less time and had less trouble in a municipal hospital, where everything was prepared for him, than in a private house, and they wished to make the fee £2 2*s* It was a very important point, and in some areas this might be too little, there must be a revision on a territorial basis

Dr E W MASTERMAN (London) said that it would be very undesirable to have a different arrangement in municipal maternity hospitals and Poor-law hospitals, as in many places the former were being started in connexion with the latter He suggested referring the matter to Council and inserting the words "and mileage as required" but Dr BONE said he refused to listen for a moment to any alteration, the scheme had been carefully considered and the fee was reasonable The "territorial" argument was a fallacious one, and would be fatal to central work

Dr E I CLAXTON (Liverpool) remarked that the meeting had already agreed that the Council should consider a scheme for yearly agreements for consultants in Poor-law hospitals He wished to put the municipal

SIR RICHARD LUCE said that it would be bad policy to expect that medical men should be treated on different terms from other owners of nursing homes Evidence before the Committee had proved that there was grave reason for investigation and registration, and the fact that members of the medical profession were under the control of the General Medical Council was not much help as it was most unlikely that patients would ever charge a medical man before that body

Drug Addiction

In proposing the adoption of the remainder of the supplementary annual report under "Medico-Political," Dr BONE drew attention to the report of the Departmental Committee on Morphine and Heroin Addiction the recommendations of which corresponded very closely with the desires of the Representative Body as expressed at Bath

Dr C O HAWTHORNE said that it was a very serious thing that it had now become law, partly on the representation of the Representative Body, that a practitioner who was believed to have offended against the Dangerous Drugs Act could be haled before a special tribunal of three doctors with a legal assessor and not before the ordinary courts of the land This tribunal could recommend the Home Secretary to remove his name from the list of those permitted to prescribe these drugs There was no guarantee that the evidence could be challenged by a legal representative of the accused This arrangement, on the one hand, offered the doctor benefits which it did not confer on other citizens, such as pharmacists, who were even more intimately concerned with the Act, and, on the other hand, removed him from the solid protection of the English law

Dr E K LE FLEMING (Wimborne), speaking as one who had given evidence before the Committee, pointed out that it had been presided over by Sir Humphry Rolleston, who was not likely to neglect the best interests of the profession This clause of the recommendations was dealing with a particular case, the doctor who had become a drug addict, and hitherto such a man could only be allowed to go on until he came before the courts The Committee thought that if it were possible to interpose a tribunal with a strong medical element which would protect him from himself and protect his patients by preventing him from prescribing dangerous drugs in excess, it would be acting in the best interest of both

Dr E R FOTHERGILL (Brighton) drew attention to what he called a most objectionable position In a recent case Sir Travers Humphreys had defined justifiable use of dangerous drugs as a prescription given by a duly qualified medical practitioner when required for medical treatment This meant that the onus of proof that the drug was given in the course of medical treatment lay on the prescriber, and the whole question of the freedom of the profession to treat patients could come under the jurisdiction of the Home Office

Dr BONE replied that Dr Fothergill's anxiety was due to incomplete information It was clearly specified that there were certain circumstances in which it was perfectly legitimate to use these drugs where their withdrawal would lead to serious symptoms such as could not be treated under the conditions of private practice, and for those people who could live comparatively normal and useful lives so long as they took a certain quantity of their drug of addiction There was ample evidence that certain doctors were practically selling these drugs to addicts without attempt to cure, and the legislation was designed to stop that sort of thing The Committee had been advised by the great legal experts of the Government and believed that the clause effected this end

Certification under the Workmen's Compensation Act

Dr G F SHEPHERD proposed on behalf of South Shields and Tyneside

> That the Representative Body is of opinion that, while the obligation of certification of injury under the Workmen's Compensation Act is in the first instance placed upon the employer and there is no obligation whatever under the National Health Insurance Acts to provide compensation certification, nevertheless it is often found that the employer, or his agents, or his covering company, requires initial certification either at no expense or wrongfully at the expense of the injured person, and that it is therefore advisable that a uniform and universally used form of certification be employed in all cases in order to conform to the law ; and that the Council be instructed to take such steps as may be necessary to bring a uniform certificate and system into being at the earliest possible moment

He said that the system of giving certificates for nothing was thoroughly bad The whole question of certification remained as it was in 1913 and should be gone into at the same time

Dr BONE replied that a solution of this problem had been sought for a long time The bodies concerned were chiefly large insurance companies, and it had been found that there was an Accident Offices Association which represented them all The Council was in communication with this organisation about this matter There were difficulties, as in some districts the doctors had acquired the habit of issuing sixpenny certificates and did not wish to be deprived of this arrangement He suggested referring the matter to Council, which was agreed

Antenatal Work and the Midwives Act

It was proposed by Dr T R DAVIES, on behalf of South-West Wales

> That the Council be instructed to consider the advisability of pressing for the amendment of the Midwives Act, 1918, in order to secure that local authorities be made responsible for payment for antenatal work

It was decided to refer the matter to Council for consideration

Medical Defence

Two motions, urging that the time had come for defence societies to issue policies covering a principal for the acts of his assistant or locum tenens, were withdrawn, on the announcement by Dr A LYNDON (Hindhead) that the two great medical defence societies were very conscious of the growing and legitimate demand made by their members for such protection, and the following decisions had recently been arrived at by the Medical Defence Union —

(*a*) That the Medical Defence Union will defend the principal, if he is a member of the Union, should action be taken against him arising out of the acts or omissions of a locum tenent, even if the locum tenent is not himself a member of any defence society ,

(*b*) That a reciprocal arrangement had recently been entered into between the Medical Defence Union and the London and Counties Medical Protection Society, whereby each society will defend its own member in an action arising out of the acts or omissions of an assistant or locum tenent, who is a member of the other society, as if the assistant were a member of the same society as the principal ,

(*c*) That as regards a subordinate medical officer of a hospital, the same procedure will apply in the case of members on the staffs of hospitals against whom actions are brought arising out of the acts or omissions of duly appointed subordinate medical officers , and

(*d*) That if the principal, being a member of one society, is sued jointly with the assistant or locum tenent or subordinate medical officer, who is a member of the other society, each society will defend its own member and the two will collaborate in the conduct of the case

It was proposed by Dr J STEVENS, on behalf of Edinburgh

> That the Council be requested to take all necessary steps as soon as possible to deal with the situation that has arisen as a result of the findings of the jury in the Harnett *v* Fisher case, with the view of protecting the interests of the medical profession

Dr ROXBURGH, supporting the motion, said that it was scandalous that the profession should be subjected to legal proceedings for issuing bona-fide certificates

The motion was referred to Council

Motor Licences

Dr S. MORTON MACKENZIE proposed on behalf of Reigate

> That the Council be instructed to use all possible pressure to obtain such amendments to the Motor Licence Regulations

boroughs could safely be left to look after themselves While the memorandum was very good in some places, it betrayed an amazing and ludicrous lack of knowledge in some of its points

Dr **BRACKENBURY** replied that Dr Buchan had described the memorandum as the best and clearest and most satisfactory statement on the subject he had ever read or hoped to read He challenged Dr Lyster to mention any statement that revealed lack of knowledge The memorandum expressly recognised London as exceptional The term " county council " must not be reserved for rural councils

Dr E **WILLIAMS** (Cardiff) said that there were enormous variations in rural England , some services were essentially large group services, while others were essentially local The impetus to Poor-law reform was not any desire for unification of medical services, but was financial

Dr R P **GARROW**, medical officer of health for the non-county borough of Chesterfield, pointed out that large urban district councils were not confined to London He asked the meeting to accept the memorandum in its entirety, the most essential point being that the county council should not have supervision over those large urban districts or boroughs

Dr A T **JONES** (Glamorgan) said that Dr Williams might represent Cardiff, but not the large industrial districts of Wales, and he considered it would be quite impossible for the Glamorganshire County Council to administer these things in its county.

Dr H G **DAIN** (Birmingham) supported the amendment, saying that before the memorandum received the whole-hearted support of the profession the general practitioner would want to see more clearly what his position was going to be under the reconstituted authority The suggestion now was that the local authority's health department, which had grown up for a very definite purpose, should absorb a large amount of the clinical side of medicine with which it had hitherto had little to do Where would the insurance practitioner stand when employed for at least one-third of his practice by the local health authority ? Many general practitioners would object to being employed by the medical officer of health or the present health committee with its traditions and officers , this might well cause a revolution

Dr J. **ROBINSON** (Manchester) remarked that all the biggest urban district councils were outside London , he feared that overlapping of the duties of the medical officer of health under the local authority and the county medical officer would lead to friction and financial loss , there should be complete unification.

Dr. **EUSTACE HILL** said he wished to plead strongly for a reconsideration of the memorandum ; he was convinced that the Association was on the wrong lines He welcomed any scheme to improve the present administration, which was rotten , the proposals of the Ministry of Health allowed the county council to delegate anything they liked, which would cover such cases as Willesden They could divide the county into areas, appoint additional medical officers of health, and transfer to them the duties at present done centrally, such as tuberculosis and venereal disease work He considered that the memorandum had been drawn up by someone who was not thoroughly conversant with the conditions

The amendment was carried

Dr **BRACKENBURY**, speaking to the substantive motion as amended, said that Dr. Eustace Hill was wrong in saying that county councils could delegate their powers The confusion arose because in the Minister's proposals county councils were given supervision over all matters of health within their areas, but the only powers they could delegate were those transferred to them from the Poor-law guardians , they could not delegate their supervisory powers He had been asked the relationship of this memorandum to a State medical service It was evident that local authorities must in future take a greater interest in health administration and clinical questions, must employ local private practitioners in all the auxiliary services and clinics *as far as possible*, and not work them through whole-time medical officers In this way the proposed rearrangements would act as a strong bulwark against any State medical service

The motion was carried, and Dr Brackenbury resumed the chair

The B M A and Parliament

Dr **BONE**, in proposing the adoption of the remainder of the annual report under " Medico-Political," said that there was some difficulty in getting the views of the Association expressed in Parliament There would be no success until the fund for supporting the B M A 's own representatives was continued

Sir **RICHARD LUCE**, speaking as a member of the Committee of Medical Members of Parliament explained that that Committee practically never took any coordinated action, as it contained representatives of all parties, who could rarely be unanimous There were three Bills at present on the table of the House of Commons The first, referred from the House of Lords, dealt with the reform of the Coroners' Law, and already contained many recommendations in accordance with the policy of the Association The Government had conceded the payment of resident medical officers for post-mortem examinations, and that coroners should be either doctors or lawyers. The profession still wanted improvement in the rates of pay for evidence in the coroner's court, and an amendment was to be brought forward on the lines desired by the Association, except that a combined fee of 4 guineas (instead of 4½ guineas) was to be recommended for the post-mortem examination and relative evidence There was sure to be great opposition. The coroner could already order and pay for an autopsy without calling the doctor in evidence, and it was now suggested that he should be entitled to ask for a report and, if this was wholly satisfactory, dispense with an inquest For such a report a fee of half a guinea was suggested The second Bill was Colonel Fremantle's on the registration of births and deaths As this was a private member's Bill it could not carry any financial consideration For this reason it was not possible to push the B M A policy of a *compulsory visit to the deceased before* granting a certificate The Bill had gone a long way, but was opposed by a section who wanted to compel the doctor to make the visit without fee The notifications would be by post and private There was also a proposed regulation as to the time a body might be left unburied

It was proposed by Dr P **HAMILL**, on behalf of the City Division, and carried

> That the Representative Body is of opinion that all medical officers—honorary or otherwise—of hospitals or rate aided institutions be entitled to receive fees on the same scale as other practitioners for post-mortem examinations and attendance as medical witnesses at inquests

Dr. **BONE** remarked that this was already the policy of the Association

Dr **ROXBURGH** asked whether the death certificate proposed was to be private and privileged If not the Registrar-General would not get accurate information, and it was most important that he should

Dr **BONE** replied that a private certificate had been part of the policy of the Association for years, but would involve considerable expense, and it was essential for the passing of the Bill that it should not cost money The present certificate represented an attempt to get at no cost a semi-confidential registration of the actual cause of death It was not open to the relatives, but placed in a sealed envelope for the Registrar. The only difficulty would arise if an insurance company required to know the cause of death and obtained permission to get a copy of the certificate The Association had neither pressed nor opposed it

Registration of Nursing Homes

Dr. **BONE** proposed that the Memorandum of Evidence submitted on behalf of the Association to the Select Committee on the Registration of Nursing Homes be approved

The early treatment of otitis media had recently become relatively hopeful, and it was most important that advice should be obtained as soon as there were signs of ear trouble

Dr **PETER MACDONALD** (York) said that the value of the motion depended on the extent to which it would help to create a public opinion Parents and school-teachers, especially house-masters needed education as to the importance and urgency of "running ears" He was not, however, certain that Marylebone's method was the best and suggested referring the matter to Council

Dr **DAIN** said he was in full sympathy with the necessity for an educational campaign, but thought that what had been said had done all that could be done No approved society would be in a position to consider any additional benefits for five years

It was agreed to pass to the next business

Dr **DAIN** then proposed

That the Representative Body regards as serious the situation which arises in consequence of the negative replies of the Ministry of Health in connexion with the methods and machinery for dealing with complaints against insurance practitioners, and pledges itself to support proposals (*a*) to secure equal justice for practitioners as for insured persons and approved societies, (*b*) improved methods for dealing with complaints of minor importance, and (*c*) resistance to any claims of the Ministry of Health or of insurance committees to judge as to the propriety of the treatment adopted by a practitioner in attending his patient or the relative degree of care and skill shown by a practitioner in such attendance as compared with that of other registered medical practitioners

He said that the motion arose from the strong feeling of the Insurance Acts Committee that the present arrangements were unsatisfactory and needed considerable modification It was impossible for anyone to decide on read evidence alone that a doctor had not done all that he should have done and still more to impose a penalty The Ministry had been pressed most strongly either not to deal with such cases or else, if they did to allow the doctor an appeal On account of a lack of sympathetic assurance from the Ministry he asked the Representative Body to carry the motion in support of their colleagues engaged on National Health Insurance work

Dr C H **HALL** (West Hertfordshire) seconded the motion and read a letter from a K C who had resigned his position as vice-chairman of the local medical service subcommittee because of his indignation at the attitude of the Ministry, which he described as "contrary to the ideas of justice in which I have been trained" The letter went on to describe the case in question, which was that of a busy doctor who dictated his prescriptions over the telephone to his qualified dispenser, who signed them On being brought before the committee the doctor admitted that he had overlooked the regulations and undertook that it should not occur again and expressed his regret. There was no evidence that anyone had been injured by his practice in any way The committee unanimously agreed that a caution would meet the case The Ministry officials interviewed the doctor and then met a deputation from the local committee They stated that the doctor had broken his contract and must be fined for the breach whether there had been damage or not, they even intimated that there ought to be a scale of deductions for different breaches of the terms of service It was contrary to all legal training and teaching that persons who had not been present at the hearing should decide that a penalty should be inflicted when those who were present had found otherwise The writer of the letter concluded that so long as this system prevailed he felt he would be out of place in assisting in its administration

Mr E B **TURNER** proposed to strengthen the resolution by inserting the words "to organise a most strenuous" before the word "resistance," and this was carried He said it was a tremendous slight on the profession as a whole and absolutely preposterous for any insurance committee as at present constituted to say whether a doctor's treatment was right or wrong

The amended motion was carried unanimously.

State Medical Service

It was proposed by Dr **MUIR SMITH**, on behalf of Eastbourne

That the Representative Body is of opinion that no scheme of a State national medical service can be acceptable to the profession which fails, in principle, to recognise (1) the equitable claim of the practitioners undertaking to a similar measure of that protection which the law affords to unindentured contracts for service, and (2) the entitlement of the practitioner to the right of appeal to a court of civil jurisdiction on questions of administrative procedure

Dr **DAIN** said that the evils feared by Eastbourne were entirely imaginary, and the motion was rejected

In the course of the afternoon it was announced that the following eight members of Council had been elected Drs J W Bone, H G Dain, Mr W McAdam Eccles Drs E R Fothergill R Langdon-Down Sir Richard Luce, and Drs J A Macdonald and G W Miller

TUESDAY, JULY 20TH

Public Health Appointments

The Chairman of the Public Health Committee proposed on behalf of Council

That the Representative Body is of opinion that it is inadvisable and improper that whole-time medical officers engaged in public health work should be required, without suitable extra remuneration to undertake medico-legal or other duties not directly concerned with their duties as officials of local health authorities

and also

That with regard to salaries (under the scale of Minimum Commencing Salaries for Whole-time Public Health Appointments) for non-resident public health appointments, subsistence allowances be regarded in the same manner as travelling expenses—i e, as being included in the reasonable expenses properly incurred in the course of the duties of the appointment—which cannot be regarded as being part of the salary

Both these motions were carried

Dr E **SOLLY** proposed on behalf of Harrogate

That the remuneration of the medical superintendent (including the responsible medical officer) of a Poor-law hospital should be based not on the number of assistants which the board of guardians provides to help him in his work, but on the number of beds in the hospital and on the nature and extent of his responsibilities

The motion was supported by Dr **D'EWART** and Dr **MASTERMAN**, and was carried

In proposing the adoption of the annual report under "Public Health and Poor Law," the Chairman of the Committee pointed out that the Association had obtained the scale salary in 138 out of 173 public health appointments considered during the year

Public Education in Health

It was moved by Brighton (Dr E R **FOTHERGILL**):

That the Council be instructed to consider and report on how branches and divisions of the Association, as voluntary bodies, could make their contribution towards public education in health as advocated by Sir George Newman in his memorandum (issued in January, 1926) addressed to the Minister of Health.

Dr Fothergill said that the work of the Association in breaking down individualism and exclusiveness and safeguarding the proper interests and the honour and rights of the profession had won for it the respect and confidence of governments and the people they governed This achievement opened the door towards its second ideal—viz, preventive medicine. Much had been done centrally, and it was now important to see if more could not be done locally

The motion was passed

Advertisements Requiring Membership of a Medical Organisation

Dr **LANGDON-DOWN** moved

That it be an instruction to the Council to refuse advertisements of appointments which make it a condition either that the applicant must already be, or if successful in obtaining the appointment must become, a member of a professional organisation, society, or union, other than a society for individual medical defence

He said that these advertisements admitted the interference of lay bodies on a matter of purely private and individual concern connected only remotely with as will allow medical practitioners to transfer temporarily their licence to a second car if the first be out of use

He said that doctors were worse off than ordinary car users who could often postpone their journey if the car was out of order Hiring was uneconomical and most doctors had to keep two cars, with a second licence at an increased rate, although the two cars were never both in use Motor insurance companies met the doctor's difficulty by insuring the second car at a reduced cost and rapidly transferring the first insurance to the second car without any expense when the first was laid up

Mr E B **Turner** said that the policy of the Association was to get back the petrol tax From what the Chancellor of the Exchequer had said recently it appeared that this might soon be obtained, in which case the injustice would cease to exist Practitioners could do far more by attacking their respective M P 's on the subject than the Central Council could do

Dr L G **Glover** (Hampstead) remarked that it did not seem well known that it was possible to take out a quarterly licence for the second car, and if at the end of the quarter the car had never been used the licence was renewed free of charge

Dr **Bone** said that the substitution of the petrol tax for the car tax was the Association's policy, and it would be best to keep to that Nor did he care to go as a mendicant to the Government asking for special concessions which would be thrown in the profession's teeth when they went at some other time to ask for their rights Other professions required the use of a second car and all should be treated alike

The motion was rejected

Medical Insurance

It was proposed by Hastings

That the Council be instructed to consider the advisability of instituting a scheme of insurance for members of the B M A on similar lines to that afforded to members of the British Dental Association by the Dentists Provident Society.

Dr C L **Morgan** outlined the scheme in force under the Dentists' Provident Society.

Dr **Bone** said he did not think there was any demand for such provision as there were already many excellent schemes provided for medical men

Mr **Bishop Harman** pointed out that in 20 years less than 800 dentists had joined their Association, and its reserve fund was only £2000, and that the professional risk of dentists was the smallest of any group of workers, while that of doctors was one of the greatest General insurance companies could meet it by diluting doctors with other professions He did not think any scheme of insurance would be practicable

The motion was rejected

Use of Pituitrin by Midwives

Dr J **Hudson** proposed for the North of England branch

That midwives should not be allowed to use pituitrin under any circumstances,

saying that it was a potent drug which should not be in the hands of women with six months' training

Dr **Lyster** said he wished the Representative Body would persist in sending up such recommendations to the Midwives Board as in time they would produce their effect The attitude of the Board was that the midwife was taught and accustomed to use certain drugs in her training, and therefore she should be able to use them in her practice She had to enter them in her register, so that the extent to which she used them could be ascertained This would be satisfactory if there were any organised and systematic inspection of midwives, but, in fact, it was most imperfect and perfunctory, and afforded little or no protection to the public.

Dr **Bone** said that Dr Hudson was preaching to the converted The Council had taken vigorous action The Minister of Health had expressed the opinion that pituitrin should only be used by a midwife under the direction of a doctor, but the Midwives Board took up the attitude that it did not interfere with its midwives beyond demanding a record of drugs used The only way to produce an effect was to get information as to how extensively pituitrin was employed and find some case or cases where danger or damage had resulted from its use ; pious resolutions were useless

Dr P **Hamill** moved an amendment

That the words " pituitary preparations " be substituted for the word " pituitrin "

He pointed out that pituitrin was a registered trade name, and if the motion were passed in the proposed form there would be nothing to prevent the use of infundin or any other form of pituitary extract This amendment was carried The same speaker suggested that it was undesirable that there should be any suggestion that the profession put anything in the way of the use of substances that might save life, and in remote districts it might take a long time to get a doctor His division therefore proposed -

That the words " except in case of grave emergency and after medical assistance has been summoned " be substituted for the words " under any circumstances "

This amendment was lost, Dr **Bone** saying that he thought this qualification would be impracticable.

The motion was carried

Treatment of Rheumatic Children

Dr E A **Starling** proposed, and Dr E R **Fothergill** seconded

That this meeting requests the Council generally to consider and report upon the present position and probable future development of organised schemes for " the treatment of physically crippled children " (infancy up to 16 years of age), and of " children suffering from actual or potential rheumatism and/or heart disease," and in particular to consider the following suggested governing principles (*a*) the selection of patients should be mainly through the various branches of the public health service, (*b*) the clinical treatment should, wherever possible, be by means of private practitioners and voluntary hospitals

Dr Starling said that many schemes had been put forward and discussed Many branches of clinical work had been handed over to whole-time public health officers, and it was most important that their number should not be added to The treatment of rheumatic children was very important, and it would be wise for the Association to consider the matter and formulate their attitude

Dr **Roxburgh** said that if any part of clinical work and experience were taken away from the general practitioner a contribution was made to his inefficiency

National Health Insurance

Dr H G **Dain** proposed the adoption of the annual report under " National Health Insurance " He said that the Royal Commission had reported and the Government had produced a Bill that made medical benefit a first charge on the funds The Committee had been very concerned by the tremendous increase in work that was called for from the National Health Insurance doctor, and it would not be long before the money would be insufficient to pay for the services asked It was not likely that the other recommendations would be actively considered this year, and the Committee did not think it wise to raise any question of fees under present circumstances

It was proposed by Marylebone Division (Dr W. **Griffith**) ·

That on account of the widespread disabilities caused by diseases of the nose, throat, and ear, the Council be instructed to point out to the approved societies the importance of adding the payment of the whole or part of the costs of oto-rhinological and laryngological treatment as an additional benefit

He said that his division was anxious that the position of the insured patient should not be worse in any way than that of the private patient and that additional benefits should be available at the first possible moment

Dr **Christine Murrell** (Kensington) supported the motion, saying that the eye made a greater sentimental appeal to the public than the ear, and it was the duty of the profession to point out that disabilities of hearing were as great or greater than those of sight in medicine Sir Berkeley Moynihan who eloquently proposed "The City of Nottingham," enumerated some of the medical names for which the nation owed Nottingham a debt of gratitude, and rejoiced in the municipal devotion to art The passion for beauty, he said had always afforded a refuge from professional lassitude, and those who were developing the local University were raising up memorials to themselves in the grateful hearts of the people Alderman Foulds responded for the city, describing himself frankly as one who had never been a friend of doctors Dr Brackenbury, as Chairman of the Representative Body, proposed "Our Guests" describing himself as "proud of our associates as well as of our Association" Response was made by Mr L E Barnett, F R C S President-elect of the Australasian Congress 1927, and by His Honour Judge R W Turner Sir Humphry Rolleston proposed the President in well-turned phrases, lauding the sportsman's training for the great game of life, and in reply Mr Hogarth thanked all who had grudged neither time nor trouble to make the meeting a success, mentioning especially the name of the honorary local general secretary, Mr. A. M Webber

Excursions and Social Amenities

The Representative Body were entertained for the night of Saturday, July 17th by the Corporation of Buxton Over 300 guests took dinner in the Palace Hotel under the presidency of the Mayor of Buxton Alderman T H Cooper, who proposed the health of the Association and urged the importance and usefulness of British spas The Deputy-Mayor, Dr C W. Buckley, replying to the toast of "The Corporation," proposed by Mr Hogarth, spoke of the great amount of damage done by rheumatism and the necessity for further investigation On Sunday the party were conducted over the spa and then conveyed in motor chars-a-banc over the Cat and Fiddle pass and via Chatsworth Park and Haddon Hall to Rowsley, where they rejoined the special train for Nottingham In addition to the President's reception on Tuesday evening the Mayor and Mayoress received members of the Association at the Castle on Wednesday evening, and the local division held a reception on Friday evening Many excursions to beautiful and interesting places were arranged, and opportunity was provided for inspecting the local factories by invitation of the firms

Exhibition of Instruments, Drugs, Foods, and Appliances

The usual exhibition was held from Monday, July 19th, to Friday, July 23rd, in the Victoria Halls where the space and lighting were adequate for the display of material, both novel and well-tried for the furtherance of medical practice in many directions. There were more than 80 stands of which an account will be given in a later issue

---

SECTION OF MEDICINE.

Wednesday, July 21st.

The first session of this Section was devoted to a discussion on

Some Recent Developments in our Knowledge of the Biliary Tract.

Dr **Frank Harwood Jacob**, the President, said that it was to be the privilege of the section to hear those who had done notable original work on the biliary tract discussing their own subject He asked Prof **E A Graham** (St. Louis, U S.A.), who had initiated cholecystography, to deliver his address

Prof **Graham** said that disorders of the gall-bladder affected a large proportion of adult humanity and probably constituted the most frequent organic cause of dyspeptic symptoms. Yet the known normal functions of this viscus were merely the regulation of pressure in the biliary system and the concentration of bile by the absorption of water Other functions had been suggested, but had remained unproven Sweet had shown that in some animals which do not possess gall-bladders and in animals in which the gall-bladder had been removed there were a large number of saccules projecting from the walls of the intra-hepatic bile-ducts These might compensate for the loss of the organ Apparently, then, the serious consequences of cholecystic disease were due to something else besides the disturbance of the functions of the gall-bladder.

Inflammatory changes in the liver were, he said, a constant accompaniment of cholecystitis. By removing a small piece of the liver during operations on the gall-bladder the speaker had been able to show that a pericholangitis was present in every case. Other workers had corroborated his findings Microscopic examination of gall-bladders removed at operation showed that in the earlier cases inflammatory change was more often found at the periphery than in the mucosa of the organ. The older theory that bacteria especially the typhoid bacillus, were brought to the liver by way of the portal vein secreted in the bile, and thence carried to the gall-bladder, presented numerous difficulties. It was not easy to infect the gall-bladder by introducing bacteria into the lumen unless at the same time the cystic duct or artery was tied or the mucosa injured Moreover, both Osler and Rolleston had shown that cholecystitis was rare in the acute stage of typhoid fever when bacilli might be supposed to be numerous in the bile Infection via the cystic artery had been suggested, but the lymphatic path was probably far more important There was a very extensive anastomosis between the lymphatics of the liver and the gall-bladder. The results of experiments supported the hypothesis of lymphatic infection. Further, recent work on paratyphoid showed that cholecystitis did not occur in this condition unless there were actual inflammatory lesions in the liver. This finding seemed to corroborate the speaker's view of the spreading of a pre-existing inflammation of the liver to the wall of the gall-bladder through the lymphatic vessels Inflammatory lesions of the portal system might easily set up a hepatitis which in turn was followed by cholecystitis. Clinicians had long been familiar with this sequel to such conditions as appendicitis, peptic ulcer, and typhoid fever. The reverse was also true, for hepatitis followed experimentally produced cholecystitis A vicious circle could thus be established, each organ reinfecting the other. Kodama's work on lymphatics showed that a duodenal ulcer might directly infect the gall-bladder. In these cases the accompanying hepatitis would be secondary.

Prof Graham then described the investigations which led to his method of rendering the gall-bladder opaque to X rays by means of injections of tetrabromophenolphthalein, tetra-iodophenolphthalein, and its isomer phenoltetra-iodophthalein These substances were excreted via the liver into the bile They passed into the gall-bladder, where they were concentrated by the absorption of water. Hence the densest shadows were found in normal subjects. There would be no shadow, or only a faint one if the liver were unable to excrete the substance normally, if the cystic duct were occluded, or if the gall-bladder were unable to concentrate its contents because of a diseased wall. Cholecystography was really a means of studying the function of the gall-bladder rather than an indication of the exact pathological lesions present. But since from the days of Galen *functio læsa* had been recognised as one of the cardinal signs of inflammation, this condition, even in its early stages, could be detected by the method

The points relied on, he said, in making a diagnosis of cholecystic disease were: (1) Failure to obtain a shadow when the technique had been properly carried out (2) Filling defects Soft calculi were frequently seen as 'negative" shadows or filling defects Many small stones produced a characteristic mottled appearance. (3) Irregularities of contour, denoting adhesions, diverticula &c (4) Variations from the normal in density of shadow and in time of appearance and disappearance of shadow. These last were more difficult to interpret Out of 1144 cases examined by medicine and rather with politics It had been legally stated that it was ultra vires to attach any such condition Dr J A MACDONALD, seconding, said that it was not desirable to put a restriction on any man Dr E W MASTERMAN said that recently certain boards of guardians had tried to force all their employees, including doctors and nurses, into a trades-union After some trouble the compromise referred to in the motion had been reached, and it would be most undesirable to disturb it Sir ROBERT BOLAM said that the matter had been fully discussed by the Council, they did not wish and had never made any attempt to compel men to enter their own or any organisation, yet it would be the height of folly to refuse what was thus freely offered from an outside body, so long as it did not conflict with their policy or militate against professional integrity It had nothing to do with a trades-union

The motion was rejected by a large majority

Sir EWEN MACLEAN, proposing the adoption of the annual report under "Causation of Puerperal Morbidity and Mortality," mentioned the interim report and questionnaire which had been sent to the divisions, over 100 of which had returned careful answers

Poor-law Reform

Dr BRACKENBURY proposed the adoption of the report under "Poor-law Reform" which had been discussed earlier, and announced that a letter had been received from the Minister of Health stating that steps were being taken to protect the interests of medical officers at present holding appointments under boards of guardians A motion by St Helens and Warrington dealing with this point was therefore withdrawn

The Services

Sir RICHARD LUCE, Chairman of the Naval and Military Committee, proposed the adoption of the annual report under this title, and also

> That the Association expresses its satisfaction with the new rates of pay and conditions of service for the R A M C, and is prepared to assist the War Office in every way in its power to obtain an adequate number of candidates for entry into the Corps

He remarked that it had been promised that time put in as house physician or house surgeon should be allowed to count towards seniority, so that it would no longer be necessary for R A M C candidates to decide on their career immediately on qualification

Dr GOODBODY drew attention to the fact that in the Civil Constabulary civilian medical practitioners had been awarded higher rates of pay than Territorial officers Sir RICHARD LUCE replied that a letter had been received giving assurance that such an anomaly should not occur again if a similar force were called into being Dr GOODBODY said that, as such satisfactory terms had been reached, he would merely move formally a motion by Marylebone

> That the Representative Body, anxious to express its appreciation of the work of the Naval and Military Committee, assures the Council of its support in any further action which it may deem necessary to secure a just recognition of the reasonable claims of officers serving with the forces

This was passed

Sir ROBERT BOLAM expressed appreciation of the amount of time, patience, and strenuous work that Sir Richard Luce had given in helping to arrive at these very satisfactory results

Medical Charities

Dr J F WALKER, proposing the adoption of the annual report under "Medical Benevolence," made a strenuous appeal for a wide support of the Charities Fund, and stressed the very great importance of the work of divisions and branches and of panel committees The honour of the profession and the prestige of the Association were at stake There was no other profession that did not look after its distressed brethren, and there was no doubt whatever that many medical men were being broken in body and spirit through undeserved misfortune—some had been advised to apply for the old age pension—and that there was real distress among them and their dependents which it was the duty of the profession to relieve A subscription of £1 a year from every doctor would be sufficient

Overseas Branches

Sir JENNER VERRALL, proposing the adoption of the annual report under "Oversea Branches," referred to the negotiations with the Colonial Office about conditions of service in East Africa and Kenya, and said that the Office now realised that the Association was anxious to help and not to obstruct them, and to ensure that men entering the Colonial Service should know exactly to what they had to look forward

In addition to the further reports on Scotland, Ireland, and Wales, and formal business, a resolution of condolence was sent to Dr E M Cowell, who had come to Nottingham to represent Croydon, but had spent the week in hospital

Dr T W H Garstang was elected an additional vice-president, in recognition of his long and faithful service to the Association

ANNUAL GENERAL MEETING

The annual general meeting of the Association was held in the Mechanics' Hall, Nottingham, at 2 P M, on Tuesday, July 20th, when the outgoing President, Dr F G Thomson, inducted Mr R G Hogarth as President for the ensuing year The meeting received the report of the Representative Body that Prof Sir Robert Philip had been elected President for the year 1927–28 Sir Robert Philip welcomed the Association to Edinburgh for its annual meeting in 1927, referring to the Lister centenary celebrations with which the visit would coincide Sir Robert Bolam, in proposing a vote of thanks to the retiring President, said how greatly the Association regretted the illness which had deprived them of his presence on the occasion of the Bath meeting The meeting adjourned until 8 P M at the Albert Hall, where the Overseas Delegates were presented to the President by the honorary local secretary, and the gold medal of the Association was bestowed, amidst applause, on Sir Humphry Davy Rolleston, in recognition of his distinguished services to science, the profession, and the Association The first Sir Charles Hastings clinical prize was presented to Dr Norman Porritt, of Llandudno Mr Hogarth then delivered the presidential address which appeared in full in our columns last week

ANNUAL DINNER

The annual dinner, held on the evening of Thursday, July 22nd, at the Palais de Danse, was very largely attended Mr R G Hogarth, who presided, was supported by the Duke of Portland (Lord-Lieutenant) with the Duchess, the Mayor and Mayoress of Nottingham, the Hon Lady Birkin, Mr J Boot, and Mr F Acton In proposing "The British Medical Association" the Duke of Portland paid a tribute to the illuminating presidential address of Mr Hogarth, whom he described as one of the most eminent, most skilful, and most useful citizens of Nottingham He welcomed the Association to Nottingham with the opportunity it afforded to practitioners of learning the latest advances in medicine and handing them on to their patients, he voiced his appreciation of the value of a corporate body in medicine capable of expressing medical opinion to the public and to Parliament, and he announced the opening of a local branch of the British Empire Cancer Campaign, of whose committee he was president Sir Robert Bolam expressed his pride and pleasure at responding for the Association He wished success to the soon-to-be-inaugurated University of Nottingham and reported a year of smooth passage in the affairs of the Association, thanks to the unceasing diligence and toil of its voluntary workers He announced that future meetings of the Association were to be held at Edinburgh (1927), Cardiff (1928), Manchester (1929), and Winnipeg (1930)—in the latter case with a view of binding the ties of Empire He welcomed the effort to make this country accessible for post-graduate work acids and salts either in plasma or in bile In spite of much hard work the speaker had been able to find no way of doing so Obviously variations in these substances must alter the physics of bile and this might furnish the key to many diseases Only one fact about them was known—bile-acids were one of the first substances to cease to be excreted in obstructive jaundice

Cholesterol was then considered According to Naunyn the cholesterol in the bile was secreted by the wall of the gall-bladder, but every other observer was against this view Cholesterol in plasma and bile was derived from the cholesterol esters of the food Its metabolism was extremely conservative It was de-esterised in the liver, excreted in the bile into the intestine, where it was again esterised and reabsorbed This doctrine was founded on a considerable series of experiments, but was in contradiction to the French view According to the French the suprarenal cortex and the corpus luteum of the ovary were the producers of cholesterol in the blood In point of fact, however, these organs only acted as depôts Anything which raised the cholesterol content of the plasma raised the cholesterol in these situations or vice versa

With regard to diagnosis the mere presence of organisms in the bile was insufficient evidence for a diagnosis of cholecystitis Cholecystitis was an inflammation of the wall of the gall-bladder Graham's work on the lymphatic path and on the connexion between cholecystitis and hepatitis was extremely important In inflammatory conditions dead cells, cholesterol crystals, inflammatory exudate, and especially calcium salts were found in the bile Attention to diet was an important means of treatment, but it was useless to think that by withholding cholesterol the formation of stones could be prevented Its metabolism, as already explained, was too conservative to enable us to cut the substance out by dietetic measures Since sugar increased the excretion of bile-pigment and since glycogen protected the liver cells from a great variety of poisons, Dr McNee recommended the use of sugar in treatment

The speaker asked Prof Graham whether "bad arms" had followed intravenous injections of his drug

Dr T Izod Bennett said that the practitioner encountered many exceptions to the text-book pictures of gall-bladder disease The range of symptoms was very wide, tenderness to pressure below the right costal margin, when the patient was in the upright position, was the most constant sign Cholecystography had opened up a new phase in diagnosis The results in his experience were most satisfactory He employed the oral method exclusively It avoided "bad arms" due to thrombo-phlebitis in the vein In some instances variations in gastric and duodenal secretions had caused trouble in absorption, but if cholecystography was to come into general use the substance must be easily given without risk of local trouble The method enabled us to watch the progress of a case under medical treatment Dr Graham had done more than any surgeon to save patients from needless operation In treatment the speaker insisted on the necessity for water in abundance Egg-yolk also promoted biliary drainage The drugs he used were magnesium sulphate, bile-salts, and hexamine

Dr J H Anderson analysed a series of 50 cases and showed radiograms At first he had used intravenous injections, but he had given them up in favour of the oral method He had had no alarming after-effects In every case save one the X ray diagnosis had been confirmed at operation

Sir Berkeley Moynihan said that in a long series of cases diagnosis by cholecystography had proved accurate in 92 per cent Its value to the clinician was great, but greater still was the help it gave in determining physiological data Infections of the gall-bladder began outside, as a rule, and reached the inner surface later All gall-bladders showing adhesions should be removed Sir Berkeley Moynihan differed somewhat from Dr Graham in his opinion of the value of estimating cholesterol in the blood In the early stages of cholecystitis he had found a cholesterinæmia in a high proportion of cases The cholesterol in the bile was also increased, leading to the "strawberry" gall-bladder

Sir Humphry Rolleston said that he could not agree with Dr Hurst that we could hope with improved early diagnosis and treatment to do without surgeons. He had long used hexamine in gall-bladder disease. It gave relief, but he could not promise cure Early diagnosis was difficult because very considerable lesions often occurred without corresponding symptoms

Prof Graham, in reply, said that this morning's symposium had been one of the most interesting to which he had listened In answer to the question about "bad arms" he had had occasional cases of thrombo-phlebitis, but with improvement in the drugs used he hoped to do away altogether with this complication He was now using a new substance, and so far had had no local trouble with it.

SECTION OF MEDICAL SOCIOLOGY

Friday, July 23rd

Occupational Fatigue and Monotony

Dr C J Bond, the President, in his opening address at the morning session, said that, owing to the increasing stress of modern industrial life, the questions of the effect of fatigue and monotonous work were becoming of increasing importance, so that it was most desirable to enlist the interest of the whole medical profession in the advances recently made in this field of industrial physiology and psychology The meeting of this section, being open to the portion of the lay public interested in industrial health and welfare work, presented an excellent opportunity of hearing the views of representatives of the Industrial Fatigue Research Board and the National Institute of Industrial Psychology, of medical officers of large industrial undertakings of employers of labour, of welfare workers, and of the workers themselves Two principles must be kept in mind, if they were to build on a sound foundation (1) Every normal human being strives to obtain some sense of satisfaction from energy expended and work done, and failing such acquirement, effort becomes reduced in volume or is diverted into other channels It was just as important to raise the standard of life in the factory and workshop as in the home If workers derived real satisfaction from their daily work there would be less unrest in industry (2) The second principle was concerned with finding the right man for the job—vocational selection. The industrial problem was an evolutionary one, and the worker must be fitted by nature or by training for his particular occupation and become adapted to his industrial environment

Mr A Hudson Davies, of the National Institute of Industrial Psychology, opened a discussion on the

Monotony Factor

He gave the University boat race as an illustration of monotonous work. The effect of monotony was felt in the training, but not in the race, owing to the incentive A muscle exhausted by repeated contractions would still contract under electrical stimulation. Industry was becoming specialised and repetitive work was the result—the same effort repeated every few seconds with uniformity and no surprises for the worker and no variety so as not to waste a man's special skill The effect varied with the worker There was a perpetual holding by the worker of himself in check, but no freedom for reveries Workers of good education and intellect employed at, say, a monotonous counting job, might feel resentment that their full powers were not being called out, and gradually become conscious of a hampering of intelligence and of inertia Others might develop curious mental symptoms, indulge in day-dreams with a feeling of guiltiness and even fancy they were being watched or going mad Sometimes the irritability or resentment of the worker found relief in spoiling material It was most important to counter all the cholecystography 128 had their gall-bladder removed at operation. The pathological examination confirmed the X ray diagnosis in 124. Toxic reactions occurred in a certain number of cases after intravenous injection and more after oral administration of the drug, but they were seldom severe. No death had been recorded following the injections.

Besides its clinical application cholecystography had been made use of in the study of the physiology of the gall-bladder. Prof. Graham's own findings and those of his co-workers threw considerable doubt on Meltzer's hypothesis of a reciprocal innervation of the sphincter of Oddi. The gall-bladder contained but little muscle. In spite of prolonged observation the speaker had never seen peristaltic contractions. The viscus emptied itself by a gradual washing out following the inflow of fresh bile and by elastic recoil. Increased abdominal pressure also played a part. The muscular coat of the duodenum was an important factor in regulating the outflow of bile. The common duct passed obliquely through the duodenal wall for 2 or 3 cm., so that peristaltic contractions had a milking action on it. Substances supposed to have a specific effect in emptying the gall-bladder probably did so by stimulating duodenal peristalsis.

The speaker illustrated his points by a series of remarkable X ray pictures.

Diagnostic Considerations

Dr. A. F. **Hurst** said that gall-stones were found post mortem in 10 per cent. of cases after the age of 20. Their formation was always preceded by cholecystitis, but many people who had attacks of cholecystitis did not develop gall-stones. A large part of the population suffered at one time or another from the disease. Therefore cholecystitis was not only, as Prof. Graham had said, the commonest organic, but the commonest of all abdominal diseases. Text-books gave much space to the rarer and more serious lesions of the gall-bladder such as empyema or gangrene, but little to the more important because much commoner milder infective disturbances. The latter in the early stages were amenable to efficient medical treatment, and the formation of gall-stones could be prevented. It was important that practitioners should realise that cases of flatulent dyspepsia might really be cholecystitis. Sir Berkeley Moynihan had described the symptoms with great accuracy. The chief were tenderness in the region of the gall-bladder, spots of referred tenderness, and slight rigidity of the right rectus muscle. For accurate diagnosis, said Dr. Hurst, the patient should be sent to a team (a diagnostic team of this type should exist in every town) consisting of a radiologist, biochemist, bacteriologist, and clinician. A complete abdominal examination was necessary because cholecystitis was often associated with appendicitis, peptic ulcer, &c. Hyper- or achlor-hydria existed in 50 per cent. of the cases. The speaker considered that the information to be derived from the passage of a duodenal tube was as important as that obtained from cholecystography. Normal cholecystograms were sometimes found in patients in whom the duodenal tube gave evidence of disease. In cholecystitis the bile specimens withdrawn contained pus and epithelial cells, organisms (generally *B. coli*), and cholesterol crystals.

With regard to treatment, Dr. Hurst maintained that cholecystitis was an infective disease and the infection must be overcome. The biliary tracts could be sterilised by hexamine. Hexamine was not, as a rule, effective in alkaline secretions, but bile was an exception probably owing to lowered surface tension. If sufficient alkali was given with hexamine it did not act as a urinary irritant and could be administered in large doses. He frequently gave 100 gr. three times a day. This quantity acted as a powerful biliary antiseptic. Achlorhydria was a predisposing cause of biliary infection, and to patients showing this symptom he was in the habit of giving a drachm of dilute hydrochloric acid before meals. Hyperchlorhydria could be controlled by olive oil, which had the additional advantage, as Prof. Graham had shown, of causing a flow of bile into the duodenum and thus preventing biliary stasis.

Dr. F. A. **Knott** drew attention to some important points in connexion with the use of the Einhorn tube. He analysed a series of 71 cases of gall-bladder disease in which examinations had been made of bile from the duodenum. Out of 25 cases of gall-stones three gave normal reactions. In the others the bile contained crystals and bacilli. In 46 cases without calculi the bile gave normal reactions in 26 per cent. 40 per cent. of cases showed achlorhydria. He thought that the action of urotropine might be due to the acid produced by the organisms. *B. coli* might ring themselves round with acid and formaldehyde might thus be liberated in their neighbourhood. Lowered surface tension also was inimical to the growth of bacteria.

Prof. D. P. D. **Wilkie** expressed his satisfaction at finding cholecystography so widely practised. It was an extremely valuable aid to diagnosis and should become a standard method. His experience was in conformity with Prof. Graham's statement that the intravenous method gave the most accurate results. Very great care in technique was necessary to prevent reactions. He found that males were more immune from reaction than females, perhaps because the male was more immune to cholecystitis than the female. Dr. Wilkie spoke of the value of physiological research into the functions of the gall-bladder and remarked that the exalted egoism of the sphincter of Oddi had been rudely shaken by Prof. Graham and his co-workers. Dr. Hurst and Dr. Knott had stated that primary infection of the gall-bladder was the origin of all stones, but a single cholesterin stone might form aseptically. He had grown streptococci from the wall of the gall-bladder in cases where the bile itself was sterile. From this it followed that the presence of disease could not always be proved by the Einhorn tube, nor could it necessarily be cured by drugs excreted into the bile.

Mr. C. F. W. **Illingworth** gave his experience of cholecystography. He had followed Prof. Graham's technique and preferred intravenous administration of the drug. In 111 cases which came to operation the X ray diagnosis was confirmed in all but 12. In his hands the method had been of no value in obstructive jaundice, but was of great assistance in the differential diagnosis of palpable abdominal tumours. His paper was illustrated by beautiful X ray plates.

Alterations in Biliary Secretion under Different Conditions

Dr. J. W. **McNee** dealt with the alterations occurring in the biliary secretion under different conditions. Normally the chief constituents were water, bilirubin, bile-acids and salts, and cholesterol. In disease additional substances were found, the most important being calcium salts. Bile as secreted differed from that found in the gall-bladder, principally owing to the absorption of water by this viscus. In animals gall-bladder bile was ten times as concentrated as that found in the biliary passages. Only two functions of the gall-bladder were known, but it must have others besides. It was ridiculous to regard it as a rudimentary organ just because surgeons could remove it. Speaking of changes in the bile-pigment the speaker said that bilirubin was derived from hæmoglobin from which the iron-containing particle had been split off. Therefore it might seem that the amount of bilirubin must depend on the amount of hæmoglobin broken up—i.e., on blood destruction. In favour of this was the fact that in acholuric jaundice pigment stones were frequent. On the other hand, Whipple and Hooper found no increase in bile excretion after large injections of hæmoglobin. The effect of increased blood destruction appeared very variable. Diet, however, might considerably modify the pigment excretion. In dogs on a mixed diet there was little variation, but if sugar or carbohydrate were given the pigment excretion was considerably increased and remained so for some hours. Meat, on the contrary, led to a diminution in excretion. It was unsatisfactory that no accurate method existed of determining bile-labour, and machinery must be studied from the point of view of the comfort and convenience of the workers Mr Hichens went on to refer to the work of Taylor and the Gilbreths in America In that country the workers took more interest in scientific management and time and motion study, and the trade unions helped by appointing their own investigators But research work of the kind necessitated was slow and had to be continued over long periods Workers must be got to appreciate that posture and change of posture were important. Local fatigue of muscles might be alleviated by bringing in other groups of muscles Rest pauses were important Hours of labour had unfortunately become a political question and were not studied scientifically Temperature affected output, which was greatest in winter In hot mines the output was lower than in cooler Amongst other matters needing study were the incidence of sickness, the proper lighting of factories with the prevention of eye-strain, the provision of baths, vocational selection and guidance, and the liability to accident The Government, employers, and workers must encourage the Board and secure research on a bigger scale

Dr H M VERNON investigator for the Board, followed with a paper, illustrated by lantern slides, dealing chiefly with workers engaged on strenuous work at high temperatures in the tinplate industry, in steel melting on open-hearth furnaces, and in coal-mines His slides showed graphically how the output decreased in the hotter months of the year and how very greatly this decrease was lessened by good ventilation and attention to cooling If the ventilation and cooling were not adequate, he showed the fatigue induced caused excess of sickness, chiefly displayed in rheumatism and respiratory diseases. Regulations for rest pauses were possible in light repetitive work, but not in this heavy work. In some cases the rests were taken with regularity, but the coal-miners took their rests irregularly

In closing the Section the PRESIDENT made reference to telegraphists' cramp and the value of counter-action by bringing into play other groups of muscles He laid special emphasis on the valuable results which would accrue from attention to vocational selection

Reviews and Notices of Books.

RADIOLOGY

Radiotherapy in Relation to General Medicine By FRANCIS HERNAMAN-JOHNSON, M D Aberd Oxford Medical Publications London Oxford University Press 1926 Pp 211 5s

THIS small handbook, directed to the general practitioner who wishes to know something of the theory and application of radiotherapeutics, is written by one who has great and wide experience of the subject Since the advent of the intensive methods of X ray treatment the complexities of the mechanism and mathematics have overshadowed the medical aspects of the subject As Dr Hernaman-Johnson puts it "the radiotherapeutist has in the past of necessity been over much preoccupied with the technique of his art", the author attempts to write as a physician practising radiology The result is not a text-book, but a common-sense, individualistic, and readable exposition of the present position of radiotherapeutics in relation to general medicine It is obvious that the writer has taken pleasure in setting forth his views unhampered by the technicalities of his subject The short chapter on the essential elements of the physics of radiation has the visé of Dr G W C Kaye, of the National Physical Laboratory, in the chapters on the effects of radiation on the normal cells and the nature of disease, Dr Hernaman-Johnson has the support of Dr Mottram, the Director of Research of the Radium Institute, Prof Russ, of the Middlesex Hospital, has read through Chapter IV with a view to securing accuracy as to the references to animal experiments in relation to cancer

The rest of the book is a well-reasoned statement of the author's own practice in relation to the treatment of cancer in various regions, in pelvic conditions such as uterine fibromata, in hyperthyroidism, affection of the ductless glands, tuberculous glands, and many other diseases The treatment of superficial conditions receives only passing reference Of deep therapy, as enunciated by the Erlangen school, the author states that it is quite unsuccessful in the treatment of the hopeless cases of cancer as we see them, but he is prepared to believe that these intensive methods may be of value for early cancer of the uterus, a condition which is rarely passed over to the radiologist in this country He holds that this particular technique for deep therapy should only be employed for comparatively small circumscribed areas, the constitutional reaction from the treatment of large areas making the procedure unjustifiable Obviously, deep therapy has a definite place in medical treatment, particularly of cancer, but the kill or cure method of using it as laid down by the Erlangen school should be replaced, the author holds, by a much less drastic technique, the big doses being divided over several days

We can strongly recommend this small volume as a clear statement of the medical side of radiotherapeutics

---

The Technique of Oral Radiology By CLARENCE O SIMPSON, M D, D D S, F A C D. St Louis, Mo London Henry Kimpton 1926 Pp 207 21s.

THE use of X rays in dentistry has progressed very rapidly since the days, not so long ago, when specially prepared dental films first became available, days when dark-room assistants cut and wrapped pieces of X ray plates or ordinary photographic films for each exposure In this volume we have a book of 200 pages entirely devoted to the consideration of this one branch of radiology With 165 illustrations and a clearly expressed text, the technique is explained simply and clearly, and in a way that should be useful, particularly to those who have not expert knowledge, even for those who are experienced there are many tips which will prove useful We would specially commend the chapter on Systematic Procedure as being concise and most helpful It is interesting to note that the author uses an ordinary X ray tube stand for this work and not one of those specially designed for dental purposes The last chapter is devoted to a wise discussion of protection from the dangers of X rays, and, if the author's recommendations are carried out, the operator should not receive any radiations which will do him damage

Those interested in dental radiography will learn much from this work

---

INSTINCT A STUDY IN SOCIAL PSYCHOLOGY By L L BERNARD, Professor of Social Psychology, University of Minnesota London George Allen and Unwin Pp 550 15s

THE aim of this book is to show the fallacies supposed to underlie current conceptions of instinct The word is so widely and loosely used that attack is easy, but the argument centres on McDougall's well-known work, which attempted to build up a social psychology on the basis of instincts common to man and the lower animals The author regards instincts as reflexes or action patterns which in man are mostly vestigial and so disintegrated by the encroachment of habit that the theory of instinctive control is valueless when applied to sociology Yet he concludes that "The real task is to discover the mechanisms by means of which the child and the citizen build up their habits upon the basis of the instincts, directly or indirectly, and by means of which one habit or set of habits is transformed into another" This is a fair expression of the aim of possible effect of monotonous work by attractive environment in the factory and by outside recreation

Miss May Smith (Industrial Fatigue Research Board) said the complaints of monotony generally came from highly educated observers, who judged how the work would affect themselves Observers must learn to see the work as it really appeared to the worker They need not concern themselves about people who desired monotonous work, but only with those who were forced or drifted into it Among the latter some of the reactions to monotonous work were boredom, excuses for escape from work, resentment of correction, tiredness complaints of pain, nervous dyspepsia, lessened resistance to colds or influenza, and loss of interest leading to nervous breakdowns Some got relief from day-dreams, others had unpleasant day-dreams and became psycho-neurotics Others made bitter complaints against the monotony, while some laughed at monotony, and she had known such an event as the preparations for a fancy dress dance temporarily relieve the situation

Major T. Knowles (supervisor, Boots' welfare centre) made a spirited defence of repetitive work and claimed that the girls employed on it were both healthy and happy The work was easy and not nerve-wearing, and the workers got their opportunities for recreation and self-development in their leisure Science had given them machines, and machines necessitated repetitive work with much less physical effort on the part of the operative He would like to encourage the love of machines Those who condemned repetitive work had nothing to offer in its place The girls engaged in repetitive work to a large extent made up the evening classes in commercial and domestic subjects, and resented any effort to have their work changed The percentage of sickness among them was about half that of the other workers They played their part in social, educational, and recreational developments But he would only plead "not guilty" on the monotony question, for the employer *if* he had taken every precaution, had observed time-shifts and studied movements, and provided proper ventilation, rest pauses, and suitable apparatus to ensure safe and easy working He believed that industrial welfare was the expression of industrial conscience, willing and anxious to uplift our factories and warehouses and bring business to a grand conception of its duties to those it employs, and to the public at large And, in connexion with the welfare work at their own factories, he desired to pay tribute to the local medical practitioners for their coöperation

Miss Slocock (H M Inspector of Factories, Leicester) said the reaction to monotony was a matter of temperament One of the troubles in modern industry was the loss of the creative sense, because the worker did not see the finished work as a rule In this respect weavers had an advantage, which accounted for that work being popular With repetitive work had come shorter hours, and to-day under modern conditions the workers appeared to be brighter and more alert even when performing monotonous jobs Monotony could hardly be considered alone, and there was no agreement as to the adverse effect on health of repetitive work A good environment, good working conditions, and a friendly atmosphere in the factory were more important

Miss K Dowding (Chiswick Polish Co, Ltd) thought very little monotony was felt by girls in well-organised factories, but some girls were constitutionally or emotionally unfitted either for working on machines or at piece-work. Return to craftsmanship was impossible and the modern girl disliked the solitary spinning-wheel Love of machines was not now a male perquisite only The placing of operatives suitably was being more and more attempted, for it was realised that one discontented worker might affect a whole group and spoil the output The feeling of being absorbed into a vast impersonal soulless mechanism had to be combated by recreations and the holding of individual positions in outside activities Girls were favourably influenced by working with their friends, even if they could not talk to them The personal element must not be ignored Monotony was not a problem by itself

Dr Stuart Mackintosh (Hampstead) discussed the subject from the racial and temperamental point of view

Dr J Jenkins Robb (Bourneville) thought the study of psychology in labour might easily be overdone The worker was suspicious of repetitive work because it increased profits more than wages The stress of modern industry affected all ranks of labour, including the highly paid jobs

Dr Leonard Lockhart (Boots' Pure Drug Co) uttered a warning against labelling vague ill-health as "neurasthenia" It was difficult to unstick the label He appealed for the cooperation of the general practitioners with the works doctors and for the recognition of the latter under the Insurance Act

Dr Christine Murrell said the highly educated worker should be kept out of monotonous and unintellectual tasks by vocational tests

Dr C Forbes (Aberdeen) pointed out that instruction in industrial medicine was needed for insurance practitioners

Sir Thomas Legge (Chief Inspector of Factories) reviewed the history of the guilds with their care for the sick, their efforts to promote good work and pride and joy in the work, and their strict regulations, designed to foster these aims The guilds supplied people with what they ought to want, not with what they might think they wanted Welfare work was now bringing back "the interest in the job" lost during the industrial revolution of the last century Monotony had not come much before him and took a back seat in comparison with the removal of gross defects in environment

Dr H B Brackenbury said monotony was not merely repetition The mental effects of monotony might need to be dealt with without waiting for environment to be made perfect The pride in the finished product might be replaced in various ways The finished article should be brought to the notice of all who had had a hand in turning it out, so as to stimulate communal pride in the team work and the life of the factory Better education in art, such as they were getting in their schools, would stimulate artistic pride in the factory and the articles it produced To many people their leisure was more monotonous than their work Attention to recreations and activities outside the work of the factory would help to bring about a proper attitude towards life

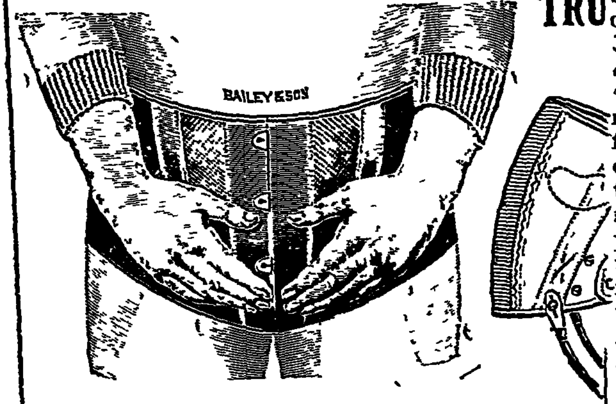
At the afternoon session the Section discussed the

Physical Fatigue Factor

Mr W L Hichens (chairman of Cammell, Laird and Co), a member of the Industrial Fatigue Research Board from the early days, opened the debate on this subject The reproach, he said, that industry in this country had not made enough use of science was probably true, and they certainly had not given enough attention to the human factor It was not enough for employers to want to make their workers healthy and wealthy, they needed to make them contented, and contentment did not come from mere health and wealth, but from the knowledge that the conditions under which a man's living was being earned were the best possible, and that every consideration was being paid to him as a human being The name of the Industrial Fatigue Research Board was perhaps unfortunate, but it had done good work, and could do much more But the Board needed encouragement not only financially They wanted more interest taken in their work and to have a wider sphere of influence No industries nowadays involved serious injurious fatigue to normal workers in good training Nature made a man go slower when fatigue began to operate During the war the special effort and the longer hours affected the work, but did not damage appreciably the health of the workers Shorter hours brought better work. Fatigue in strenuous work might be a predisposing cause to disease So far as possible all unnecessary effort must be saved by the substitution of machines for hand-

Telephone No : GERRARD 3185 **W. H. BAIL**

TRU



THE "BURLINGTON" BELT
Equally suitable for Male and Female
Conforms accurately to the figure, allows perfect freedom of movement Easily adjusted by a simple fastening in front
Can be regulated by a lacing at the back so that a uniform support can be maintained or gradually increased day by day if required

No 5
FOR
The
stru
deep
is n
Ver
obt

Lift to Private Fitting Rooms on the Premis.
Catalogues post free
Surgical Instruments and Appliances (NEW ADDR
Hospital and Invalid Furniture - - -

for recruiting or retaining in the care of the ntally sick those with a real gift for mental ursing, even if unable to pass the examination tandard for general nursing

In regard to the fear, largely responsible for the nquiry, that under the present system there has been a risk of wrongful certification and a lack of kindness and consideration in treatment the Commissioners are able fully to reassure the public, for they state that instances of sane persons being certified as insane are of the rarest occurrence and that, although isolated instances of cruelty have occurred, there is no foundation for the suggestion that ill-usage has been deliberately or systematically practised At the same time they point out that, while the public must be safeguarded against the presence in their midst of persons of unbalanced mind and dangerous tendencies, the reluctance is inevitable of medical practitioners, in the present state of lunacy law, to be involved in the certification of the insane, owing to the risk of legal proceedings They therefore propose that doctors shall not be liable to be proceeded against in a civil or criminal court unless they have acted in bad faith or without reasonable care, and that any such proceedings against them should be stayed by summary application unless the court is satisfied of wrongful motive or neglect of precaution The Commissioners accept the need for the existence as a separate organisation of a Board of Control, subject, however, to general control in matters of policy by the Minister of Health, but they think that the Board should be reorganised so as to consist of a small headquarters staff of four or five Commissioners, assisted by a much larger visiting staff of Assistant Commissioners Every facility is to be given for making the public familiar with the inside of the mental hospital by means of voluntary unofficial visitors of suitable experience to be appointed by the authorities of every institution, liberty being given to visiting committees to coöpt suitable persons who are not members of the local authority, at least two of whom should be women

The Report is a bold though temperate acknowledgment that the existing lunacy administration has not kept pace with increasing sociological experience, and especially has not evolved in proportion to a vast modern growth of medical knowledge both general and in the field of medical psychology Yet some of the suggested methods of reform have already been adopted by enlightened mental hospitals Many others would now be in working had it not been for financial difficulties which have become more acute n recent years Most of them have been recommended or long by the Medico-Psychological Association It will be no small relief and satisfaction to the mental ospital service if measures which have so far been ardly achieved by constant pressure and scrupulous conomy now become statutory duties The early reatment of mental disease without certification has ready made a beginning in various places in spite of gal hindrance, and the recommendations of the mmission as a whole will have the solid support the medical profession But early treatment and dance of detention under certificate can only be ved when an intimate knowledge of the first toms of mental disorder becomes the common sion of the whole medical profession, and we all attention again to our issue of a Special ent on Early Mental Disease, written by those hority and knowledge expressly to meet this The Supplement appears simultaneously eport of the Commission

BRA
fo
ILLN
mea
MART

A Necessity in The Hospital The Nursing Home The Sick Room

McDougall's "Social Psychology," but from occasional references to his opponents' views as mystical or metaphysical one judges that the real point of difference is that Prof Bernard is one of those who dislike the psychology that pries into human motives In the endeavour to escape such a psychology he is driven to use curious conceptions, as when he writes (p. 466): "The activity attitude, or even the organisation of the neural processes along the lines of thought, cannot be immediately repressed or undone" This goes beyond the world of physics and would be scorned by metaphysicians, perhaps it might be described as paraphysics

The theory of instincts is far from satisfying and may undergo many changes or ultimately be cast aside, but it serves too useful a purpose to be relinquished as a result of purely destructive criticism

---

DISEASES OF THE KIDNEY

Pathologie und Klinik der Nierenerkrankungen
Second edition By Prof FRITZ MUNK Vienna: Urban and Schwarzenberg 1925 Pp 661 M 25 50

THIS important treatise is the second edition of Prof Munk's well-known work on Bright's disease and kindred disorders There is no reference book in English which deals with the subject so broadly and at the same time in such detail, and since the first edition has been out of print for some years its successor has been eagerly looked for The first 150 pages deal with the physiology of renal secretion, the urine in health and disease, and functional efficiency tests The rest of the book is concerned with Bright's disease in its various forms The author divides Bright's disease into the three main categories of Nephrosis, Glomerulo-nephritis, and Interstitial Nephritis as a manifestation of Essential Hypertension

As an original contribution to medical literature the section dealing with nephrosis is the most important because, although Volhard is responsible for naming the group of renal conditions which are included under this term, it was Prof Munk who first made the distinction for clinical purposes between lesions which are initially or primarily degenerative and those which are definitely inflammatory The distinction is largely made on a pathological basis, but the author maintains the distinction clinically, and he takes syphilis of the kidney as the classical example of nephrosis, he speaks of the syphilitic virus as the cause of typical pure lipoid-nephrosis, using the term in both a pathological and clinical sense A discussion of the term "nephrosis" and the meaning given to it will be found in a short introductory chapter (pp 173–184) preceding the detailed discussion of Bright's disease, and again in the sections describing lipoid-nephrosis In the rest of this chapter there is a good deal of perhaps unavoidable repetition The chapter on nephritis (pp 365–496) is chiefly concerned with glomerulo-nephritis, and the main feature of the author's presentation of this section is his insistence on the now generally accepted view (which he has held for many years) that nephritis is a general disease in which the kidneys are chiefly affected The account on p 405 of cases of Bright's disease in which there was no albuminuria or cylindruria is interesting in this connexion The last chapter deals with Interstitial Nephritis as a manifestation of Essential Hypertension These terms are so open to alternative construction that the actual phrase used in the text may be given "genuine Schrumpfniere" als Teilerscheinung der "genuinen Hypertonie" (author's inverted commas) The view is put forward that anatomically interstitial nephritis is really a disease of the blood vessels, in contradistinction to the older view that it is primarily a disease of the kidneys

It will be evident from this brief survey that Prof Munk presents each of his three main subjects as a thesis Nephrosis is characterised by its being a degenerative as opposed to an inflammatory change in tissue structure, glomerulo-nephritis is a disease of the whole body, interstitial nephritis classed with essential hypertension (there is no reference to the late Sir Clifford Allbutt's work) is a disease of the blood vessels Bright's disease as a name for the whole group finds no other term to replace it, and yet as a disease of the kidneys *ueberhaupt* it may seem to the reader of this treatise that it ceases to exist

---

EDWARD THRING MAKER OF UPPINGHAM SCHOOL

By W F RAWNSLEY. London Kegan Paul, Trench, Trubner and Co, Ltd 1926 Pp 103. 3s 6d

THE life of a great schoolmaster is a medical subject, and no great schoolmaster ever realised more acutely than Edward Thring the value of education in its bearing upon the wholesomeness of the future career That the body should be as keen and alert as the mind was the inspiration of his work, as it is the physician's ideal

Thring's biography has already been written by Sir George Parkin, the organising secretary of the Rhodes Scholarship Trust, and a keen enthusiast for progressive education Parkin was a profound admirer of Thring, but he knew him personally hardly at all, and had to rely on diaries for the more intimate details of his subject When the biography appeared it was not felt to be an adequate picture, it contained Thring's meditations on many of the obstacles that beset him as a reformer, but did not convey the intensely human and active side of his life Mr Rawnsley, the son of Thring's friend, a pupil at the dawn of the transformation of the local grammar school into a leading public school, and later a house-master at Uppingham, draws a vivid picture of the great little man who for thirty-four years was the hero and terror of his charges his strenuous devotion to duty and his power of putting his heart into holiday-making, his merriment and his causticity are faithfully recalled

Thring's father was a Somersetshire squarson, and his mother a descendant of seven generations of clergymen, he was born at a time when educational methods were based on severity and characterised by absence of sympathy Many medical men find that these methods are to-day over-reversed, and that they have to deal too often with physical troubles due to spoiling, but there is no doubt that in early Victorian days a rigorousness towards children survived that was alike an anachronism and a hurtful thing It was his memories of his early life that made Thring long to make the sojourn of boys at school a more human matter Not that he himself seems to have suffered personally at Eton, either as an Oppidan or a King's Scholar, he emerged as a distinguished classic, an adequate sportsman, and a happy man But he was profoundly humane, and he knew that many of his school friends had been miserable, and that it was no part of school life at that time to take note of such cases He took Holy Orders upon graduation, and in 1853 was offered the headmastership of Uppingham, an ancient grammar school which at the time was reduced to 25 boys His stipend was £150, and he had little personal means He must have accepted the post, primarily because he felt that he had what is often described slightingly as "*a call*" to the cause of education, for Thring was never in any doubt that he was doing work for God In the second place he entered upon his headmastership in the spirit of adventure He had theories and views upon education, and he wished to see them in practice He put them to the test and succeeded in increasing the number of boys to 300—beyond which figure he always refused to go for an upper school—and it is the story of this work which Mr Rawnsley tells very briefly but none the less thoroughly The flight of Uppingham to a Welsh fishing village during the resewering of the Rutlandshire town was a famous example of organisation, though the circumstances which brought about the migration are, fortunately, such as modern public health administration have made impossible matter with the poor is poverty' is not substantiated by these investigations, which show that the problem of a slum population is far more complex than such a statement would indicate."

Current teaching, they suggest, gives too much rather than too little, weight to the environmental factors which, theoretically at least, it might be possible to remedy by economic adjustment; in spite of conditions around him the slum child tends to develop on the lines of his parents. Both for its interesting conclusions and as a record of well-conceived investigation the report deserves wide circulation. It is a work of art, because it depicts elusive and complicated phenomena in words and figures, and to read it is an education in scientific method.

◆

THE B.M.A. MEETING AT NOTTINGHAM.

NOTTINGHAM was something of a surprise to the many hundreds of medical men and women gathered there last week at the ninety-fourth annual meeting of the British Medical Association. Although a very important industrial centre, and happily in most directions a prosperous one, the stigmata of industrialisation are scarcely to be observed in a city of cleanly aspect with pleasant undulations and large open spaces, and the casual visitor may remain unaware that there are several coal-mines within the municipal boundary and at least one hundred hosiery factories within the county, apart from the mass production of fine chemicals, tobacco, and cycles. Most of the meetings of the Association took place in the University College which, through the generosity of Nottingham's industrial magnates, is shortly to be removed to a new and admirable site where, it is hoped, a great North Midland University may soon come into being. Happily, the hospital buildings by successive enlargement have kept in touch with the increasing population and with the growing demands of scientific medicine, a new out-patient department with a magnificent central waiting-room is approaching completion, and when the time comes these buildings are fit to take their place on the clinical side of the medical school which need hardly wait long to appear after the grant of a charter to the University.

The sectional meetings covered a wide range of subjects, many of them of immediate practical interest to the general practitioner of medicine, and the Duke of PORTLAND was no doubt right in describing the meeting as a magnificent opportunity offered to general practitioners to learn the latest advances in medicine and to hand them on in turn to their patients. Several sections took on an international character in their discussions, notably the Section of Anæsthetics, which utilised the opportunity of a visit to Europe of a number of transatlantic anæsthetists, a joint meeting with the Section of Surgery being arranged to discuss the principles of anæsthesia in abdominal surgery as they have not previously been discussed in this country. While we have many excellent methods of anæsthesia, most of them fairly easy of application, and while the art of anæsthetisation is rising to the status of a science, it has still to be remembered that relaxation and quiet breathing, so essential to the abdominal surgeon, are not the only things to be kept in mind, for the patient is something more than an abdomen, and has a brain, a heart, kidneys, and a liver which may be impaired by the anæsthetic employed. Several American and continental delegates set out the practice of the newer gaseous combinations whose attractive novelty is not their only justification for employment as analgesic agents. In the Section of Medicine, one session of which we are able to report this week, a discussion on blood transfusion in the treatment of disease took on a wider scope from the presence of Prof. R. CRUCHET, of Bordeaux, and Prof. E. A. GRAHAM, of Toronto, while Prof. CARTER WOOD, of Colombia, communicated his experimental results with lead in the treatment of malignant neoplasia to a later session of the same section.

On the administrative side this year's Representative Body had no burning question to discuss. Dr. BRACKENBURY, as chairman of the Body, was able to report, with perhaps a twinge of regret from a practised controversialist, a year of smooth passage in the affairs of the Association. Only the Memorandum of evidence submitted to the Royal Commission on Local Government came in for some hostile criticism and was referred back to the Council for further consideration before action. All were agreed as to the principle of separating health services from other administrative services and then combining them first centrally and then locally under one form of administration, and agreed also on the impracticability of the ideal parcelling out of the country into fresh areas, each with a large town as centre; but the Medico-Political Committee of the Association, through its Chairman, voiced its disfavour of the proposal to give to county councils control of all health matters within the county even should it contain such a large borough as Willesden with its 200,000 inhabitants and its successful autonomous authority of long experience. There was some feeling in the Body that the proposals in the Memorandum might smooth the way for a State Medical Service, in spite of Dr. BRACKENBURY's categoric assurance that the extended employment of local practitioners in auxiliary services and clinics should act as a bulwark against a State service. In his admirable presidential address, which we published last week, Mr. HOGARTH championed the principle of voluntaryism, so triumphantly maintained in hospital practice, and stated the one urgent need of the Insurance Service to be the linking up of the insurance practitioner with the consultant physician and the consultant surgeon in order to give the insured patient the benefit of specialised as well as general medical knowledge. He also forecasted the rapid extension of the system of paying wards in hospitals. The key-note of his address was the consistent aim to raise the general standard of health among all ages of the community and especially among the adult workers. This aspect of health work was reflected in the remarkably interesting sessions of the Section of Medical Sociology which we also briefly report in this issue. The discussion was piquant for the frank line taken by speakers, both lay and medical, in denying the existence of harmful monotony in the life of factory operatives under proper conditions. One prominent welfare worker, indeed, challenged the right of those who chose such a sport as angling for their recreation to brand as monotonous any repetitive occupation. If only the work is done under healthy conditions and the worker has the opportunity of honest pride in the finished product, medicine can say little, it was urged, against routine occupation which leaves the worker free to develop his powers of body and mind in his leisure time. Most of the world's work is routine work, said Mr. HOGARTH in his address, and the conditions of factory life as observed in Nottingham during the visit of the British Medical Association no doubt gave many of its members the opportunity of reconsidering some of the almost prejudged questions of industrial fatigue. The meeting of the Association, although not outstanding in any one direction, was felt to be a thoroughly useful and instructive one.

POVERTY, NUTRITION, AND GROWTH

Current opinions on social problems are mostly based on small series of observations by individuals Nowadays, however, evidence is being collected on a larger scale Groups of investigators dealing statistically with great masses of material can form conclusions comparatively free from personal bias, and it is interesting to see how far research scientifically conducted really bears out the generalisations usually regarded as truths The first results of one such undertaking are now being published[1] After six years of work the Scottish Committee for Child Life Investigation, under the chairmanship of Prof Noël Paton, has produced a report so elaborate as to justify its exceptionally interesting conclusions The investigation is described as "the first extensive attempt to estimate the influence of various environmental conditions on the growth and nutrition of the slum child" It was carried out, under the general direction of Prof Paton and Prof Leonard Findlay, by a number of doctors, statisticians, and health visitors, and the data were collected in the poorer quarters of Edinburgh, Glasgow, and Dundee by means of house-to-house visits and with the help of child welfare centres In each of the towns over 93 per cent of the families investigated lived in one- or two-roomed houses, but care was taken that those selected should be as far as possible a random sample of the slum population For purposes of comparison investigations were also made into the condition of the children of miners and agricultural labourers in various parts of Scotland The whole formed part of a scheme for the study of child life which was initiated by the Medical Research Council, but unfortunately no similar work was carried out in England at the same time The report is valuable not only for its lucid description of this work done in Scotland since 1919, but also because it summarises carefully the conclusions of previous investigators Unfounded assumptions are absent, and this may explain why the evidence gives little support to numerous prevalent ideas

Many observers had previously shown that in great cities the children of the poor are lighter and smaller than those of the wealthy, and that they also compare unfavourably with those of their own social class who are reared in the country About 80 per cent of our national population are now town dwellers Emigration from the country has almost come to a standstill, the towns are breeding more and more their own populations, and there is some indication, says the report, that the small size of town children is in part at least an inborn characteristic A stunted population might conceivably be a result of the survival of those best fitted for town life Unfortunately no figures are available to show the relative weights and heights of town and country children at birth, either in Scotland or elsewhere, but the present inquiry suggests that there is some delay in the rate at which the town child grows between birth and the age of 18 months During this time there seems to be a lag in development, though afterwards growth goes on as rapidly in the town as in the country child; but the Scottish Committee has been unable to correlate the slowing of growth with any particular environmental factor chiefly operative before the middle of the second year of life The suggestion that town infants show this retardation because they do not get enough milk does not explain the facts, for the amount of milk consumed by the families of rural miners—who show no such retardation—is even smaller "Perhaps the most prevalent belief," say the Committee, "is that the small size of the town child is due to a defective supply of suitable food, but the satisfactory rate of growth after 18 months does not support this view" In a certain number of cases in which it was possible to correlate the energy value of the food with the weight of the children, it was found that if the diet fell much below the equivalent of 2600 calories per man per day the nutrition of the children did in fact begin to suffer On the other hand, in Glasgow a family diet yielding only 2500 to 2700 calories per man per day is the average in the slum districts, and on this allowance, it is noted, the children grow just as fast as the country children who get more than 3000 calories It is also rather surprising to find that after the ninth month infants which have been fed at the breast show no superiority over those which have been weaned early, but before this time the breast-fed infants are stronger, and there is the possibility of a selective mortality to be borne in mind Careful investigation supported the finding of Prof Karl Pearson that there is little or no connexion between the health of the mother during pregnancy and the nutrition of the child during the first year of its life The physique of the child is affected to a small extent by variations in the general health of the mother, but that is because sickly mothers cannot care for their children properly And here we reach one of the most positive conclusions of the report Maternal efficiency was found to have a more definite effect on the nutrition of the children than any other single factor studied The chief way in which overcrowded homes and small air space hinder the development of children is by influencing the moral and the activities of their mothers On the other hand, it may be feebleness of character that keeps the parents in a bad environment Amongst agricultural labourers and rural miners, whose houses are not so overcrowded, the proportion of inefficient mothers was very small, and it appeared that the few women whose work was unsatisfactory were those whose husbands were badly paid and who had overcrowded homes In Scotland the families of the rural coal-miner are brought up under environmental conditions far better than those of the slums They spend more time in the open air, they are better fed, and nearly all of them are reasonably well looked after in their homes

Poverty brings to bear on the child many forces not easily resolved into their components Of those so far considered—overcrowding, underfeeding, and maternal inefficiency—only the last was shown by the investigators to be definitely correlated with the children's physical condition They expected to find that nutrition would vary as the family income, but no such direct relation was found The contention that a mere increase of wages would, per se, lead to better growth of the children is therefore not supported, and this is one of several conclusions of political as well as medical interest Prof Paton and Prof Findlay set out to gain definite knowledge which would indicate the proper approach to social problems as they affect children Are the large sums spent on child welfare and other schemes directed into the best possible channels? They report

> "The provision of improved housing accommodation by permitting a larger proportion of mothers to care more efficiently for their children and homes might prove to be a beneficial measure What is not demonstrated is that simple increase of income would be followed by improvement in the condition of the children Bad parents, irrespective of their incomes, tend to select bad houses as the money is often spent on other things The saying that 'what is the

---

[1] Poverty, Nutrition, and Growth Studies of Child Life in Cities and Rural Districts of Scotland Medical Research Council H M Stationery Office 1926 Pp 333 10s

ealthy parenchyma to re-expand Selective collapse s not always possible certainly not if a positive ressure is required to effect collapse When starting he second pneumothorax and so throwing out of ction still further lung parenchyma, the greatest rudence is necessary and the process must be xtremely gradual The optimum pressure varies with each individual constant X ray screen xaminations are essential It is obvious that the method of treatment requires more work and care than is necessary for complete collapse This should not be a bar to a more extended trial in this country, especially as it has been shown that the method does not involve undue risk A word of warning should be given Good results although they may occasionally be seen, cannot be reasonably expected when the disease is extensive in one or both lungs. or where adhesions would make satisfactory collapse under positive pressures impossible. In such cases efficient differential partial collapse cannot be obtained

SIXTH BRITISH CONGRESS OF OBSTETRICS AND GYNÆCOLOGY, 1927

The Sixth British Congress of Obstetrics and Gynæcology will be held in Manchester on April 27th, 28th, and 29th, 1927. The principal subject for discussion will be "The Treatment of Inflammatory Conditions of the Uterine Adnexa" and this will occupy the first day of the meeting The remaining days will be devoted to the reading of short papers on obstetrical and gynæcological subjects and demonstrations of surgical operations A museum of pathological specimens of special interest is also being arranged Those intending to take part in the discussion, or to read short papers, are invited to send in their names together with the title of any proposed contribution not later than March 1st, 1927. The secretaries of the Congress are Dr. Daniel Dougal M.C, 11, St John-street, and Dr John Bride, 2, St John-street, Manchester, to whom all communications should be addressed

ALCOHOLIC NERVE BLOCK FOR PAIN IN MALIGNANT DISEASE.

Except in trigeminal neuralgia, the blocking of nerves by alcohol has hitherto found little application More transient blocking by novocaine is useful in many surgical procedures, and its scope has recently been extended by the introduction of paravertebral anæsthesia as a supplementary measure in certain abdominal operations A wider field for the more permanent method is opened up by its adoption for the relief of pain in suitable cases of incurable malignant disease Three examples of its use in this way at the Montefiore Hospital, New York, are described by Swetlow and Weingarten[1] The first was a case of neoplasm of the lung with pain and extreme hyperæsthesia in the left axilla, and later, over the lower part of the left scapula , any movement whatever aggravated the patient's distress and he found it impossible to lie on his left side Physical examination revealed two areas of marked hyperalgesia, one involving the skin segment supplied by the second to the fifth dorsal spinal nerves, the other those supplied by the seventh to the eleventh Three cubic centimetres of a 60 per cent solution of alcohol were injected paravertebrally into the intercostal nerves supplying the hyperalgesic areas and the patient obtained great relief, which continued till his death 33 days later The second case was one of carcinoma of the breast in which involvement of the pleura had given rise to severe stabbing and burning pain An area of hyperalgesia extended from the sixth to the twelfth dorsal segments The corresponding intercostal nerves were injected paravertebrally with 80 per cent alcohol and complete relief was obtained when the patient was seen 58 days later there had been no return of pain The third case was one of carcinoma of the tongue and the nerve injected was the right inferior maxillary Swetlow and Weingarten point out the disadvantages of the constant use of morphia in cases of this kind ; tolerance is quickly acquired and because large doses are necessary to relieve pain the patient often has to be kept in a stupefied state No such objections attend nerve blockage

CORONERS' JURISDICTION TO INVESTIGATE FIRES

Though the Home Office Committee on Coroners reported in 1909 in favour of extending throughout the country the jurisdiction to investigate fires which is at present confined to the City of London, the Government's Coroners (Amendment) Bill now before Parliament does not propose to give effect to this recommendation As a matter of history the coroner's jurisdiction was formerly not restricted to inquiry into cases of death and treasure trove The statute De Officio Coronatoris (4 Edw I , stat 2) contained a list "of what things a coroner shall inquire" The list mentions deaths, woundings. house-breakings treasure trove, rape. wreck and deodands Early legal writers such as the author of the "Mirror of Justices"—an authority said by Maitland to be so full of fables and falsehoods as to be worthless on the subject of criminal law—mentioned also that coroners should inquire into unnatural offences and monstrous births, adding the information that formerly coroners used also to inquire of burnings In later centuries the great commentators of our common law such as Coke Hale, and Comyns, state the coroner's functions in much narrower terms as limited to cases of homicide upon view of the body of the deceased Curious readers will find the subject discussed at length in R v Herford (1860, 29 L J Q.B. 249) A fire occurred in the shop of one Levy Kreigsfeld, a dealer in indiarubber and mackintosh goods in Manchester. The chief constable had his suspicions and suggested to Mr William Herford, the Manchester city coroner that an inquest should be held : but the Court of Queen's Bench intervened and held that the coroner had no fire jurisdiction Chief Justice Cockburn observed that from 1276 (the date of the statute De Officio Coronatoris) down to some 20 years before R v Herford was decided, there seemed to have been a uniform abstinence from the exercise of such a jurisdiction This circumstance, coupled with the fact that the legislature had made no provision for coroners' fees in arson cases led the court to infer that no such jurisdiction existed Thus the matter was settled. and the practice of coroners inquiring into fires was abruptly terminated after showing signs of becoming common As one of the Chief Justice's colleagues pointed out, instances of fire inquiry were found in the City of London In this as in other respects the City has been allowed an exceptional position, and in 1888 the City of London Fire Inquests Act (50 & 51 Vict, c xxxviii.) defined and regulated the fire jurisdiction of the City coroner. The preamble to the Act does not claim any immemorial usage. but merely recites that the origin of many fires taking place within the City of London is undiscovered and that it is desirable that better provision should be made respecting the same Dr F. J Waldo reports that of 186 fire outbreaks which he has personally investigated in the City. 33 were of electrical origin He advocates a Board of Trade inquiry into cases of this sort This suggestion may be the answer to the proposal to extend coroners' jurisdiction to fire investigations throughout the whole country. So long as inquests are restricted to discovering the cause of death the medical profession is immediately interested, and the public interest requires that coroners should possess the qualification of medical knowledge. It is otherwise if the office of coroner is to be universally enlarged to deal with subjects which concern the architect the engineer, and the electrician. Statutory provision has been made for

---

[1] Medical Journal and Record, June 2nd, 1926, p 728

Annotations.

"Ne quid nimis"

SYMPATHETIC OPHTHALMIA

THE discussion on sympathetic ophthalmia at the recent Oxford Ophthalmological Congress, briefly reported in our columns last week, should prove useful. The opening address was given by Mr. Malcolm Hepburn, who began by referring to the report of a Committee of the Ophthalmological Society in 1886, the gist of which was that when "keratitis punctata" develops in cases of traumatic cyclitis, the only certain measure to prevent complete blindness is excision of the wounded eye. The general trend of Mr. Hepburn's argument was in favour of more conservative treatment. Not every case of cyclitis following injury, he said, even when keratic precipitates are observed, is liable to cause sympathetic disease. How, then, are we to know which eyes can safely be left? Certain facts are undisputed. A penetrating injury which causes cyclitis, whether due to accident or operation, is occasionally followed after a few weeks by a cyclitis of the fellow eye which tends to progress to blindness and in the majority of cases is incurable. This catastrophe is at the present time exceedingly rare, probably owing to the improved standard of asepsis generally adopted in the treatment of wounds; it was almost unknown during the war. Nevertheless, it does occasionally occur, and until recently there has been no certain method of diagnosing which wounded eyes are liable to cause sympathetic disease and which are safe. The consensus of opinion among ophthalmic surgeons has been that those wounded eyes in which keratic precipitates are observed are peculiarly dangerous, and it has generally been considered very risky for a patient with a wounded eye in which the symptoms of an active cyclitis have persisted for as long as three weeks to retain it, even if it still has useful vision. On the other hand, in the case where symptoms of cyclitis have already developed in the fellow eye, since the vision of the exciting eye may ultimately prove to be the better of the two, it is generally thought better to retain it. Obviously, the need is for some means of ascertaining which eyes are actually capable of conveying the infection of sympathetic cyclitis to their fellow. If nothing is done until there are actual signs that the second eye is infected, it may be—and according to some certainly will be—too late. On the other hand, there is now, said Mr. Hepburn, a general consensus of opinion against the possibility of sympathetic inflammation developing many years after an accident, so that we are justified in leaving this part of the subject behind us. If the condition of a wounded eye is obviously hopeless, or if there is no perception of light, it should, of course, be excised. For other cases there were formerly no satisfactory means of certain diagnosis. Recently there has been an improvement in this respect in two directions. It is well known that in certain protozoal diseases—notably syphilis and malaria—there is a definite change in the composition of the blood, the chief feature of which is a marked increase in the number of large mononuclear cells. Some years ago Mr. S. H. Browning, working at Moorfields Hospital, began testing the blood in all cases of eye injury in which the danger of sympathetic disease was considered possible. It was found that in all cases in which the disease was really of a sympathetic nature an exactly similar change in the blood count was observed—i.e., a very marked increase in the number of large mononuclear cells. Acting on this knowledge, it is now customary to treat all cases of eye injury in which this particular condition is found very energetically with full doses of salvarsan or one of the similar arsenical injections. The other recent advance in diagnosis has been made possible by the high magnification under which details can be seen by the aid of the slit-lamp and microscopy of the living eye. Mr. Harrison Butler said that he relied chiefly on this method in difficult cases in deciding whether or not to excise a wounded eye. When sympathetic disease is present, the slit-lamp shows the presence of albuminous matter in the aqueous. It reveals the presence and nature of keratic precipitates deposited on Descemet's membrane and the presence of cells in the fluid of the retro-lental space. He believes that by these signs it is possible to make a definite diagnosis. The existing divergence of opinion about treatment was brought out in the Oxford discussion. No one disputes that excision is not, in many cases, the only possible treatment or that in many others it is the only wise one. The point at issue is whether, once the diagnosis of sympathetic disease has been established, it is ever possible by any means other than excision to prevent the spread of the infection to the second eye. Some, represented at the Congress by Mr. Harrison Butler, maintain that it is not. Others, represented by Mr. Hepburn and Mr. Browning, hold that sometimes it may be. As to the preliminary necessity of accurate diagnosis, there is no divergence of opinion, and Mr. Browning's method of the blood count should always be undertaken in doubtful cases. Where the test proves positive, the ophthalmic surgeon is faced with the responsibility of advising either excision or treatment with arsenical injections. In Mr. Browning's experience many cases have been treated successfully with arsenic even after the appearance of the beginning of cyclitis in the sympathising eye. At any rate, it seems to be established that the success which has already attended this treatment is sufficiently remarkable to necessitate a revision of old ideas.

BILATERAL SELECTIVE ARTIFICIAL PNEUMOTHORAX

THE treatment of pulmonary tuberculosis by "selective collapse" under negative pressure of both lungs was first proposed by Parry Morgan[1] in 1913. He pointed out that the lung was kept at rest only when the pressure was maintained positive, that as soon as the pressure became negative the healthy parenchyma recommenced to expand and function, and that the collapse then became selective (differential). Since then, the trend of opinion has been against high pressures, although complete collapse has been sought and no doubt obtained at refills. No serious attempt appears to have been made in this country to test the value of Parry Morgan's method of treatment. On the other hand, continental and American workers have independently proposed the method, introducing the terms elective and low pressure pneumothorax, and selective collapse. Their work has been followed up so that outside this country there is now a considerable literature on the subject.

In a contribution to the *Presse Medical* of April 24th, 1926, Tobé and Terrasse consider that the possibilities of bilateral pneumothorax should be more realised as it affords a chance of combating with success a complication considered up to the present as beyond the resources of our art. Having discussed the various ways in which infection in the opposite lung develops, they point out that the "alternative" method of doing pneumothorax—viz., letting the lung originally collapsed expand and then collapsing the more recently infected lung—is often not satisfactory, the reason being that the lung originally collapsed is almost always allowed to re-expand too soon. Bilateral pneumothorax has been made possible by the realisation that a small pneumothorax is selective in action, the affected and fibrosed part of the lung collapsing before the healthy areas. Selective action can be obtained on both sides; on the recently affected side by the introduction of small amounts of gas, and on the originally collapsed side by lengthening the intervals between the refills, which allows the

---

[1] THE LANCET, 1913, ii., 18; Quarterly Journal of Medicine, 1917, vol. ii., No. 41.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

---

CLXXXIII

ECTOPIC AND UNDESCENDED TESTICLE

THE later stages in the normal descent of the testicle depend upon the development of the gubernaculum which appears about the eighth week of intra-uterine life The gubernaculum when it first appears contains no muscle-fibres; it is a condensation of mesenchyme and consists of densely packed actively growing cells with large oval nuclei which may be regarded as pre-muscle tissue The tissue forming the gubernaculum grows rapidly through the inguinal region of the abdominal wall and soon divides into six separate bundles passing to the scrotum, root of penis, pubis, perineum, inguinal ligament, and saphenous opening These bundles are unequal in size, the largest going to the scrotum It later becomes muscular by the appearance in it of plain muscle-fibres, and by its shortening causes the testicle preceded by the processus vaginalis to descend from the posterior abdominal wall through the inguinal canal into the scrotum

Forms of Ectopia

In cases of undescended testicle the gubernaculum has not acted efficiently and the testicle remains in the inguinal canal, at the external abdominal ring, or in the upper part of the scrotum In cases of ectopia, the gubernaculum, for some reason unknown, is believed to become separated from the body of the testicle The testicle, now without a guide, is left to pick out its own path, and naturally chooses the path of least resistance As it travels inwards from the external abdominal ring, it finds itself in an extensive fascial space between the deep lamina of the superficial fascia of the abdominal wall and the aponeurosis of the external oblique Having entered this space, the only control to which the testicle is subjected is in the extent of its migration, and this depends solely upon the length of the spermatic cord A short cord may hold up the testicle immediately the latter enters the space, and the testicle comes finally to rest just internal to, and as a rule slightly above, the external abdominal ring Given a long cord which will not hamper onward progress the testicle may have many possible destinations Its general trend, however, will be downwards

Finally it will occupy either of two positions—the dorsum of the penis or the perineum In *penile ectopia*, the testicle passes inwards towards the symphysis and comes into relation with the penile root Passing downwards from this situation, it finally comes to rest beneath the subcutaneous tissues on the dorsum of the penis

In *perineal ectopia*, the testicle passes downwards over the pubic crest and passes into the perineal division of the fascial space Here its further progress becomes barred by the attachments of Colles's fascia and the transversus perinei superficialis It finally comes to rest about one inch in front of the anal margin, to one or other side of the mid-line

The other forms of ectopia are extremely rare Perhaps the most common of them is the *crural* type, in which the testicle is found lying in Scarpa's triangle, in the neighbourhood of the saphenous opening The condition is associated with an abnormally long mesorchium As the testicle approaches the internal abdominal ring, the long mesorchium fails to exercise its customary control, and instead of the testicle being brought close up to the internal ring it sags downwards to the crural ring

Operative Measures

Expectant treatment should only be adopted in young children, as it is only in very few cases after the age of 4 years that the testicle will descend on its own account Operative treatment is always indicated since complications frequently accompany, or arise in association with, imperfect migration of the testicle The commonest of these are hernia hydrocele, inflammation of the testicle, torsion of the spermatic cord, and malignant disease

This may be considered under three headings. (1) Orchidopexy, or fixation of the testicle in the scrotum (2) Orchido-cœlioplasty, or replacement in the abdominal cavity. (3) Orchidectomy or removal

The first is obviously the most logical procedure for it aims at replacing the testicle in its normal position Unfortunately, it frequently fails because in many cases the testicle cannot be brought down into the scrotum without division of the spermatic artery Should this division be made the testicle is dependent upon the artery of the vas alone for its blood-supply—a blood-supply which is quite inefficient for the proper growth and development of the testicle In any operation the integrity of the essential structures of the cord must be maintained

Not only should the vas deferens and its blood-vessels be mobilised most carefully along the course of the entire inguinal canal but the intrapelvic portion of the vas deferens and its companion vessels should also be freed The firm connective-tissue bands, which often fix the spermatic cord to the pelvic tissue, should be divided with scissors Although owing to their relative shortness the blood-vessels may interfere with the lowering of the testis to a greater extent than does the vas, they must never be divided if orchidopexy is to be successful In ectopia testis the same principles apply, and in most cases of ectopia it is possible to bring the testicle down into the scrotum and obtain permanent anchorage

Orchidopexy

The following technique is recommended —

An oblique incision is made over the inguinal canal and the aponeurosis of the external oblique muscle exposed, this in turn is split from the external abdominal ring to well beyond the position of the internal abdominal ring That part of the gubernaculum which is continuous with the lower border of the processus vaginalis is freed from its attachment to the scrotum and a Spencer-Wells forceps is applied to it in order to facilitate traction on the cord without causing any injury to the testicle A pouch is prepared for the testicle by pushing the forefinger into the scrotum The fibres of the cremaster muscle are divided and the sac opened high up near the internal abdominal ring, the testicle is exposed seemingly within the congenital peritoneal sac Great care should be exercised in separating the sac from the spermatic cord, as the vessels are spread out on its posterior surface as a broad band, and any traumatism to the spermatic vessels in childhood is almost invariably followed by atrophy The peritoneal sac is dissected up to the internal abdominal ring and transfixed A tunica vaginalis is formed from the fundus of the sac by a purse-string suture Care should be taken not to handle the denuded testicle otherwise post-operative swelling may occur. A finger is now passed behind the upper part of the inguinal canal and the internal ring dilated The vas can be seen leaving the spermatic vessels at the internal ring and thence passes downwards and inwards As a rule there is little difficulty in obtaining sufficient length to the vas, but to ensure its proper relaxation the fascia of the transversalis abdominis muscle can be split downwards from the internal abdominal ring to the deep epigastric artery

Division of the deep epigastric vessels or the transposition of the testicle and spermatic cord behind them, as advocated by some surgeons, yields an insignificant increase in the length of the cord, the only structure to benefit by this procedure is the vas with which there is rarely any difficulty The peritoneum is lifted up from the posterior abdominal wall by a small retractor and any fibrous bands or adhesions connecting the spermatic vessels to the posterior abdominal wall are divided with scissors By this means the spermatic cord is sufficiently lengthened to allow the testicle to lie without any tension in the bottom of the scrotum A needle threaded with silk is passed through the lower part of the gubernaculum which is attached to the testicle and through the scrotum, both ends of this suture are fixed to a Cheyne's testicle frame when the inguinal wound has been closed The entrance to the scrotum below the pubic spine is closed over the cord with a purse-string suture The conjoined tendon is then sutured to Poupart's ligament above the vas and the other layers of the abdominal wall are closed as in a radical cure for hernia the departmental investigation of accidents in factories and mines, at sea, or on railways The Air Ministry can inquire into the cause of aerial disasters, the Home Office into that of explosions and the Ministry of Transport into traffic accidents within the London traffic area Similar departmental power to investigate the cause of serious fires might well be provided

SYNCOPE IN PAROXYSMAL TACHYCARDIA

IN the December number of the *Bulletins et Memoires de la Societe Medicale des Hôpitaux de Bucarest* Dr. Iliescu records a case of paroxysmal tachycardia of ventricular origin in which Stokes-Adams attacks accompanied the longer paroxysms The patient was a woman, aged 60, who had been subject to syncopal attacks for the past 12 months At the beginning of her illness the paroxysms were associated only with palpitation, but later they were accompanied by dizziness, and finally by loss of consciousness and convulsions Between the attacks the electrocardiogram showed complete heart-block, the ventricular rate being in the neighbourhood of 32 per minute, while during the attacks it rose to over 200 At the beginning of an attack the ventricular rate rose slowly from 30 to 50 per minute, this was followed by a short period in which isolated ventricular extrasystoles appeared in the record and then paroxysmal ventricular tachycardia supervened When the attack lasted only a few seconds the radial pulse remained perceptible, but during the more prolonged attacks the pulse entirely disappeared, no heart sounds were audible, and the electrocardiogram exhibited a degree of regularity which led Dr Iliescu to describe the condition as "ventricular flutter" The fact that the attacks when untreated tended to occur in groups of ten or more made it possible to study the response of the heart to various drugs On two occasions during a period of slow heart action a single dose of quinidine (0 4 g) induced an attack which was preceded by a short period of bigeminal heart action Pilocarpine and adrenalin were given during the attacks on more than one occasion without effect Atropine stopped the attacks and its daily administration greatly reduced their frequency and rendered them much less severe It is interesting to note that the effect of both quinidine and atropine in this patient was the opposite of that obtained in a case of ventricular tachycardia reported by R W Scott, in which the attacks were induced by atropine and controlled by quinidine The association of syncopal attacks with tachycardia is a rare condition, but cases have been reported by C Esmein and E Donzelot, and by E Savini in France, by A D Hirschfelder and by A R Barnes in America, as well as by G A Allan in this country Allan's case, which was reported in a recent number of the *Glasgow Medical Journal*, occurred in a man, aged 53, who had been subject to syncopal attacks for 12 years but in whom there was no evidence of any organic cardiac lesion The attacks were of short duration, the longest while under observation lasting only 23 seconds, but at times they occurred with great frequency During the attacks the heart-rate was from 230 to 270 per minute In Allan's case, as in one reported by Strong and Levine, the spacing of the ventricular complexes was much less regular than that which is found in paroxysms of supraventricular origin, and as in Scott's case quinidine produced a beneficial effect on the condition

Dr Wu Lien Teh (G L Tuck), Director and Chief Medical Officer of the Manchurian Plague Prevention Service and physician extraordinary to several successive presidents of China, is the first non-Japanese to receive from the Imperial University of Tokio, Japan its most distinguished diploma, the *igaku-hakushi* This has been awarded him for a thesis on Pneumonic Plague Dr Tuck, as he was familiarly known in England, graduated M A , M B Camb in 1902 and M D. in 1905

Sir John Gilmour has been sworn as Secretary of State for Scotland—the office has not hitherto ranked as a Secretaryship of State—and Major Walter Elliot, M P , has been appointed Parliamentary Under Secretary of State

INDEX TO "THE LANCET," VOL I, 1926

THE Index and Title-page to Vol I, 1926, which was completed with the issue of June 26th, will shortly be published A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 1, Bedford-street, Strand, W C 2 Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now.

The Services.

ROYAL NAVAL MEDICAL SERVICE

Surg Comdr A C Rusack is placed on the Retd List at own request

Surg Lt-Comdr R J Inman to be Surg Comdr

The following appointments are notified —Surg Lts (D) L M Hughes to the *Emperor of India*, L E Brown to the *Vivid*, for R N Barracks, Devonport, on relief A T Brevetor to the *Victory*, for R N Infirmary, Portsmouth temp

ROYAL ARMY MEDICAL CORPS

Temporary appointments at the War Office Col H B Fawcus, late R A M C , from an Asst Dir-Gen , to be Dep. Dir-Gen

Lt-Col M H Babington to be Col , vice Col N H Ross to ret pay

Majs to be Lt-Cols G A Kempthorne, vice Lt Col. E P Sewell (promoted), and H C Hildreth, vice Lt Col. M H Babington (promoted)

ARMY RESERVE OF OFFICERS

Capt J A Andrews resigns his comm and retains the rank of Capt

TERRITORIAL ARMY

D R McGregor to be Lt

Supernumerary for service with O T C 2nd Lt E G Oastler from General List, T A , to be Lt , supernumerary for service with Medical Unit, Glasgow Univ Contgt, O T C

TERRITORIAL DECORATION

The King has conferred the Territorial Decoration upon Lt-Col Joseph Wilfred Craven and Maj Charles Douglas.

ROYAL AIR FORCE

L Freeman is granted a short service commission as a Flying Officer for 3 years on the active list

The undermentioned officers of the Army Dental Corps are granted temporary commissions in the ranks stated on attachment to the R A F J G Worsley (Major), Squadron Leader, T K Place (Capt), H J Proctor (Capt), and H O Sumerling (Capt), Flight Lts

The undermentioned officers of the Army Dental Corps relinquish their temporary R A F commissions on return to Army duty Squadron Leader D Blair (Major), Flight Lts R M King (Capt), D H W Williamson (Capt), and A Williams (Capt)

Flight Lt W G Weston relinquishes his temporary commission on ceasing to be employed

ROYAL ARMY MEDICAL CORPS OBLIGATIONS OF OFFICERS

An officer of the R A M C who undergoes in future the Senior Course of Instruction for Captains prior to promotion to major, or a Specialist Course, will be required to sign an honourable undertaking to continue to serve in the Army after the termination of the course for a minimum period of three years This will not preclude the Army Council from releasing him from his obligation should the circumstances justify release, but an officer who receives permission to resign his commission before the expiration of the period for which he undertakes to serve, will be required to join the Regular Army Reserve of Officers

Sir Edward Marshall-Hall was urging the arguments six years ago in R. v. Holt (15 Cr. A.R., p. 10); he contended then that it was the duty of the lawyer to keep pace with the scientist. Indeed, the legal view was nearer to the medical view then than now, for in Holt's case, as Lord Reading, C.J., has pointed out, the trial judge did at least leave the question of uncontrollable impulse to the jury, though the jury's verdict negatived the defence founded thereon. The later cases seem to show a stiffening of the legal view. In 1921, for example, in R. v. Quarmby (15 Cr. A.R., p. 163) counsel for the defence argued that the subconscious mind of a person afflicted with delusions was a factor to be considered in connexion with acts committed by one whose unrestrained passions resulted in crime. "The King's Bench determines the existing law," said Darling, J., on that occasion, "not what the law might be if amended by the legislature." "Foreign and colonial codes," added Sankey, J., "admit the defence of irresistible impulse; English law does not." In the following year Sir H. Curtis Bennett plied Mr. Justice McCardie with arguments on "impulsive insanity" in the case of Ronald True and addressed the Court of Criminal Appeal to the same effect, but without securing an acquittal. The latter court showed itself even more hostile to the theory of uncontrollable impulse in R. v. Kopsch last year (19 Cr. A.R., p. 50). Kopsch strangled a Mrs. Thornton in Ken Wood with his necktie; they had been lovers, and his defence was that she asked him to strangle her and that he acted under an impulse which he could not control. Lord Hewart, C.J., was severe upon the defence. "The court," he said, "has to-day had a repetition of an argument which from time to time is heard here, with an ingredient added that is not common—namely that, according to the experience of counsel for the defence, His Majesty's judges are continually summing up to juries on the question of insanity in the way for which he has contended. That statement is surprising. No such summing up is known to this court. The law with regard to criminal insanity is that every man is presumed to be sane and to possess a sufficient degree of reason to be responsible for his crimes until the contrary is proved to the satisfaction of the jury. To establish a defence on the ground of insanity, it must be clearly proved that, at the time of the committing of the act, the party accused was labouring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing, or if he did know it, that he did not know he was doing what was wrong." Having thus laid down the existing law, the Lord Chief Justice criticised the arguments for the defence as having drifted round to the contention that the law ought to become what he stigmatised as the "fantastic theory of uncontrollable impulse which, if it were to become part of our criminal law, would be merely subversive." It is not yet part of the criminal law, added Lord Hewart, and he hoped the day was far distant when it would be made so.

With profound respect to the learned Lord Chief Justice, one may ask whether he has not overstated the position. Can a doctrine be unknown when Mr. Justice Greer expounded it to the jury in Holt's case? Can it be fantastic and subversive when so staid and cautious a body as the Atkin Committee gave it support? Lord Justice Atkin's *colleagues* included official lawyers like the present Master of the Rolls (then Attorney-General) and Sir Leslie Scott (then Solicitor-General), authorities deeply versed in criminal prosecutions like Sir Herbert Stephen, Sir Richard Muir, and Sir Archibald Bodkin, and Home Office representatives like Sir Edward Troup and Sir Ernley Blackwell. These gentlemen stated in their report that they were satisfied that cases of mental disorder did exist where the impulse to do a criminal act recurs with increasing force until it is, in fact, uncontrollable. They found that cases were not uncommon in which mothers normally devoted to their children cut their children's throats or otherwise took their lives. In such cases, they said, the accused knows the nature of his act and knows that it is wrong, and the McNaghten formula is not logically sufficient. "We think," said the Committee, "that it would be right that such cases should be brought expressly within the law by decision or statute. We think that it should be made clear that the law does recognise irresponsibility on the ground of insanity where the act was committed under an impulse which the prisoner was, by mental disease, in substance deprived of any power to resist." The Committee gave some grounds for thinking that the existing law was already as thus stated. "No doubt some judges have charged juries to that effect; on the other hand, there seem to be definite decisions of the Court of Criminal Appeal the other way. It seems to us that, if this legal doubt should continue, it would be advisable to make the law clear by an express statutory provision. We have no doubt that, if this matter were settled, most of the criticisms from the medical point of view would disappear."

The Atkin Committee was remarkably conservative and cautious. It made this modest contribution to settle the controversy between law and medicine, but the recommendation put forward with such high authority has been ignored. The suggested rule has been confirmed neither by statute nor by decision. The Court of Criminal Appeal faces the arguments of the Committee with a blank negative. Have the Lord Chancellor and the Home Office thrown the Atkin Committee over?

The Mystery of the Fishmongers.

Two fish salesmen were fined £50 each with £5 5*s.* costs at the Mansion House some days ago for selling putrid fish at Billingsgate. One had sold two boxes containing 24 hake, the other had sold 57 lobsters unfit for human consumption. The defendants attributed the sale to the slackness of their servants, who let the fish pass without sufficient examination. More recently three other fish salesmen of Billingsgate Market were each fined £25 with £3 3*s.* costs for selling a box containing 27 codfish which were unfit for human food, the charge being made under Section 47 (2) of the Public Health (London) Act of 1891. On both occasions the prosecutions were undertaken by the Fishmongers' Company under a charter of 1604. At that date King James I. reincorporated the "wardens and commonalty of the Mystery of Fishmongers in the City of London" and gave them the usual powers to make laws for the good government of the mystery. The company received rights of survey, search, government, and correction of all persons whatsoever selling, having, or possessing any fish. Power was given to enter premises and to view, search, and survey whether the fish be wholesome for man's body and fit to be sold or no, and, if found unwholesome, corrupt, or unfit to be sold, to seize and dispose of it. It was under these powers that the Fishmongers' Company acted in the recent prosecution. The status and capacities of this ancient corporation were expressly recognised in the Salmon and Freshwater Fisheries Act of 1924 (Sections 34 (2), (4), and 78 (*d*)). It is in keeping with immemorial traditions of municipal life in this country that each trade should be organised to supervise its own members. The Mystery of the Fishmongers has always attached great importance to its duties of supervising fish supplies. Our city companies amply justify their existence by undertaking such work in the interests of the community.

Prison Clothing.

An unusual action was lately heard in the Bedford county court when a man who had been placed in Bedford prison on remand claimed £100 damages against the late governor of the prison for removal of his clothing. The judge awarded £5 5*s.* damages with costs and spoke strongly of the repulsive result of compelling a man of decent upbringing to wear underclothes previously worn by persons who were often verminous and sometimes diseased. It was not apparently suggested that the plaintiff in this case

The patient is kept in bed for a fortnight, and a careful watch is kept upon the ligature to see that it is always tight It is a good plan to increase the tension slightly every second day by untying the knot and refastening it Sometimes the constant traction on the ligature causes it to cut its way out about the tenth day if this does not occur it may be pulled through by traction upon one end

Orchido-cœlioplasty

The operation for the replacement of the testicle in the abdomen is very similar to that of orchidopexy except that instead of bringing the testicle down into the scrotum it is placed in a bed made for it in the extraperitoneal tissue and retained there by catgut sutures The hernial sac is dealt with as in a radical cure for hernia

Orchidectomy.

When the testicle is to be removed the inguinal canal is exposed by an oblique incision similar to that used in orchidopexy The testicle within the processus vaginalis is freed up to the internal abdominal ring The spermatic cord is ligatured at the abdominal ring and the testicle removed Two or three catgut sutures are passed from the deep aspect of Poupart's ligament to the conjoined tendon and tied, thus obliterating the inguinal canal The external oblique is then united by a continuous catgut suture, and the skin closed by a continuous silkworm gut suture

The End-results of Treatment

As regards function, patients with bilateral undescended testicles are found to be sterile On microscopical examination of over 50 undescended testicles removed by different surgeons I have not been able to find any normal genital cells or spermatozoa in any of the specimens examined The operation itself often fails in anchoring the testicle in the scrotum, for in cases examined several years after operation the testicle is often found high up in the scrotum or at the external abdominal ring

It may be said Why should an operation be performed at all? First, complications may arise in connexion with an undescended testicle; these have already been mentioned Secondly, there are definite and important social reasons for operation The position could not be put better than in the words of a recent leading article in The Lancet (1926, i, 353) "The genital organs carry such an emotional charge that, even though they remain concealed in ordinary circumstances, the reactions of the individual to any loss or defect are often greater than when he bears a loss literally upon his face. Moreover, in the case of children, we must bear in mind that mental development in the psycho-sexual sphere is so powerful in determining the whole behaviour of the individual that, apart from endocrine influence, the physical state of the genitalia as they appear to the person concerned must play a part, though its extent may be debatable, in fashioning his reaction modes and character traits"

Conclusion

In conclusion, it may be said that in those cases where there is an imperfectly descended testicle on one side and a well-developed fully descended testicle on the other, the partly descended testicle should be removed, unless it can be brought down into the scrotum without any tension or division of any of the constituents of the spermatic cord In bilateral cases it is advisable to take means to preserve the internal secretion on both sides and not to sacrifice the gland An attempt should be made to bring one testicle into the scrotum, in order that some chance of fertility may be afforded the patient, and to return the other testicle to the abdomen

Cecil P G. Wakeley, F R C S Eng,
Assistant Surgeon, King's College Hospital, and Belgrave Hospital for Children

Special Articles.

MEDICINE AND THE LAW

Mr Harnett's Appeal

The judgment of Mr Justice Horridge dismissing Mr. Harnett's action against Dr Holdrich Fisher (for damages for negligence in certifying him to be a lunatic in 1912) has been upheld by the Court of Appeal The point was a short one Mr Harnett escaped from the asylum at Croydon in 1921, and commenced his action by writ at the end of May, 1922 Two sections of the Statute of Limitations were material Section 3 enacts that actions such as Mr Harnett's must be begun within six years after the cause of action arises, Section 7 enacts that this time-limit shall not apply if the plaintiff is *non compos mentis* It was of the essence of Mr Harnett's action that he was not insane in 1912 when his cause of action arose; a jury found in his favour on this point But if he was sane in 1912, he could not simultaneously be *non compos mentis* so as to evade the Statute of Limitations The Master of the Rolls observed that he felt compelled to say that great hardship might be occasioned to a defendant if a cause of action should survive so long as Mr. Harnett's against Dr. Fisher It was, indeed, to avoid that hardship that the Statute was passed The appeal, however, though dismissed, was dismissed without costs, inasmuch as the appellant had obtained the verdict of the jury on the issue of his sanity and had been awarded £500 damages Mr Harnett, of course, lost the benefit of that verdict and those damages when Mr Justice Horridge dismissed his claim, but they remained an element in the case which won him the sympathy of the Court of Appeal on the question of costs

Irresistible Impulse

The Court of Criminal Appeal on July 12th refused to accept the principle that irresistible impulse may be a good defence in criminal trials The appeal was that of Joseph Edward Flavell, convicted at Worcester Assizes of the murder of his step-brother Flavell was 24 years of age, but was described as having the intelligence of a boy of 14 or 15 His father died at 31 from Bright's disease and epilepsy; no fewer than eight of the appellant's blood relations had either died in, or been confined in, lunatic asylums Flavell had got up in the night, put on his best clothes, gone downstairs, procured a wood-chopper and killed his step-brother as he lay in bed with two blows severe enough to cause instantaneous death He was convicted of murder, and his appeal failed, though the Home Office has since commuted his sentence Sir Edward Marshall-Hall, for the defence, recalled the recommendation made in 1923 by Lord Justice Atkin's Committee[1] to the following effect "It should be recognised that a person charged criminally with an offence is irresponsible for his act when the act is committed under an impulse which the prisoner was by mental disease in substance deprived of any power to resist" The Committee added that it might require legislation to bring this rule into effect, but, as Sir Edward Marshall-Hall observed, Parliament has done nothing, and now the judges have once more refused to intervene The Court of Criminal Appeal gave its usual answer that the judge had summed up fairly at the trial, and the jury had found a verdict supported by evidence, and that the further disposal of the accused man rested with the Home Office In fact, we are back where we were before the case of Ronald True focused public attention upon the discrepancies between legal and medical theories of criminal responsibility, and before the Lord Chancellor set up the Atkin Committee

---

[1] The Lancet, Dec 8th, 1923, p 1262

The Government has given nearly a lakh of rupees as a non-recurring grant to meet the cost of equipment, and has increased its annual grant from Rs 200,000 to Rs 311,000, so that the financial difficulties which have hindered the work of the college during the last four years are now at an end The hospital attached has 200 beds and the educational facilities are adequate

From the Madras Presidency it is reported that the medical schools have in recent years shown a decline both in strength and admissions, in spite of the fact that an additional school—the Lady Willingdon Medical School for Women—has been established The decrease in applications for admission is partly attributed to the abolition of the stipendiary system and the small chances of Government employment now open to candidates passing out of the schools

The general fear of unsatisfactory employment was shown at a conference of the All-India Medical Licentiates' Association held at Lahore last May, when there was evidence of a demand on the part of the licentiates that their present curriculum of four years should be extended to five years in the hope that the extension would assimilate their status to that of university graduates This solution, however, might not have the desired effect Colonel Chambers, Professor of Medicine at the Lahore Medical College, who presided over the conference, said that the extension of the medical school course by one year would make the licentiate's training more costly without necessarily improving his prospects, and that if the demand were granted it might lead to the abolition of the licentiates Already the supply of graduates was greatly in excess of the existing demand, with the result that graduates were prepared to work in place of sub-assistant surgeons in rural dispensaries

Five hundred students at the National Medical College at Calcutta recently went on strike in order to compel the authorities to apply for affiliation to the Medical Board As things stand at present, students who have passed out of the Calcutta National Medical College are liable to prosecution under the Bogus Degrees Medical Act, since the institution is not recognised by Government

Midwives Registration Act

The Madras Legislative Council has passed a draft Bill for the registration of nurses and midwives in the Presidency It is proposed to register all qualified and trained nurses and midwives, and in addition the Government has accepted the scheme for the training of *dhais*, or barber-midwives, and for their registration The *dhais* will be given systematic training at district headquarter, municipal, and taluk headquarter hospitals approved by the surgeon-general, they will receive a stipend of Rs 7 8 a month while being trained, and after not less than six months' training they will be examined by the district medical officers and matrons at the district headquarters Those who are certified will be entitled to practise in rural areas, but they will not be eligible for employment in Government, local fund, or municipal service, and they will be re-examined by district medical officers once every two years in order to ensure that they are still efficient These barber-midwives will be encouraged to call in outside aid or to take the cases to the hospitals whenever necessary, and for every such case they are to be granted a reward of one rupee by the local body concerned

Internal Opium Policy

The Government of India has published a resolution stating that its policy based on the finding of the Royal Commission of 1893, has been and is one of non-interference with the moderate use of raw opium On the other hand, over-indulgence must, as far as possible, be suppressed, and though much has been done to reduce the consumption of opium as a whole, there are still black spots on the map of India which the Government is anxious to remove In regard to the administration of opium to children, the Government accepts the view that education and child welfare propaganda are the only expedients likely to give satisfactory results In conclusion, the resolution states that prohibition of the use of opium for non-medical purposes would be impracticable, but efforts are to be made to check smuggling, and special attention will be devoted to areas where consumption is unduly high

St John Ambulance Association

Presenting the annual report of the St John Ambulance Association on June 24th at Simla, Sir William Birdwood said that railways, police, educational institutions, gaols, mines, and Indian States were taking their share in the movement, amongst the 10,340 persons who had passed the course during the year were 1880 railway employees A notable feature of the year was the advance of the work in gaols For the first time in the history of the Association a large number of teams, consisting of convicts and warders and boys from the reformatory schools, had taken part in the All-India Ambulance Competition

Medical inspectors of schools are being appointed to the important towns in the United Provinces

The total number of patients treated at the Punjab Mental Hospital, Lahore, during 1925 was 1154 and the average daily strength was 864 The death-rate was 14 2 per cent of the daily average population, more than half the deaths being due to dysentery and diarrhœa

The Bengal Government has decided to devote 2 lakhs of rupees (£14,000) to an intensive campaign against kala-azar Several hundred treatment centres will be opened throughout the province under the control of the district boards

Lieut -Colonel K V Kukday, inspector-general of civil hospitals, Central Provinces, opened a new hostel at Nagpur on July 1st

The ninth annual report of the King Edward VII Pasteur Institute and Medical Research Institute of Shillong states that there were only 8 deaths from hydrophobia in 980 cases of dog bite, and 3 deaths in 165 cases of jackal bite

---

BERLIN.

(FROM OUR OWN CORRESPONDENT)

Overcrowding of the Medical Profession

OVERCROWDING of the profession has led the Hartmann-Bund, the great medical union, to take energetic steps According to the law a medical man may settle where he likes, but as a matter of fact, with a few exceptions, he cannot earn a living without being admitted to club practice The indiscriminate admission to club practice, known as the free choice system, and described in my letters on several occasions, has given satisfaction to the club members but not to the profession in general Owing to the great number of club doctors, the share of the club fees which individual medical men receive grows smaller and smaller The few existing restrictions—notably that in certain great towns a medical man before being admitted to club practice must have resided in the town for at least three years—have little effect in diminishing the number of club doctors The general assembly of the Hartmann-Bund, which has lately been held in Eisenach, has now decided that medical men over 70 years of age who voluntarily retire from club practice shall be entitled to an annuity from the Bund of at least 1200 to 3000 marks (£60–£150) In certain circumstances, also, medical men over 60 are to have the same privilege, provided that necessary means are at the disposal of the Bund The funds will be collected from different sources, and the first step will be to raise the subscription by 1 mark a month As the Bund has 39,000 members this should mean an increased income of 770 000 marks (£23,500) a year The local branches will be authorised to raise special contributions, and the admission fee will be increased had been compelled to put on verminous or infected clothing, otherwise the damages would doubtless have been heavier The Prisons Rules for England, like the corresponding code more recently issued for Scotland, naturally direct that every convicted prisoner must be provided with a prison dress and shall be required to wear it But a person remanded to a prison is very far from being a convicted prisoner According to the English rules a prisoner awaiting trial may wear prison dress if he desires it; apparently he cannot be compelled to do so unless his own clothes are insufficient or unfit for use or are necessary to be preserved for the purposes of justice, or except during a period when his own clothes are being disinfected to prevent the introduction or spread of infectious disease The county court judge said he was satisfied that the late governor of the prison, who was being sued, was responsible for what had occurred; he added that his judgment would emphasise his strong opinion that there was persistent infraction of one of the most important rules in favour of a prisoner The incident gives rise to wonder whether the prison visitors pay attention to this point, and whether the Prisons Rules are sufficiently explicit or whether the fault lies in their non-observance

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

PRESENTATION TO DR ANDREW BALFOUR

THE members of the teaching staff of the London School of Hygiene and Tropical Medicine assembled in the library on Friday last, July 23rd, in order to present the Director, Dr Andrew Balfour, with a picture by Mr A O Lamplough as a token of esteem, and in recognition of his great services to the School The presentation was made by Prof R T Hewlett, who said —

Dr Andrew Balfour,—We are gathered here to-day to make you a little presentation as a token of goodwill and esteem in which you are held not only by your colleagues of this School, but by many other outside friends If you will look at the list of those who have contributed to this presentation you will find that it includes a representative of the Rockefeller Foundation, past and present members of the teaching staff of the School, members of the staff of the Tropical Diseases Hospital, representatives of the Seamen's Hospital Society, members of the Bureau of Hygiene and Tropical Diseases, and of your administrative staff (and in this connexion Mr Harris writes to say how sorry he is to be unable to be present to-day and how proud he is to serve under you) Many years ago—more years probably than either you or I care to reckon—I had the honour and pleasure of being present at a dinner to bid you farewell on your approaching departure for Khartoum

I little thought then—a score of years or more ago—that I should in the future be the unworthy mouthpiece of those who desire in a sense to welcome you back again in the important and honourable post of Director of the London School of Hygiene and Tropical Medicine I need hardly say how glad I am to do this and appreciate the call, though I am bound to say I suspect it is a somewhat dubious compliment to myself based on length of service and grey hairs rather than on actual merit!

We have now reached what may, perhaps, be regarded as the third stage in the career of the School of Hygiene The first stage was the noble gift by the Rockefeller trustees of funds for the foundation of the School The second stage was the altogether admirable appointment of yourself as Director of the School, and the third stage was initiated the other day by the laying of the foundation-stone of the permanent home of the School

Some of us of the old London School of Tropical Medicine, so successful in the past under the ægis of the Seamen's Hospital Society, to whom a warm tribute ought to be paid for their wisdom and foresight in undertaking so desirable, though at the same time so great, a venture, some of us of the old Tropical School may feel some regret at its disappearance as a separate entity, for believe me under the inspiration and leadership of Sir Patrick Manson we throve wonderfully and were a very happy family. But all of us, I think agree that the incorporation of the Tropical School in the new School of Hygiene was a right and proper step, and we in particular, members of the old Tropical School, welcome your appointment as Director because we believe that the great Mansonian tradition will be worthily maintained in your hands as regards the tropical side of the School's activities

As regards other activities of the School, in your hands, too we may rest assured that they will be in equally safe keeping The physical side of health training certainly will, for have you not won, if not spurs, at least many hacks and bruises on university and international football fields? You have experience of public health administration, you have travelled widely and have a broad outlook on health problems, you are a research worker and know the importance of a live school combining teaching with research When I look at the list of decorations and degrees you have acquired, of the prizes you have won, of the appointments you have held, of the campaigns in which you have taken part, and of the committees upon which you have served, I begin to ask myself Has Scotland produced only *one* Admirable Crichton?

Moreover, by your silver speech and ready pen you do much for the School Was not the last named (your ready pen) partially trained in the realm of romantic fiction We may be sure you will not be "Cashiered," may we hope that your course may be a smooth one, not determined "By Stroke of Sword" nor recourse "To Arms," and that in your present post you have in some degree entered into 'The Golden Kingdom "

This little gift which we have for you I beg you to accept firstly, as a welcome (somewhat belated perhaps) to the School, secondly, as an appreciation of all you have done for the organisation of the School activities and of the inauguration of its permanent home, and thirdly, as a token of cordial esteem and goodwill from colleagues and other friends. It may also serve to remind you of the time you have spent in tropical climes in the service of humanity and of your country

Finally, it is a pleasant supplement to the presentation to yourself to ask Mrs Balfour, your closest colleague, kindly to accept this rose-bowl as a memento of this occasion.

Dr Andrew Balfour, in reply, expressed his thanks at the welcome given him by the staff of the School in the arduous task of reorganisation of its activities, and expressed his hopes for the future prosperity and success of the School of Hygiene and Tropical Medicine based upon the loyalty of the present staff

The presentation picture was one of the artist's well-known Eastern effects, representing a Sudanese on his camel, and recalling Dr Balfour's distinguished services in the Sudan and his activities as advisor to the Forces in Central Africa during the war

NOTES FROM INDIA

(By our own Correspondents)

The Supply of Quinine

THE Madras Government Cinchona Department has begun new plantations in the Anamalais Hills where the Government possesses fully 20,000 acres suitable for growing cinchona More than 50 acres were planted before the present monsoon, and it is hoped that in a very short time the bark available from these and other sources will make India independent of foreign supplies During the year 1924-25, 280,000 lb of bark were harvested from Government plantations, and the Madras factory produced over 23,000 lb of quinine sulphate, besides 362 lb of quinine bihydrochloride and a smaller amount of bisulphate The output of cinchona febrifuge was 1143 lb and its popularity is evidently increasing An official test made in the Madras hospitals two years ago showed that the febrifuge has great potentialities in the treatment of benign tertian infections, though it still remains to be seen whether it is effective in preventing the relapses which are the real problem in malaria Further work on the periodides of quinine and quinidine indicate that experiments with these salts would be well worth while, and supplies are offered for research purposes

Medical Education

In different parts of India there are now 256 women studying for medical degrees of whom 198 are Indians At the Lady Hardinge Medical College at Delhi the number of students is at present 106, they are drawn from 14 different Provinces and States, and represent many different nationalities and religious beliefs examined by two doctors, and were again examined on landing The picture on the return journey was remarkably different No examination of passengers was made before embarking, no routine examination on board, and none on landing He suggested that passengers on liners bound for Ireland should be examined en route by the doctor on board, and infectious cases reported by him to the port authorities at the port of disembarkation Dr T P O'Reilly (Cavan) pointed out that in Ireland during the decade 1901–1910 the average annual mortality from all forms of tuberculosis was 2 63 per 1000 of the population In 1923 the rate had fallen in the Saorstat to almost half—to 1 41 per 1000 In 1924 the rate rose to 1 45, and in 1925 to 1 48 Dr B O'Beirne (Galway) believed that the isolation of advanced cases was far more important than the treatment of the individual, comparatively, and that too much attention was being paid to the diagnosis of "early" cases, and, comparatively, too little to stopping the spread of infection Dr T Reynolds (Leitrim) gave an outline of a scheme of orthopædics of English origin, and suggested the institution of a central orthopædic hospital near Dublin, staffed by whole-time orthopædic surgeons

Committee on Milk Supply

The first meeting of this Committee was held on July 14th in the offices of the Department of Local Government and Public Health The members are Mr R Wilson, T D (Chairman), Dr T Hennessey, T D Mr P K Hogan T D, Dr E F Stephenson, Dr M J Russell, Mr P F Dolan, M R C V S, Mr J Johnston, Mr P O'Connor, Mr L S Smith, and Mr E P McCarron, Secretary to the Department of Local Government and Public Health It was decided that copies of the regulations and other available literature dealing with the cleanliness and wholesomeness of the milk supply should be furnished to each member of the Committee, that evidence should at the outset be invited from the Dublin Corporation, organisations connected with the Dublin milk supply, Irish Agricultural Organisation Society, Irish Farmers' Union, Creamery Managers' Association, and inspectors of the Local Government Department, and that a summary of transactions at each meeting should be circulated for publication It was arranged to hold the next meeting after the recess on a date to be fixed by the chairman The Committee will be prepared to hear any person who notifies his readiness to give evidence and submits a précis to the Secretary, Committee on Milk Supply Department of Local Government and Public Health, Upper Merrion-street, Dublin

University of Dublin Trinity College

A three weeks' post-graduate course has been arranged for Sept 13th to Oct 2nd The course will be conducted as in former years and will consist of clinical meetings at hospitals in the morning and laboratory classes in the medical school in the afternoon Arrangements have been made for a limited number of members of the class to reside in College rooms A prospectus, giving details of the course and cost, may be obtained on application to the Honorary Secretary, School of Physic, Trinity College, Dublin

---

HOSPITALS AND MOTOR ACCIDENTS —At an inquest last week the house surgeon of Bedford Hospital stated that one bed in three in that institution was occupied by the victim of a motor accident

THE LONDON HOSPITAL —The annual report records that the death rate in 1925 was the lowest on record—4 58 per cent The decline of the rate in recent years is attributed to increased skill in the diagnosis of disease in its early stages and to the admission of a larger proportion of cases for preventive treatment The total number of beds in use was 810 but 101 were still closed The cost of each patient was £11 7*s* 7*d* and the average length of stay 14 days The income for general purposes was £240,000 and the expenditure £260 000

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH

THE following are statistics for 1925 from districts whose health reports are reviewed below .—

Name of district	Estimated mid year population (R G)	Birth rate	Death-rates per 1000 of the population: All causes	Tuberculosis	Cancer	Resp diseases with influenza	Heart disease	Death-rates per 1000 births: Infant mortality	Maternal mort from childbirth.
Leicester C	242,100	17 3	12 9	1 50	1 31	2 4	0 9	88	4 0
Walsall C B	102,300	22 1	13 6	1 21	0 97	3 4	1 1	115	6 2
Halifax C B	97,860	14 5	16 9	1 20	1 71	3 3	1 9	93	5 6
West Bromwich C B	79,490	22 9	11 9	0 90	1 17	3 2	0 7	99	4 4
Llanelly B	39,090	20 3	11 6	1 02	1 07	2 1	1 3	87	1 2
Bilston U D	30,240	26 0	16 4	0 92	1 22	5 0	1 0	117	3 8

C =City C B =County borough B =Borough
U D. =Urban district

Leicester

Dr. Killick Millard reports an epidemic of small-pox of the mild type There were 72 cases and no deaths It is now 21 years since the last death from small-pox occurred in Leicester For 40 years Leicester has been preventing small-pox without resort to compulsory infant vaccination There was practically no increase of infant vaccination caused by the epidemic, the total vaccinations for 1925 were 283 and the births 4197 Enteric fever has almost disappeared There were four cases notified and one death There were 26 known cases of encephalitis lethargica, of which 10 ended fatally The number of deaths from cancer (318) was the highest on record

Substantial progress has been made by the corporation in the building of artisans' dwellings, but the need for houses is very acute The most important building scheme is at Aylestone Park, a site of 206 acres, on which it is proposed to erect 1812 houses—1000 of concrete and the remainder of brick. At the end of 1925, 194 had been erected and a much larger number begun Another great housing scheme is on the Braunstone estate (1064 acres), purchased by the corporation for £115,000 Here building operations will begin during 1926 The corporation has made a contract for 1500 concrete houses, subject to optional breaks after the completion of each 500 Two experimental steel houses have been erected by the housing committee and are quite unobjectionable from the point of view of health In spite of the arguments in favour of them—such as the ease of mass production, quick erection, and help for the depressed engineering trade—the committee, after a careful consideration of cost, durability, and upkeep, did not feel able to recommend the erection of this type of house On one of the estates the rents, excluding rates, vary from 7*s* to 8*s* 9*d* for non-parlour houses, and from 9*s* 6*d* to 13*s* for parlour houses On another estate the rates are 8*s* 6*d* for the non-parlour type and 10*s* for the parlour type

The time-limit for black smoke has been reduced from five minutes in the hour to two minutes in the half hour The limit adopted in Sheffield is two minutes for the hour Dr Millard refers to the help to be expected when the new Smoke Bill becomes law The pollution from domestic smoke, however, will still remain, and he thinks that gas committees should offer coke for domestic use on specially favourable terms The clean milk campaign makes progress and measures are being taken to check the sale of

It has further been decided to approach the Government with a view to their taking steps by which the number of club doctors may be still more reduced Government medical officers should, it is suggested, be forbidden club practice, and those only partly engaged in Government work should be made whole-time officers and therefore obliged to give up club practice These measures, however, are likely to be inadequate, because the number of medical men not yet admitted to club practice—such as assistants in hospitals and medical institutions—and the number of students in the last term is so great that the needs of club practice are covered for at least ten years The Hartmann-Bund, together with the clubs, will, therefore, suggest to the Government that it should put an embargo on club practice for ten years They propose that a law shall be passed that medical students who have not finished their first term by April 1st, 1927 cannot be admitted to club practice (Sons and daughters of medical men are to be exempt from this law) If the Government will not agree to the proposal the Hartmann-Bund, either alone or with the clubs, will publish notices on a large scale warning students against continuing the study of medicine and advising school-boys against taking it up

The German Health Office

Fifty years have elapsed since the Imperial Health Office was established, and its jubilee has just been celebrated with great solemnity When Germany became an Empire the care of public health was entrusted to the individual States which form the confederation The difficulty of dealing with epidemics and other problems soon made it necessary, however, for the Central Government to set up an advisory board In the Act establishing the Health Office in 1876 its object was described as follows To advise the Imperial Chancellor on the control of measures taken by individual States for the care of public health and in combating epidemics, to prepare Government Bills dealing with these questions, to give advice on request to the authorities of the individual States, to edit the German Pharmacopœia, and to follow the development of hygiene in foreign countries As the celebrated savants, Virchow and Pettenkofer, declined appointment as president of the new Office, an army medical officer, Dr Struck, was chosen The only members besides the president were Finkelnburg, professor of hygiene at Berlin University, and Roloff, of the Veterinary College, three clerks completed the small staff But as early as 1878 a laboratory of hygiene under Wolfhugel and a chemical laboratory under Sell were added to the equipment Bacteriology was then beginning to play an important part in medicine, and in 1880 Dr Koch, medical officer of health in a small provincial town, was appointed bacteriologist to the Office, because he was known to be one of the few men who at that time had some knowledge of bacteriology His name was soon to become famous all over the world, for in 1882, in the laboratory of the Office, he discovered the tubercle bacillus Working there, also with Koch's methods, his assistants, Loffler and Schutz, discovered the anthrax bacillus, Eberth and Koch the bacillus of enteric fever, Loffler the diphtheria bacillus, and Koch the cholera bacillus Later, in the same laboratory, Schaudinn discovered the *Spirochæta pallida*

The Office is now divided into several departments a chemical department, which deals with the study of drugs and poisons and with the German Pharmacopœia, a medical department, which deals with medical legislation, with the combat against infectious diseases and epidemics, with industrial hygiene, and with medical statistics, a bacteriological department, and a veterinary department The library of the former Army Medical College—which with its 100,000 volumes, is the greatest medical library of the Continent—now belongs to the Office The staff of the Office includes the president, four heads of departments, and 55 scientific members besides the clerical staff There is, moreover, a German Health Council connected with the Office, consisting of 136 members from every part of Germany, who meet to discuss important questions either in full council or in special committees

An Epidemic of Meat Poisoning

In Kalkberge, near Berlin, an epidemic of meat poisoning lately broke out Eighty people became ill with severe vomiting and profuse diarrhœa after eating scraped raw meat bought from a particular butcher in the locality In households where the meat had been cooked nobody was affected It was found on inquiry that the butcher had bought a joint in the central cattle market in Berlin, and that the meat had been examined and passed as healthy Bacteriological examination of the meat, however, revealed infection by Gaertner's bacillus, which belongs to the paratyphoid group, its presence does not influence the appearance of meat, and so the butcher had not discovered that there was anything wrong Seeing that the meat proved healthy in the cattle market, it is possible that the infection took place during its transport It was carried by a butcher's mate in a linen sack from the market to the shop, and it seems probable that either the sack contained bacilli or the butcher's mate was a carrier of bacilli In other localities where pieces of the same joint were sold no case of illness has appeared. Two of the patients have died, the others have recovered The butcher's shop, which was temporarily closed by the district medical officer of health until it had been thoroughly disinfected, has been opened again, as the butcher obviously could not be made responsible for the epidemic

Medical Cinematography

A cinematographic institute for medical purposes has lately been opened in connexion with the Charite Hospital under the auspices of the medical faculty It will be directed by Prof von Rothe, the well known surgeon The apparatus used is carefully sterilised and the camera is fitted up so as to take photographs from the ceiling In this way the various steps of an operation may be made visible, whereas in the ordinary way the patient is hidden from the spectators by the surgeon and his assistants Other rooms of the institute are to be used for filming experiments on animals, epileptic and other fits, the movement of patients, and various pathological conditions

---

IRELAND.

(FROM OUR OWN CORRESPONDENT)

Tuberculosis Officers' Association Annual Meeting

THE annual meeting of the Tuberculosis Officers' Association was held recently in Dublin, and an interesting discussion took place on the problems of tuberculosis in Ireland Dr M Quinlan (Kerry) stated that he knew of several healthy families who were infected, and decimated, by infection introduced from abroad, particularly from America and England, and he suggested that such cases should be refused entry at the ports, or, at the very least, that the Port Medical Authority, if or when established, should report such cases immediately to the responsible authority in the area in which these people proposed to reside Persons emigrating to the United States who contracted tuberculosis within three years of their immigration were deported, and even in the case of American citizens, they were, when all treatment failed, advised "to return to their native air," thereby carrying infection to Ireland Dr O'Beirne agreed and added that when some years ago he was surgeon on a transatlantic liner emigrants were examined before they came on board When they came on board they were again examined by him, and again in the course of the voyage Before they were permitted to land they were, outside the harbour, of skin disease had occurred in the past five years A consignment of apples from Cardiff was found to be excessively contaminated with arsenic and was returned to the importer Overcrowding is general in the town owing to housing shortage. Much good work has been done, however, in the renovation of old property which was rapidly becoming derelict. The 41 wooden houses mentioned in the 1924 report are almost ready The corporation housing estate is nearly built up and a new area of 36 acres is under consideration for housing purposes.

The school report shows a marked improvement in the cleanliness of children Dr. Jean Mackintosh reports on the classes for dull and backward children One of the difficulties the teacher has to contend with is the variation of the age of the pupils In a class of 15 there may be children of three or four different age-groups. These children do not get the advantage of teaching in housewifery and handiwork. and the provision of a special school, not at present financially feasible would be the best solution The eye specialist would like to see myope classes established. and the school dentist complains that 50 per cent of the notices sent out to the parents are entirely ignored Before a dental scheme for school-children can be entirely successful the active coöperation of the teacher is essential

Bilston.

Dr T. Ridley Bailey reports that the industries in his district—iron and steel. tinplate. &c —have no special harmful effect on health. Nearly all the privies in the district have been converted into water-closets There is great need for a destructor, as the four tips give rise to nuisances In the meantime Dr. Bailey urges that the suggestions of the Ministry of Health should be carried out in order to keep the tip nuisance down to a minimum Trouble has been caused by van and shack dwellers on an area of land at Stowheath with no proper water-supply or sanitary accommodation. and dwellings in a deplorable condition. As the result of legal proceedings the area has now been cleared There is much overcrowding and an acute housing shortage The building of houses has not provided for the natural increase of the population and has done nothing to relieve overcrowding Since 1919 the council has built 663 houses The people in most urgent need of houses are unable to pay even the minimum rents. Examples of the rents are given. At an old internment war-camp of huts the weekly rents are 2*s* 3*d* to 4*s* 6*d* For municipal wooden dwellings with three bedrooms the rent is 8*s* 6*d* Other houses built by the council have rents varying from 9*s* 4*d* to 14*s* 6*d* The council has schemes in hand for the erection of 230 more houses There is no antenatal work nor any facilities for orthopædic treatment Last year Dr Bailey congratulated the council on the great progress made in various directions, but he points out that "the continued excessive infantile mortality remains the chief blot in our history" and that overcrowding must be remedied 'before any pride in our work is really justified"

MENTAL HOSPITAL REPORTS

The *Cumberland and Westmorland Mental Hospital* had the low death-rate of 6 9 per cent. during 1925 and a recovery-rate of 26 5 per cent.. which was quite good considering the very small proportion of recent and curable cases admitted The general health was satisfactory. and there were no epidemic diseases except influenza The committee has decided to instal a cinematograph apparatus. which will be very welcome. There is at present no occupation officer and parole is very limited The dentist continues to provide valuable services. The medical superintendent discusses in his report the difficult problem of mental nursing

The seventy-third annual report of the *City of Worcester Mental Hospital at Powick* records a satisfactory year with no epidemic disease save a mild influenza and no cases of colitis A visiting dentist has been appointed and attends fortnightly. and the necessary dental apparatus has been purchased A new main water-supply is being laid down and it is hoped that electricity may shortly be supplied for lighting and power. The recovery-rate was 34 42 per cent. and the death-rate 7 23 per cent. Post-mortem examinations were made on 70 per cent. of the fatal cases Every suitable case among those about to be discharged is sent out first on trial The farm and garden provide occupation for about 14 per cent. of the male inmates, some of whom have allotments of their own

The *City of Cardiff Mental Hospital* has the interesting inclusion of a report from the secretary of the League of Social Service which is in charge of the after-care work. Discharged patients have been visited and helped in various ways and granted allowances clothing or help from appropriate funds The hospital is crowded on the male side and had at the close of the year 570 resident patients General paralysis accounted for 13 58 per cent. of the admissions. but in spite of this there was a recovery-rate of over 40 per cent The death-rate was 8 5 per cent Autopsies were held in all cases where permission could be obtained The percentage of deaths from tuberculosis has steadily decreased during the last five years dropping from 13 5 in 1921 to 9 8 per cent. last year. The visiting dentist examined 515 cases and made 524 extractions during the year as well as scalings and fillings. The aural and gynæcological surgeons have treated 127 and 81 cases respectively and performed 25 minor operations General paralytics were treated by induced malaria; three showed physical but no mental improvement. while four others improved sufficiently for discharge and resumption of work in a subordinate capacity Research has been carried out on the estimation of phosphorus and calcium in the blood plasma and cerebro-spinal fluid and the presence of porphyrin in fæces Eleven nurses passed their final examination The medical superintendent conducts an out-patient clinic at the Royal Infirmary. The visiting commissioner remarks that no one can fail to be impressed by the tremendous effort being made to relieve the patients and to make them as comfortable as their mental state will allow

The *Middlesbrough County Borough Mental Hospital* has 450 patients of whom 66 per cent. are kept usefully employed. The recovery-rate was 42·5 per cent and the death-rate 8 1 per cent. In addition to an epidemic of prevalent influenza there were 23 cases of small-pox in January. but none proved fatal A system of electric lighting has been installed throughout the buildings and the erection of a cinematograph has been begun. There are 30 more cases resident than can properly be accommodated. and there is danger of serious overcrowding There is also need for separate provision for treating new admissions apart from epileptics and sick patients. The visiting dentist does not yet pay weekly visits which limits the value of his work. Seven more nurses have obtained their final certificate, bringing the total to 16 Foot-and-mouth disease was prevalent in the district during the year. but fortunately the measures taken to protect the farm cattle were successful.

The report of the Inspector-General of *Mental Hospitals for New South Wales* records that there are over 8000 insane persons under official cognisance in the State distributed among ten mental hospitals and three licensed houses. There was an increase of 120 in the year ending June. 1925 over the previous 12 months, giving a proportion to the general population of 1 . 275. The general recovery-rate rose by 2 per cent to 42 16 per cent. Over 1000 patients were granted leave or discharged on probation during the year The death-rate was 7 19 per cent . general paralysis accounting for the greater proportion of this figure Roughly one-third of those admitted to the reception houses were discharged. and so were saved the necessity of certification The problem of overcrowding became very grave, and resolute steps dirty milk The report includes photographs of pieces of muslin which have been used for the straining of such milk In one case samples were taken from five churns on delivery, and the outside farmer was fined £10 on each sample, or £50 in all Dr Millard points out that the public may be deceived when they buy bottled milk and that the designation should be clearly shown

Walsall

Dr J A M Clark accounts for the very high infant mortality by epidemics of measles and whooping-cough throughout the greater part of the year Influenza was prevalent in the first quarter and diphtheria excessive throughout the whole year The reorganisation of the medical and nursing services of the corporation has been a great gain in efficiency and economy Much more work has been accomplished in health visiting and school nursing without a numerical increase of the staff Dr Clark points out that much is needed to bring the public health services up to an efficient standard The lack of an efficient isolation hospital hampers work in many ways A maternity home is a real necessity and with it an antenatal clinic At the present time expectant mothers attend one of the centres and are advised by the superintendent health visitor It is most desirable, says Dr Clark, that arrangements should be made at an early date for the regular attendance of an obstetrical expert at this centre

There is room for further developments in the school medical service An orthopædic clinic, already approved, is important, an additional school clinic, also approved, will do much to obviate the great overcrowding at existing clinics More open-air schools are needed The existing open-air school does good work, but it has only accommodation for 60, and there is always a long waiting list Mr Griffiths, the school dentist, reports that there is much scope for educating parents in proper feeding and the requirements of oral hygiene Among the younger children the enamel of the first permanent molars is frequently defective, and Mr Griffiths attributes this to vitamin deficiency during the first two years of life The percentage of acceptance of dental treatment is rising, being as high as 85 in some schools and averaging 62 There are many other sanitary requirements of the borough Unsatisfactory registered slaughter-houses can be closed under the new local Act, but must remain until a public abattoir is provided Out of 19,000 water-closets about half have no flushing cisterns and have to be flushed by buckets, &c There are thousands of large fixed ash-pits which should be replaced by sanitary bins No back-to-back houses or houses without through ventilation have been erected for some 50 years, and the 800 or so of this type which remain are too worn out to repair and should be condemned as soon as the housing scarcity has been relieved Building is proceeding more rapidly and 1053 houses on the two principal housing estates are projected immediately

Halifax

Dr Cyril Banks reports that during the last five years a move has really been made in converting the pail-closets into water-closets During 1925, 1241 were dealt with and there remain to be altered 15,162 in situations where a water-supply and sewer are available The condemnation of the Crossfields area is an important sanitary measure which has received the approval of the Ministry since the close of the year The public water-supply is being extended to suburban districts where the private supplies have been unsatisfactory During the last five years notable progress has been made with regard to smoke abatement Mr Clinch, the chief sanitary inspector, who is an expert in this matter, reports that 182 observations of half an hour each were made, chiefly of chimneys likely to be offenders, and that in 27 cases the limit of two minutes in the half an hour was exceeded In one case a prosecution was undertaken and a fine of £15 imposed Every effort is made to encourage smokeless cooking and heating The gas department supply excellent coke at 25s a ton, and the charge for gas is 2s per 1000 cubic feet There are now nearly 50,000 gas-fire appliances in the 27,000 houses The electricity department also encourages the use of domestic appliances

Premises for a new infant welfare centre have been acquired in Northgate-street The maternity homes in connexion with the Royal Halifax Infirmary and St Luke's Hospital appear to meet the needs of the town, and antenatal clinics are held regularly at both institutions The corporation have arranged to pay to these institutions the cost of maintenance and to recover the money from the patients, but in practice this arrangement has not been greatly used, because the patients have found that it costs them less to go into the infirmary direct than under the corporation's arrangements There were 74 notifications of diphtheria during the year, with 10 deaths Of the 10 fatal cases, 1 died at home and the other 9 died within 24 hours of admission to hospital, the disease being too far advanced for antitoxin to be of any value

West Bromwich

Dr Allan B Hamilton (acting M O H) submits the report, owing to the death of Dr Woolsey Stocks in December, 1925 Although 862 houses have been built by the council during the last five years and 256 by private enterprise, housing conditions still remain bad Not only is the shortage of houses not being overtaken, but the requirements of the increasing population are not even being met Overcrowding shows no signs of improvement The following are some examples given in the report A bedroom measuring 1068 cubic feet occupied by man, wife, and six children, bed-sitting-room occupied for living and sleeping purposes by man, wife, and five children, three families, including 14 persons, occupying a house with two bedrooms, back-to-back house with single bedroom occupied by widow and subtenants consisting of man, wife, son aged 18, and daughters aged 25, 23, 20, and 13, house with single bedroom occupied by man, wife, sons aged 20 and 17, and daughters aged 25, 23, and 12, bed-sitting-room occupied for living and sleeping purposes by man, wife, and five children, the latter all sleeping in one bed Comparing 1919 and 1925 there is an improvement in the general state of repair of dwellings, but owing to the housing shortage the number of persons per house has increased, and the number of houses occupied by more than one family is higher by 50 per cent These figures are based on the examination of 1527 houses which were inspected both in 1919 and 1925 The borough has no sanatorium and the 13 beds retained at other sanatoriums are obviously inadequate

Llanelly

Dr Laurence W Pole submits a very complete report on health conditions in Llanelly, which is one of the chief centres of the tinplate industry, and has doubled in population in the last 40 years Plans have been prepared for a maternity home, and an orthopædic scheme for the children is under consideration Antenatal work began in 1924, 54 expectant mothers attended the centre in that year and 91 in 1925 Beyond giving advice of a general character in regard to food, habits, clothing, &c, no treatment is prescribed The work hitherto undertaken does not therefore appear to be of the nature of preventive obstetrics Much attention has been given to the milk-supply and the bacterial examinations show a considerable improvement during the last three years During 1925, 27 samples came within the Certified standard, 20 within Grade A, and 11 were outside Grade A The average daily consumption of milk per head is only about one-quarter of a pint, and Dr Pole hopes that the improvement in cleanliness will encourage the public to use more milk A curious incident occurred in the summer—namely, the spreading of a rumour that about half the bakers in the town were suffering from bakers' dermatitis The statement was made in public, but inquiry showed that there was no foundation for it and that only eight cases inferior to their own Dr A P. Thomson looks upon rheumatism as a specific infection, the main factors leading up to it are unhygienic conditions associated with poverty and bad housing, and particularly dampness and lack of sunlight It is within his experience that rheumatic children who have had early tonsillectomy are less liable to febrile attacks and heart damage Ultra-violet rays have been found beneficial, though Dr Thompson finds no evidence that this treatment is specific Rheumatic children are often highly strung They are likely to be backward from loss of schooling and may suffer from educational pressure But the experience gained at the Barkerville School shows that with suitable methods they make good progress

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED JULY 17TH, 1926

Notifications—The following cases of infectious disease were notified during the week —Small-pox, 157 (last week 128), scarlet fever, 1493, diphtheria, 854, enteric fever, 67, pneumonia, 517, puerperal fever, 49, cerebro-spinal fever, 7, acute poliomyelitis, 8, acute polio-encephalitis, 2, encephalitis lethargica, 17, continued fever, 3 dysentery 13, ophthalmia neonatorum, 110 There were no cases of cholera, plague, or typhus fever notified during the week

Deaths—In the aggregate of great towns, including London, there were 4 (1) deaths from enteric fever, 14 (3) from measles, 6 (3) from scarlet fever, 31 (4) from whooping-cough, 25 (5) from diphtheria, 48 (8) from diarrhœa and enteritis under 2 years of age, and 22 (7) from influenza The figures in parentheses are those for London itself

ROYAL MEDICAL BENEVOLENT FUND

AT the last meeting of the Committee 35 cases were considered and £388 10*s* voted to 25 applicants The following is a summary of some of the cases relieved —

Daughter, aged 56, of M.R.C S Eng, 1858, who practised in London and died this year Assistance is asked for a holiday as the applicant has been in hospital for three months and has undergone two serious operations Voted £10

L.R.C P, aged 76 Owing to age, is unable to get locums although quite fit to undertake the work. Lives with married son, who contributes towards the keep of himself, his wife and the applicant, while the latter is responsible for the rent of 25s a week Applicant's only income consists of the Epsom Pension of £40 and Fund Pension of £26 per annum Special appeal made for help to meet arrears for rent Committee voted £5 Total relief given by the Fund is £82 to March, 1925, elected to an annuity of £26 Jan 1st, 1926

Widow, aged 70, of L S A who practised in London and died in 1897 Has been in domestic service for 15 years and a year ago fell downstairs and broke her wrist She pluckily continued working, but finally had to give up and go into the infirmary where she remained for some months Recently a lady offered her a room rent free but the applicant has to pay something towards her maintenance Fund voted £12 in 12 monthly instalments of £1 each, and an application has been made for the Old Age Pension

Daughter, aged 48 of M.R C S Eng who practised in the Midlands and died in 1910 Her mother died eight months later Applicant started a small business but was induced to sell it so that she could live with and help some relatives Finding that she was not strong enough to do the work she left them, and with the proceeds of the sale went to Australia, hoping that her health would improve She returned home at the end of four months, and has since sold her belongings clothes and jewellery The Charity Organisation Society found her starving in an underground room, gave her temporary help, and referred the case to the Fund, which was able to get her much needed hospital treatment, she is subject to acute asthma and bronchitis and is not strong enough to work She is to go to a convalescent home and the Fund has voted her £26 in 12 monthly instalments of £2 3s 4d each Previous relief amounts to £18

Widow, aged 40, of L R C P Edin who practised in Wales and died in 1923 Left with four children, ages 8 to 18, and with only £100 per annum to support herself and family Son, aged 17, requires help for maintenance whilst studying Voted £3 for three months Previous grants for the same purpose total £29 10s

Daughter aged 27, of M R C S Eng who practised in London and died in 1907 Applicant is confined to bed with heart disease and her only income is £1 a week allowed by an aunt As she requires constant attention a sister gave up a post in Canada to come home and nurse her The Fund is asked to assist towards the expenses Voted £10

Subscriptions may be sent to the Hon Treasurer, Sir Charters Symonds, at 11, Chandos street, London, W 1

Correspondence.

"Audi alteram partem"

THE VALUE OF POPULAR LECTURES

To the Editor of THE LANCET

SIR,—In a paper read at the Jubilee Congress of the Royal Sanitary Institute, Dr W A Daley drew attention to the value of popular lectures as a method of health propaganda Dr Daley both at Blackburn and more recently at Hull has arranged for many such lectures the practical results of which have been exceedingly good Writing from my own experience in giving some thousands of such lectures in recent years, I should like to corroborate every word he said With regard to venereal disease the result of a series of addresses in a town or district where there is a clinic established, but where there has been no popular instruction, is to double and even treble the attendances at the hospital or clinic, and not only that, but it is found of late years, though the number of fresh cases is steadily decreasing, the number of attendances at the treatment centre are very much more numerous, showing that as a result of the instructions given by the lecturers added to the advice of the medical officers, the sufferers have realised that it is necessary to continue treatment even when the first painful and unpleasant symptoms have subsided This, of course, is extremely satisfactory

I have found also that lectures to the fathers and mothers of school-children, and to women attending maternity and child welfare centres, lead to an appreciable increase in the number of expectant mothers seeking that antenatal advice and treatment which is so conducive to future good health The scientific and physiological facts of athletic sports and strenuous games have after many years begun to receive that attention which has long been their due Popular lectures on the Physiology of Motion, and the rudiments of getting and remaining "fit," and the "re-creation" of the body by games and proper physical exercises, are now frequently demanded by boy scoutmasters, girl guiders, teachers in elementary and other schools, as well as experienced athletes I find such lectures followed with the greatest attention, and they give rise to any number of intelligent questions from the audience

Dr Daley remarks on the difficulty of getting enough medical lecturers to carry on this sort of work There are two things essential to make such lectures go down well The first that the lecturer should be heard, and the second that what is heard is adapted and suited to those who hear it A well-organised free film showing is a great asset in attracting a suitable audience, and it is wise to give the lecture and explain the film as far as may be required before showing it I most cordially agree with what Dr. Daley says about the value of addresses to clubs, brotherhoods, and such like organised gatherings The members are intelligent and spread the light in their districts The recent regulations of the Ministry of Health will largely help those local authorities who may wish to make use of these valuable methods of instruction in health matters under the ægis of their medical officers of health

I am Sir, yours faithfully,

London, July 26th, 1926 E B TURNER

THE STUDY OF EPILEPSY.

To the Editor of THE LANCET

SIR,—The American National Association for the Study of Epilepsy as a part of the Ligue Internationale contre l'Epilepsie is anxious to promote a gathering and closer union of those neurologists and psychiatrists of all nations who are interested in the broad field of epilepsy and convulsive diseases were taken to deal with it by the erection of several new wards, while an entirely new hospital is shortly to be built to cope with the steady increase in the numbers of mental patients There is still urgent need, however, for accommodation for the criminal insane, many of whom are now improperly retained in gaols There is a psychiatric clinic, with accommodation for 132 uncertified patients, working in harmony with the out-patient department at the local hospital The fact that its work has far outgrown the available accommodation shows that legislation is needed to permit the ordinary mental hospitals to accept voluntary boarders As a matter of fact there are voluntary boarders in all the hospitals, but the procedure has not been regularised Still more urgent is the need for a Mental Defectives Act since New South Wales has failed so far to follow the example of other English-speaking countries in providing for the education and segregation of these cases As the report observes, the situation is serious, for the mental and physical standard of the race is involved

SCHOOL MEDICAL SERVICE

The following table summarises the figures given in the school reports for two county areas and one city .—

Name of district	No on roll	Average elem school attendance	No of routine examinations	No of special examinations and re-inspections	Percentage of children found on routine examination requiring treatment †
West Riding of Yorkshire	194,683	—*	67,079	13,924	27 54
Bedfordshire	—*	—*	5,087	1,812	22 03
Birmingham	—*	—*	39,216	66,243	26 04

* Not given † Excluding dental defects and uncleanliness

West Riding of Yorkshire

Although steady progress has been made in ascertainment and treatment, Dr J R Kaye maintains that "much of the labour involved should be prevented if child-welfare work assumed greater proportion and the ideals of prevention of ailments and promotion of health were kept more in view" The keynote of his stimulating report is his belief that "the index of efficiency in school medical work is the number and quality of the special inquiries made"

In reviewing some of the special inquiries made by the staff on regional peculiarities, Dr Kaye sums up "The sturdy independence and self-reliance of the textile workers is in the direct line of the best Yorkshire tradition This independent attitude stands in bold contrast to that of the mining population who wait to have everything done for nothing" Although the wages in the mining districts and the textile areas are comparable, the children in the mining districts are neither as clean nor as well fed as those in the textile areas—unfortunately, the latter have recently shown some falling away in general condition owing to unemployment Local inquiries have shown inadequate and ill-balanced dietary in many of the districts, and Dr Kaye joins voice with the many medical officers who call for the systematic teaching of food values and the inclusion of simple dietetics in the school curriculum Hygiene must not only be taught but practised in the school, and to keep windows closed so as to keep up the temperature is as reprehensible to Dr Kaye as was the excuse given for the absence of soap in a lavatory—that it might be stolen Much praise and encouragement is given to the teachers who have established open-air classes, and attention is drawn to the excellent experiment in one area in arranging for children from overcrowded homes to sleep in tents under the supervision of teachers The problem of accommodating the abnormal children is acute in most rural districts and the West Riding is no exception—there are 562 delicate children attending elementary schools and 1023 at no school; 307 feeble-minded children are in attendance at ordinary elementary schools, whilst 202 receive no training and presumably little supervision

Bedfordshire

Dr R T Herdman reports that during 1925 there was a severe epidemic of mumps and influenza which lowered the general health of the children in the county In some areas measles and whooping cough were also prevalent and consequently there was a drop in the average attendance But in spite of the lowered condition of the children, the height and weight of entrants and leavers is markedly better than that of pre-war children Entrants during 1925 are on the average nearly 1 inch taller and 1 lb heavier than the average pre-war child of the same age Following the long journey to school, many of the children in the county arrive with wet feet and stockings, this lowers their vitality and is especially bad for rheumatic conditions Dr Herdman suggests that a spare pair of stockings and shoes should be kept in the school for each child A simple pattern of felt slippers could be made by the elder girls In reviewing medical inspection since it was started in 1908, Dr Herdman traces the rise of parental interest and the increasing help of teachers and interested laymen In 1909 79 per cent of those examined required treatment, which, according to Prof Kenwood, compared favourably with the rest of the country In 1925 only 22 per cent required treatment Coincident with this decrease in the percentage requiring treatment, there has been a steady increase in the percentage of those obtaining it—from under 40 per cent in 1909 to over 70 per cent in 1925 The defect showing the highest incidence was anæmia (416), followed by defective vision and squint (256), and then debility (defective nutrition) 239 This rather indicates that the children in Bedfordshire are not in such good general health as are the children in many of the large urban districts

Birmingham

Dr G A Auden's report is of outstanding interest; efficiency and enthusiasm are shown alike in the close ascertainment of defective and exceptional children and in the provision made for them The total sum of the treatment undertaken by the school medical staff is comparable to that of a fair-sized general hospital Mr F B. Gilhespy, the aural surgeon, has interesting things to say about mastoid operations, and of his own cases 75 per cent promise favourable results A useful comparison is made between the condition of the teeth of children in Birmingham and in New Zealand The proportion of perfect sets of teeth in Birmingham between the ages of 14 and 16 is 60 times as great as in New Zealand Whilst the nutritional and hygienic standards are higher in New Zealand, these factors are outweighed by the influences of more eating between meals and the greater consumption of confectionery Dr Auden insists that cripples will exist as long as the causes of deformity remain, and that it is practicable to prevent the conditions that produce the cripple Much has already been done in Birmingham by open-air and physical deficiency schools and by remedial exercise clinics, and this year there will be a new clinic for massage and electrical treatment Dr Elizabeth Moffett, reporting on hypermetropic children, states that there is great improvement in their school work after wearing appropriate glasses for a short time—probably the strain of focusing near work is too great for the less robust These observations may in part explain the difficulty which many children of apparently normal intelligence find in learning to read and write

In a close analysis of 69 cases of encephalitis lethargica Dr Auden argues that special provision for these cases is a pressing need Their intellectual capacity is rarely sufficiently reduced to make them certifiable as mentally defective, and they are unsuitable to mix with those whose intelligence is much unconscious, cyanosed, eyes bulging, pulse 150, very weak and filiform, respirations hurried and stertorous, temperature subnormal, pupils much dilated, corneal, conjunctival and cutaneous reflexes wholly absent I injected cardiac stimulants, and in an hour's time she began to improve—pulse became stronger and slower, respirations easier, cyanosis began to fade out, superficial reflexes reappeared On Feb 17th the general condition was good, but she was completely unconscious save when, from time to time, she would cry from severe headache. I made a lumbar puncture. Fluid came out under high pressure, bloody-red, but with no clots I removed about 50 c.cm At once the patient looked relieved, and began to speak some intelligible words. On the 18th she was more or less conscious, and after a week she came to see me enjoying very good health

I hope these details are of sufficient interest to warrant space being given to them.

I am, Sir, yours faithfully,
H. SHEHADEH, M D.

Beirut, Syria

TUBERCULOSIS IN THE SHETLAND ISLANDS.

To the Editor of THE LANCET

SIR—In your issue of July 10th Dr. Willoughby raises a very interesting point in regard to the ætiology of tuberculosis and one that does not seem to have attracted sufficient attention The comparatively high rate of tuberculosis infection in the Shetland Islands is to my mind what is not unusual in districts or countries where the native cattle enjoy comparative freedom from tuberculosis Is this not true of Japan where bovine tuberculosis is of comparatively recent introduction?—and what about India, where a large proportion of the native population do not drink cows' milk? Is tuberculosis any less in these countries than it is here? One must remember that other factors—dietetic hygienic. historical—come into play, and any investigation on the lines suggested by Dr Willoughby would have to take these into consideration

Again is it not a fact that the clinical type of tuberculosis seen in the bovine-free areas is of a more virulent type? I happen to see a good few cases from the Shetlands and some of the northern counties and western isles and comparatively few of them recover under treatment. The specific resistance of the individual affected is poor and the disease usually runs an acute course with a fatal termination The good old fibroid type is certainly less in evidence than in the more populous areas farther south That might partly be due to the fact that tuberculosis has not been with the Shetlanders so long as with us further south But taking all these factors into consideration. one must admit that your correspondent's suggestion that "the ingestion of constant submorbific doses" of the bovine type of tubercle bacilli does play its part in conferring some immunity "in counteraction of the human type of the disease" is a valuable one and worthy of full investigation

I am. Sir yours faithfully
FELIX SAVY

The Grampian Sanatorium, Kingussie July 27th, 1926

THE LATE DR R E HORSLEY—Dr Reginald Ernest Horsley who has died at the age of 63 was the son of Captain Charles Horsley, of the East India Company's Service. Born at Sydney, New South Wales, he was educated at Sydney Grammar School, Trinity College, Dublin and the Universities of Melbourne and Edinburgh, and Berlin Graduating in medicine at Edinburgh in 1885, he served for some time as secretary to the scientific staff of the *Challenger* Expedition Commission In 1890 he became F R C S Edin. and three years later M D Devoting his attention to ear nose, and throat work he held appointments as clinical assistant at the Royal Infirmary and surgeon to the Edinburgh Ear and Throat Dispensary. In 1890 he was secretary to the Section of Otology at the International Medical Congress at Berlin For some time Dr. Horsley was physician to Stonyhurst College but in 1903 he retired from practice in order to give his whole time to literary work he published several novels and books of travel and adventure Settling eventually at Crail he became a magistrate and later provost of that royal burgh—an office which made him Admiral of the Forth Dr Horsley married Mary, daughter of the late Mr William Inglis, of Kirkmay

Parliamentary Intelligence.

HOUSE OF LORDS.

THURSDAY, JULY 22ND

Mental Deficiency Bill.

Viscount GAGE, Lord-in-Waiting. in moving the second reading of the Mental Deficiency Bill, said the most important provision was in Clause 1, where the definition of a mentally defective person was altered and extended to include persons affected by injury or disease since birth or early age. There was a difference between mental deficiency and lunacy. The latter was caused by a general breakdown of the normal faculties, but in the case of a mentally deficient person there was actually some physical defect in the brain. Naturally, therefore, the majority of these cases occurred either at birth or by development at an early stage of the individual's life There were cases where some injury or disease, particularly the disease known as encephalitis lethargica, produced a condition analogous to innate mental deficiency Under the existing definition it was impossible to certify these individuals as mental defectives owing to the inclusion of the words "from birth or from early age." Under this Bill this would be remedied, and these persons would be able to be attended to in a proper kind of mental home There were certain other amendments made in the original Act of 1913

The next most important provision occurred in Clause 6. Subsection (1) of that clause provided that a local authority might build a larger institution that it required and take cases by contract from other local authorities An institution for from 500 to 1000 places was more efficient as well as more economical than a smaller institution and some of the smaller local authorities would themselves need an institution containing this number of beds Subsection (2) of this clause contained provisions allowing the local education authority and the mental deficiency authority—both committees of the one council—to provide a joint institution should they deem that desirable This clause had the approval of the Board of Education. The remaining clauses of the Bill merely made small administrative changes which had been found desirable. The Bill had been very thoroughly investigated by a committee on which all the leading specialists on the subject were represented as well as the medical Members of the House of Commons, and he understood that it had their entire approval.

The Bill was read a second time.

On Monday, July 26th the Mental Deficiency Bill passed through Committee and was reported to the House without amendment.

On Tuesday July 27th, the Mental Deficiency Bill was read a third time and passed

HOUSE OF COMMONS

WEDNESDAY, JULY 21ST

London Doctor and the Telephone Directory

Mr MACKENZIE LIVINGSTONE asked the Postmaster-General whether he was aware that Dr A. E. W. Idris, practising as an anæsthetist in London had suffered loss in consequence of his name having been negligently omitted from the London Telephone Directory for October. 1925; and what steps he proposed to take to compensate this gentleman.—Viscount WOLMER (Assistant Postmaster-General) replied: I am aware that through an unfortunate error which I greatly regret, Mrs. Idris s name was inserted in the London Telephone Directory for October, 1925, instead of Dr Idris's. One of the conditions relating to entries in the Telephone Directory is that the subscriber shall have no claim against the Post Office in respect of any omission or error and in the circumstances I am not able to grant compensation to Dr Idris. I have however, offered to bear the cost he had incurred in notifying the error to a number of his clients but this has been refused by Dr Idris.

THURSDAY JULY 22ND

BOARD OF EDUCATION VOTE.

The House went into Committee of Supply on the Civil Service Estimates for 1926–27

On a vote of £28,300 000 for the salaries and expenses of the Board of Education,

Lord EUSTACE PERCY. President of the Board of Education, said that the Board was continuing to reduce the size of the classes in the elementary schools On March 31st 1924, there were 24 972 classes with over 50 children on the roll. These figures related to children on the roll and not average attendances. They did not mean that actually 50 children were being taught in all these classes, but that 50 children

I have been appointed delegate by the National Association for the Study of Epilepsy to attend the sessions of the Gesellschaft deutscher Nervenarzte in Dusseldorf in September, and shall be in Europe during that month, hoping to get into contact with all workers in this field Communications from those who are interested should be addressed to me at the Psychiatric Clinic, Nussbaumstr 7, Munich, Germany.

I am, Sir, yours faithfully,

OTTO WUTH,

Associate in Psychiatry of the Johns Hopkins Hospital and University and A O Professor of Psychiatry in the University of Munich

Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, Baltimore, July 15th, 1926

JOINT ACTION

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY, LTD , AND THE MEDICAL DEFENCE UNION, LTD

To the Editor of THE LANCET

SIR,—The Councils of the Medical Defence Union, Ltd , and the London and Counties Medical Protection Society, Ltd , have agreed that each Society will defend a member in an action arising out of the acts or omissions of an assistant or locum tenens, who is a member of the other Society, as if the assistant were a member of the same Society as the principal, and similarly in the case of actions against members on the staff of hospitals against whom actions are brought arising out of the acts or omissions of duly appointed subordinate medical officers

We are, Sir, yours faithfully,

HUGH WOODS,
General Secretary,
London and Counties Medical Protection Society, Ltd ,
Victory House, Leicester square, W C

JAMES NEAL,
General Secretary,
Medical Defence Union, Ltd
49, Bedford square, W

IMMUNITY AND MALIGNANT TUMOURS

To the Editor of THE LANCET

SIR,—With reference to the paper by Dr Thomas Lumsden in THE LANCET of July 17 on the above subject, in which he describes cytolytic effects in vitro on mouse tumour and curative results in rat sarcoma by means of antisera of animals inoculated repeatedly with cancer tissue of another species, may I point out that the method is not new In 1912 the late Dr Carrington Purvis (Grahamstown) used serum obtained from sheep, which he had inoculated several times with specially prepared human cancerous tissue His object was to obtain " a cytolitic serum which would kill the cells of cancer occurring in a human being " He thought that he obtained necrosis in a large epithelioma of the face in a patient under his care by subcutaneous injections of the inoculated sheep serum In the same year I inoculated rats repeatedly with mouse tumour, and the sheep, goat, and rabbit repeatedly with fresh human mammary cancer tissue I inoculated sheep repeatedly with human cancer serum also In all cases the reactions of the blood-serum of these animals, after repeated inoculation, were found to run parallel with reactions I had obtained previously with antidiphtheritic serum and other immune sera, and in a recurrent operative advanced abdominal case of cancer treated with the inoculated sheep serum it was thought improvement followed The results of my experiments in 1912 were given in a paper before the International Congress of Medicine held in London in 1913 In August, 1924, I repeated the inoculation experiments in the sheep at the Brown Institution with results which fully confirmed my earlier ones In my letter to THE LANCET, which you published on March 14th, 1925, I drew attention to these facts, and noted that the sheep is more responsive to inoculation than the rat, rabbit, and goat At the same time the question arose as to whether the horse might be a more suitable donor, as in the usual preparation of antidiphtheritic serum In his present paper Dr Lumsden states that " an antiserum made by inoculating human mammary cancer into sheep kills mouse tumour cells in vitro practically instantaneously." He goes on to say that the antiserum is *non-toxic* to other normal mouse tissues, and, in short, " perhaps the most specifically anti-malignant of all the sera tested is the antiserum obtained from a sheep which has been repeatedly inoculated with human mammary cancer and human breast tissue "

No reference is made to the work of Purvis and mine by Dr Lumsden, whose work is considered new by the lay Press —I am, Sir, yours faithfully,

J A SHAW-MACKENZIE, M D Lond

London, W , July 22nd, 1926

A LARGE DOSE OF ASPIRIN

To the Editor of THE LANCET

SIR,—The following seems worth recording

A healthy woman, aged 35, with no history of alcoholism, commenced to drink brandy very heavily and continued to do so for three weeks On the day I was called to her she had consumed the contents of a bottle of brandy between 8 A.M. and noon, and had also taken the contents of a large bottle of hair-wash labelled eau-de-quinine, popularly believed to be an excellent emmenagogue About 3 P M she took in one dose 485 gr of aspirin in tablet form Two hours later she vomited copiously, and I saw her about 5 30 P M Her face was cyanosed, respiration 40, pulsus alternans, and complaining of " air-hunger " No active treatment was adopted, she was placed under constant observation and quickly recovered, showing during recovery slight œdema of the face and complaining of very severe headache —I am, Sir, yours faithfully,

J HARGREAVES ROBINSON

Harley street, W , July 25th, 1926

SUBDURAL HÆMORRHAGE

To the Editor of THE LANCET

SIR,—The recording in THE LANCET of May 22nd of cases of toxic subdural hæmorrhage by Mr A. G Banks and Dr A M N Pringle prompts the publication of the following two cases

CASE 1 —On April 15th, 1923, I was called to see a male patient, strong, aged 50, married, but no children, who told me that two days previously he went to bed at 10 P M. as well as usual, but about 12 P M. was awakened by an unbearable attack of pain in the back of the head, heaviness in the eyelids that prevented him from opening his eyes, and dyspnœa A doctor prescribed sedative cachets during the next day, but they were of no avail On examination the patient showed a normal temperature, pulse, and respiration, and no sign of new paralysis (he had suffered from paraplegia from infancy) but could not open his eyes on account, he said, of heaviness Severe headache and pupils somewhat dilated. I suspected subdural hæmorrhage and advised lumbar puncture, but could not obtain his wife's permission A second opinion was obtained, and my colleague advised a bacteriological examination of the blood and cerebro-spinal fluid In the evening I received a report that there were no malarial parasites in the blood On puncture cerebro spinal fluid came out under pressure A request followed from the patient to " come and puncture him," because the small quantity of fluid removed had relieved his headache very much I removed about 40 c cm. of bloody fluid The headache was almost completely relieved I visited him on the 17th His eyes were open, but he noticed that the field of vision in his left eye was contracted On the 18th I punctured him again and took out about 30 c cm of fluid, but this time it was colourless The general condition of the patient improved, and the headache disappeared To day—more than three years later—the patient is in perfect health, but the field of vision in the left eye is still contracted

CASE 2 —On Feb 16th, 1924, a woman came to me for a severe attack of pain in the lower part of the head Before I saw her another doctor had prescribed her some sedative cachets, of which she swallowed one When a few yards from the pharmacy she felt very weak and entered the house of a friend to get rested She remained there about an hour, and then got ready to go home, but suddenly fell on the floor unconscious Her face became cyanosed, respiration stertorous The doctor who had prescribed the cachets ordered stimulant and gave a bad prognosis When I was summoned I found a patient, aged about 40, well built,

Injured Workmen and Hospital Treatment

Mr NEIL MACLEAN asked the Under Secretary to the Scottish Board of Health whether he was aware that John Welsh, senior, valve-shaft camp, and John Welsh, junior, intake ii camp at Balfour and Beattie's Contract, at Fort William, were both injured at work, one suffering from head injuries and the other suffering from a fracture of leg at ankle, that both these men were under treatment at the company's hospital at Fersil Camp and were both ordered to leave the hospital on July 5th, that they were again ordered to leave the following morning, that the company having refused the request of their panel doctor to accommodate the men, he (the panel doctor) sent them to the Belford Hospital, Fort William, that night, that these injured men were refused admittance to the hospital and had to lie out all night, and that all the men on the contract had deductions taken from their wages for this hospital, and whether he could state upon whose orders they were ejected from the Fersil Camp Hospital, and who gave the instructions that they were to be refused admittance to the Belford Hospital, Fort William.—Major ELLIOT replied There seems to be some confusion concerning these cases John Welsh, aged 26, was injured as long ago as April 14th, remained for four weeks in bed at Fersil Camp Hospital, and for two weeks on crutches On July 7th, after being for 12 weeks under treatment, he was seen by the compensation officer, who stated he was fit for light duty He did not accept the position, and after a further six days accommodation at Base Camp was sent by his panel doctor to the Belford Hospital, where, after examination by the medical superintendent, he was informed that the case was not one for hospital treatment, and was accordingly not admitted The medical superintendent's report is that the original injury was not a fracture, but a severe sprain and that recovery would be assisted by light exercise The other case of John Welsh is that of a man who received a head injury on May 31st There was no evidence of fracture, but simply of scalp injury He was removed on July 7th to Base Camp as not being further in need of hospital treatment He remained at Base Camp until July 13th without being asked to do any duty. He left to see his panel doctor, who in this case also sent him to the Belford Hospital After examination by the superintendent he was not admitted as not being in need of hospital treatment I understand that contribution to the Belford Hospital is on a voluntary basis and that some men pay and some do not With regard to the last two parts of the question I have not yet specifically ascertained on whose instructions these men were dismissed from Fersil Hospital The refusal of admission to Belford Hospital was given as part of his duty by the medical superintendent of the hospital

Dairy Cows in Great Britain and Other Countries

Mr ROBERT WILSON asked the Minister of Agriculture the proportion of milk-producing cows to the population in Great Britain, with comparative figures in other countries for which statistics were available —Mr GUINNESS replied The number of dairy cattle per 100 of the population in the undermentioned countries, subject to difference of definition and classification, is as follows —

Country	Population	Year	No of dairy cattle	Year	No of dairy cattle per 100 of population
Great Britain	43,783,000	1925	3,163 523	1925	7 2
Irish Free State	3,163,000	1925	1,264,368	1925	40 0
France	39,310 000	1922	7,303,940	1923	18 6
Germany	62,642,000	1924	9,723,238	1924	15 5
Holland	6,977,445	1921	1,085,713	1921	15 6
Belgium	7,744,259	1924	839,076	1924	10 8
Denmark	3,377 000	1924	1,368 548	1924	40 5
Rumania	16,750 000	1923	2 426,233	1923	14 5
U S A	112,078,611	1924	22,255,000	1924	19 9
Canada	9 226 740	1924	3,726 985	1924	40 4
Australia	5 873,503	1924	2 304 644	1923–24	39 2
New Zealand	1,384,130	1924	1,292,286	1924	93 4

Note —The figures for foreign countries have been taken from the latest Year Book of the International Agricultural Institute and from the official publications of the countries concerned

MONDAY, JULY 26TH

Medical Services in Windward and Leeward Islands

Mr HURD asked the Secretary of State for the Colonies whether he had received information from the Windward and Leeward Islands that their steamship communications with the outside world were now restricted to a single unpunctual monthly freighter without cold-storage capacity, and whether, as this isolation was affecting the school and medical necessities of the islands, remedial measures could be taken through the Imperial Economic Committee, or in any other way —Mr AMERY replied I am aware that the subsidised steamship service hitherto operated by the Royal Mail Steam Packet Company between Canada and the Colonies mentioned has been withdrawn and replaced by a service of the nature indicated The question was considered by the recent West Indian Conference and a resolution passed by that conference has been transmitted to the Government of Canada As my hon friend is aware, the agreement concluded at Ottawa in 1925 between the Government of Canada and the governments of the West Indian and other colonies provided in Article IX for steamship services to the Windward and Leeward Islands, and pending the establishment of such services I do not consider that there is any further action which I could usefully take in the matter

Out-relief to Miners' Families in Lichfield

Mr ARTHUR GREENWOOD asked the Minister of Health whether he had received any communication regarding the conclusions reached by the Lichfield Board of Guardians at its meeting on Friday, July 23rd, on the question of the continuance or non-continuance of out-relief for miners' wives and children —Sir KINGSLEY WOOD replied. Yes, Sir My right hon friend is informed that the guardians resolved to continue to relieve the wives and children of strikers He is taking steps to obtain further information

TUESDAY, JULY 27TH

Pay of the Royal Army Medical Corps

Sir PHILIP RICHARDSON asked the Secretary of State for War whether the Warren Fisher Committee on the pay of the R A M C had now made a report; when it was proposed to revise the pay, and from what date —Sir L WORTHINGTON-EVANS replied The answer to the first part of the question is in the affirmative, as will be seen by reference to the answer given by my right hon friend the Prime Minister on June 15th As regards the remainder of the question, the revised rates of pay, which have already been announced in Army Order 196 of 1926, took effect as from July 1st

Hospital Treatment of Scottish Workmen.

Mr. NEIL MACLEAN asked the Under Secretary to the Scottish Board of Health by whose instructions the camp commandant at Fersil Camp ordered two men, both named John Welsh, and suffering from injuries received at work, to leave the camp hospital late on July 5th, and again at breakfast on July 6th, whether these instructions were issued from the offices of the firm at Fort William, and whether the company provided any conveyance to take these men to Fort William, 25 miles distant —Major ELLIOT replied I am informed that the instructions were given by the company's headquarters office at Fort William and that the men were conveyed there by the company's train.

Food and Drugs Legislation

Major Sir GRANVILLE WHELER asked the Prime Minister whether he could give facilities for the passing of the Sale of Food and Drugs Act (1875) Amendment Bill during the present session.—Mr BALDWIN replied I regret that I see no prospect of time being found for this Bill, but I would remind my hon. and gallant friend that the Bill which was introduced by Brig-Gen Clifton Brown has been dropped

Approved Societies and Dental Committee's Findings

Mr HORE-BELISHA asked the Minister of Health whether the findings of the Dental Committee would be submitted to each approved society for consideration before any action was taken thereon —Sir KINGSLEY WOOD replied Any agreement which may be arrived at as the result of the discussions now in progress between representatives of the approved societies and of the dental profession will be submitted before any action is taken thereon to the Consultative Council on Approved Societies' Work, which is the recognised statutory body representative of approved societies

---

THE LATE DR E W SEYMOUR —Dr Edgar William Seymour, M V O, who has died at Cowes at the age of 58, was educated at Cambridge and St Bartholomew's Hospital graduating in medicine in 1893 Like his father and grandfather before him, he was attached to the Royal household at Osborne, being appointed Surgeon Apothecary to Queen Victoria and Surgeon in Ordinary to Princess Beatrice He was also surgeon to the Royal Yacht Squadron and consulting physician to the Royal Convalescent Home for Officers, Osborne, but retired from practice some years ago were on the roll On March 31st, 1925, there were 21,345 such classes, or a reduction of more than 3600 The figures for March 31st, 1926, were not yet available, but on that date, compared with March 31st, 1925, there were 17,000 more children in average attendance and, on the other hand, they had 1129 more teachers These figures meant that on March 31st, 1925, 14 per cent of all the classes in the elementary schools in England and Wales had over 50 children on the roll, 56 per cent had not more than 40 children on the roll, and 28 per cent had not more than 30 on the roll The question of buildings and accommodation was the main problem that they had to consider at the present moment They had schools on what were called the black lists, with something over 500,000 children at present on the roll Of these, 27 per cent were council schools and about 73 per cent were voluntary schools Of 219 council schools on Black List A, 65, or about 30 per cent, had already been dealt with by proposals contained in the revised forecasts for this year, and these forecasts also provided for 30 more schools to be built by local authorities which would take the place of black-listed voluntary schools The programmes gave every hope that they would have tackled this part of their problem completely, or more or less completely, by 1930 The total amount of elementary school buildings provided for in the revised forecast leaving out building proposals which had been dropped this year, was 244 new schools and 111 enlargements—a very large programme The progress in regard to the voluntary schools had not been so great Some 21 voluntary schools had been removed from Black List A since the original estimates were prepared and 30 more were being dealt with by local authorities this year, making a total of 51, or about 10 per cent of the total number of voluntary schools on Black List A

Mr **TREVELYAN** moved to reduce the vote by £100 He said that a great many of them were extraordinarily uneasy about the policy being pursued by the President of the Board of Education The Government were in financial difficulties and the President of the Board had found it necessary to have a year or two of delay and reaction, and they were told that they would have to wait for a revival of trade The Labour Party challenged the whole position that educational expenditure ought to depend in any sense upon the general condition of the trade of the country When good times came, if ever they did recur, they would not be able by the expenditure of money to improvise an educated generation of the children who were now losing educational advantages They were inclined to say that in times like these, when the gulf between the rich and the poor was greater, that was the time when the nation ought to try to bring the two closer together by providing national education

Mr **HARRIS** said that a matter which had been omitted from the statement of the President of the Board was the provision of special schools There was nothing more pathetic in the great cities than the large number of mentally defective and physically defective children It was one of the curses of civilised life, of overcrowded streets, and bad housing that they seemed to breed these puny, miserable, mentally starved children In London they had done great work in giving these children a chance by giving them an extra two years in special schools Not only in that way did they give a chance to the child, but they saved the State in the long run, because these children, instead of becoming a charge on the State, became in nine cases out of ten breadwinners and able to earn their own living There was still a very large number of areas in which no provision whatever was made in the way of special schools Twenty-seven county authorities and 102 non-county authorities made no provision for special schools He knew that the President was conscious of this deficiency He was all for economy and against waste, but for God s sake do not let them economise at the expense of these unfortunate children Do not let them hold up their training while the Board was inquiring as to some ideal method They knew that the Chancellor of the Exchequer was a hard nut to crack, but if the President would see that he was provided with the necessary funds to enable local authorities to carry out their duties he could be assured of the support of all parties in the House

Dr **HADEN GUEST** said we were no longer a nation ruled by a governing class, by people equipped however effectively up to a certain limit at the public schools We were a nation ruled by an immense democratic many-headed majority, and unless that democracy was really well educated in the best sense of the word we should not be able to solve the tasks that were facing us He would be glad if they could get a real improvement in the general health of the population A general improvement in the standard had been going on, although there had been a reaction in the last year or two Probably, however, they would be able to get over that. If they could get a really high level of health and a really national system of education, which would put all to a certain extent on the same level, he believed that the nation would be able to solve its problems If they were to have in the nation a common mind and the possibility of all coöperating together, they must have a common background in the minds of the children of the nation.

The Duchess of **ATHOLL**, Parliamentary Secretary to the Board of Education, replying to the points raised in the debate, said that if hon Members would look at the estimates they would see that the capital expenditure approved by the Board last year was higher in the case of elementary, secondary, special, and medical services than in any year since the war Therefore the Board was not standing still. There had been a steady advance in special services, and there were 3800 more special school places than previously It was impossible to ignore the state of trade, but they must get the best possible value by organisation as well as by the quality of the teaching If in time of great financial difficulty they were able not only to hold their ground, but make an appreciable and steady advance in essentials and in laying their foundation, they hoped to see a far better structure erected and possibly make an all round advance in the progress of education

The motion to reduce the vote was negatived by 221 votes to 97

Government and Nursing Home Report

Mr **CAMPBELL** asked the Minister of Health whether the Government proposed to adopt the report of the Select Committee on Nursing Homes, and whether he was aware of the urgency of action which was needed in this respect to meet the condition of less well-off middle-class families —Mr **NEVILLE CHAMBERLAIN** replied There has not yet been time for the Government to consider the report and I am accordingly unable to make any statement on the first part of the question The second part of the question does not appear to arise out of the report, and I can only say that there are in any case no funds at my disposal enabling me to meet what I understand to be the object of my hon. friend

Rehousing Schemes in Insanitary Areas

Mr **CAMPBELL** asked the Minister of Health whether he would state the attitude of his department towards the policy of erecting blocks of tenement dwellings to provide alternative accommodation for those people now crowded into insanitary areas, and whether, if his department approved the policy, he proposed to recommend its consideration to the different local authorities —Mr **NEVILLE CHAMBERLAIN** replied Where proposals for clearing insanitary property are approved it is the practice of my department to require that provision shall be made for rehousing the persons to be displaced The precise form of the provision will depend on the circumstances of the particular case While I think the working-classes can generally be housed better in cottages than in blocks of tenements, there are certainly cases in which it is necessary to adopt the latter form of accommodation, and in such cases the erection of tenements would be sanctioned

Indian Medical Service and Free Passages

Colonel **DAY** asked the Under Secretary of State for India if his attention had been drawn to the disappointment expressed by the Indian members of the Indian Medical Services at the concession of free passages to Europe and back lately granted to European members of the Indian Medical Service, which had not been extended to include Indian members, and, with a view to establishing and maintaining the standard of prevailing knowledge and efficiency, would he consider recommending the extension of travelling facilities being afforded Indian members —Earl **WINTERTON** replied My noble friend has received and considered memorials from Indian members of the Indian Medical Service on this subject, but he has found it necessary to maintain the principle on which the leave passage concessions are confined to officers of non-Asiatic domicile The claims of the Indian members of the service, so far as they relate to facilities for study, are receiving further consideration

Slum Clearances in Southwark

Colonel **DAY** asked the Minister of Health the number of dwellings to be proceeded with by the London County Council on the Tabard-street, Southwark, clearance and rebuilding scheme, the number of such dwellings that had been completed, and when it might be expected that the remainder would be completed —Mr **NEVILLE CHAMBERLAIN** replied The Order confirming the scheme to which the hon Member refers required the provision of rehousing accommodation for 2580 persons, and accommodation has already been provided for 2388 persons in 121 tenement dwellings erected on the area By an amending Order, dated July 10th last, the number of persons to be rehoused was increased by 1000, and I think that the hon Member may be assured that no time will be lost by the London County Council in completing the amended scheme

ST THOMAS'S HOSPITAL OLD STUDENTS' DINNER.—This dinner will be held on Friday, Oct 29th, at the Hotel Victoria, Northumberland-avenue, W C, at 7 for 7 30 P M Dr R Percy Smith will take the chair

IN a list just issued are recorded the names, appointments, and degrees of old students of St Thomas's Hospital. The names are also classified under place of residence, and particulars are given of the times of attendance of members of the staff, together with telephone numbers and other details which will be found useful by those who have to do with the hospital.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL—A new operating theatre, which has become a necessity, will shortly be opened The Ladies' Association is contributing £500 towards its cost and other donations have been received, but a further sum of about £500 is needed The committee is taking active steps for an extension of the hospital to cope with the increasing number of patients In the first six months of the year nearly 1000 were admitted.

DONATIONS AND BEQUESTS—The late Alderman John Bowen, J P, of Birmingham and of Malvern, left by will £1250 to the Birmingham General Hospital to endow a bed in memory of his son—By the will of the late Mr George Sparks, of Littlehampton, Sussex, the testator left £500 to the Littlehampton and District Hospital and £500 to the Littlehampton and District Nursing Association

ORDER OF THE NILE—The King has given his licence and authority to Dr O F H Atkey, Director of the Sudan Medical Service, to wear the insignia of the Third Class of the Order of the Nile, and to Dr R M. Humphreys, Inspector Sudan Medical Service, to wear the insignia of the Fourth Class of the same Order These decorations have been conferred by the King of Egypt in recognition of valuable services rendered by the recipients

KIDDERMINSTER HOSPITAL—Last week the Duke of York opened extensions to this hospital, to the cost of which the Prime Minister has contributed £5000 The extensions include two children's wards, one named after Princess Elizabeth, the Duke's baby daughter, and the other after Mr Stanley Baldwin They contain 40 beds, and the other improvements include an out-patient department and new scientific and medical equipment

METROPOLITAN ASYLUMS BOARD NEW APPOINTMENTS—At the meeting of the Board on July 24th Dr F H Thomson, medical superintendent, North-Eastern Hospital, was appointed chief medical officer, Infectious Hospitals Service, in succession to Dr F Foord Caiger At the same meeting the Board also appointed Dr. Eliot Swainston and Dr Alexander Joe as medical superintendents in their Infectious Hospitals Service Dr Swainston, who has been senior assistant medical officer in the Board's Infectious Hospitals Service since 1909, has been allocated to the South-Western Hospital, and will take up duty there on Oct 5th Dr Joe, who is at present assistant medical officer of health, city of Edinburgh, has been allocated to the North-Western Hospital, and will fill the vacancy which will shortly be caused by the retirement of Dr E W Goodall

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION—Arrangements have been made at the Brompton Hospital to permit graduates to attend the daily clinical practice of the hospital during August The small fee charged is payable to the secretary of the Fellowship, who will issue the necessary permit The Queen's Hospital for Children, Bethnal Green, will give an all day course from August 16th to 28th, in which the diseases of children of all ages will be dealt with from both a medical and surgical standpoint The hospital staff have kindly undertaken to provide a simple lunch and tea, and graduates will have access to all parts of the hospital during the whole of the period From August 23rd to Sept 4th the Queen Mary's Hospital, Stratford, has organised an all-day brush up course for those who wish to renew their acquaintance with up-to-date hospital practice The time table provided includes demonstrations in general surgery, medicine, orthopædics, laryngology, &c. The hospital has a new pathological department and also maternity wards and antenatal clinics The City of London Maternity Hospital provides courses on obstetrics and child welfare, these are held weekly and are limited to four graduates Personal application must be made to the secretary of the Fellowship Practical courses in anæsthetics can be arranged at any time Full particulars of these and other courses, and copies of the *Post Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1

COLLEGE OF NURSING—The Queen has consented to become patroness of the College of Nursing Established in 1916, the College has a membership of over 25,000 Its headquarters in Henrietta-street, Cavendish-square, London, were officially opened by Her Majesty in May

Messrs Burroughs Wellcome and Co announce that they can now supply sodium salts of *d*-tartaric, *l*-tartaric, *meso*-tartaric, citric, fumaric, and mucic acids These agents are employed in the differentiation of bacterial types in which sugar reactions are untrustworthy or fail altogether

VIROL RESEARCH SCHOLARSHIP IN PATHOLOGY—The scholarship of £200 offered annually by the directors of Virol, Ltd, for the encouragement of research in clinical pathology, has been awarded by the examiners (Sir William Willcox, Sir Bernard Spilsbury, and Dr Knyvett Gordon) to Miss Thirza Redman, M B Liverp, M Sc, Ph D Lond., for research work on rickets

NORTH WALES MENTAL HOSPITAL OVERCROWDED Dr R W Branthwaite, the Commissioner of the Board of Control, who recently inspected this hospital at Denbigh, reported that it was overcrowded to the extent of 57 patients, "a position, having regard to the steady admission rate, that is disquieting" He strongly urged the provision of a properly equipped pathological laboratory, and the Committee of Visitors has now voted the necessary money.

MENTAL DEFECTIVES IN THE WEST RIDING—The West Riding County Council has decided to purchase Oulton Hall and 315 acres between Leeds and Pontefract, as the nucleus of a home for mental defectives in place of Rawcliffe Hall, near Goole, which the Board of Control considers to be very unsatisfactory The cost of acquiring Oulton Hall, which has until recently been a military pensions hospital, will be £22,500, and a further £30,000 will have to be spent upon making the place ready for 150 patients The Board of Control desires the county council to provide a home for between 1500 and 2000 patients, the cost of which would be not less than half a million; at present there are 1200 mental defectives in the West Riding A colony will have to be created upon the estate, and Oulton Hall would then be used as staff headquarters

THE POST-GRADUATE HOSTEL.—The Post-Graduate Hostel was inaugurated on Monday, July 26th, with an address from Sir D'Arcy Power, in which he, as President of the movement, hoped for its ample support not only from the post graduates themselves, but also from all members of the medical profession "The idea," he said, "is intended to meet the wants of those who are so young in spirit as to feel that there is still much to be learnt, and have left their practices for a time to see what advances medicine has made, or who are still so young in body as wisely to have determined upon a wanderjahr before settling to their life's work." He went on to describe the organisation of the hostel, the arrangements made at the Imperial Hotel for the accommodation of post-graduate students, and the plans arrived at for conducting discussions to be opened by prominent chairmen, while he alluded to the possibility of impromptu dances finding a place among the activities of the adherents

EPSOM COLLEGE—Founders' Day was celebrated at Epsom on Saturday last, July 24th, when Earl Grey of Fallodon presented the prizes and opened the new chemical block. The headmaster, Mr A. C Powell, was able to point to the erection of these new buildings as a proof of the progress of the school, since teaching accommodation for at least 100 more boys would be provided, while the raising of the admission age would merge the preparatory school into the general body Lord Grey gave an interesting address to a large assembly in which, while doing justice to the medical profession as a career which appealed alike to the imagination and the intellect, he demurred at too early a specialisation in education. Accordingly he approved the aim at Epsom to give the boy a good general training, while he expressed himself in favour of the maintenance of Greek as a school subject, and recommended to boys the study of natural history as a recreation

The new chemical block, which was designed by Messrs Barry and Son and built by Messrs Cropley Bros, comprises laboratories, a theatre, lecture-rooms and class-rooms, and the usual annexes for carrying out practical chemical work. The guests who inspected these were also able to see the transformation of the library, the large structural changes recently undertaken in the lower school building, and the new and beautiful panelling in the memorial chapel—these being the innovations which in the main account for a heavy expenditure during the year, and for the necessity of relaxing no pains to increase the income of the Foundation

Medical News.

UNIVERSITY OF OXFORD —At a Congregation held on July 24th the degree of Bachelor of Medicine was conferred on D I Rees, T C Hunt, J H Kennedy, and J N C Ford The Theodore Williams Scholarship in Physiology has been awarded to Frank Raymond Crookes (University College) and John H Hunt (Balliol).

UNIVERSITY OF LONDON —A meeting of the Senate was held on July 21st, the Vice-Chancellor, Sir William Beveridge, being in the chair —The thanks of the Senate were accorded to Mr Donald MacAlister for his offer to inaugurate a fund for the establishment of a medal in memory of his father, Sir John MacAlister, to be awarded to students at the School of Librarianship at University College; and regulations were adopted for the award thereof —Dr E B Verney was appointed as from August 1st, 1926, to the University Chair of Pharmacology tenable at University College He was educated at Tonbridge School, Downing College, Cambridge (1913–16), where he obtained a First Class in Part I of the Natural Science Tripos in 1916, and at St Bartholomew's Hospital (1916–18) From 1918–19 he served with the R A M C From 1921 to 1924 he was assistant in the Department of Physiology at University College, and since 1924 has been assistant in the Medical Unit at University College Hospital In July, 1922, he was awarded a Beit Memorial Fellowship and was re-elected for a fourth year in 1925 He has published a paper in the Proc Roy Soc (1926) and six papers in collaboration with others in the *Journal of Physiology* (1922–26), Proc Roy Soc (1925), &c —The resignations of Dr W E Curtis from the University Readership in Physics at King's College, on appointment to the Chair of Physics at Armstrong College, Newcastle-on-Tyne, University of Durham, and Dr Major Greenwood from the University Readership in Medical Statistics at University College, were accepted as from Dec 31st and July 31st, 1926, respectively —A Diploma in Nursing was instituted, and regulations were adopted for the award thereof —Among the doctorates conferred were the following D Sc in Biochemistry, Mr J H Quastel, an internal student of the Imperial College—Royal College of Science, for a thesis entitled "(1) The Relationship of the Chemistry of Resting Bacteria Towards Bacterial Growth, and (2) A Theory of the Mechanism of Oxidations and Reductions in vivo"—The Rogers Prize of £100 for 1926 was awarded to Dr Robert Coope for an essay entitled the Value of the Various Methods of Investigating Diseases of the Pancreas —The University Studentship in Physiology for 1926–27, of the value of £50 and tenable for one year in a physiological laboratory of the University or of a school of the University, has been awarded to Dr E T Conybeare He proposes to undertake research in physiology at Guy's Hospital, particularly on the clinical side, and possibly also to extend his work on anæsthesia in relation to its clinical application.—Dr E Graham Little has been elected chairman of the Council for External Students, Sir Holburt Waring chairman of the Finance Committee, and Sir Wilmot Herringham chairman of the Library Committee and of the Committee of the Medical Members of the Senate

At recent examinations the following candidates were successful —

M D EXAMINATION

Branch I, Medicine —Frank M Barnes, St Thomas's Hosp, Frank B Byrom, London Hosp, Mahmoud A B Demerdash, Univ Coll Hosp, Helen W Duncan, University of Liverpool, Louis Forman, Guy's Hosp, John T Ingram, London Hosp, Leslie M Jennings, St Bart's Hosp, and Eileen M Saxton, London Sch of Med for Women

Branch II, Pathology —Edward C Dodds, Middlesex Hosp

Branch III, Psychological Medicine —Isabella McD Robertson, St George's Hosp and Maudsley Hosp

Branch IV, Midwifery and Diseases of Women —Mary N Andrews and Barbara V Lucas, London Sch of Med for Women, Dulcie H Lukis, London Sch of Med for Women and St Mary's Hosp, Douglas A. Mitchell, Guy's Hosp, and Mildred M E Yate London Sch of Med for Women

Branch VI, Tropical Medicine —John A W Ebden, Westminster Hosp, and Richard M Morris (University medal), London Hosp and London School of Tropical Medicine

M S EXAMINATION

Branch I, Surgery —Arthur J Gardham, Univ Coll Hosp, Archibald L P Jeffery, St Thomas's Hosp, and Basil L Laver, Guy's Hosp

University College —The following awards have been made in the Faculty of Medical Sciences —Bucknill Scholarship Flora Hargreaves Epsom Scholarship C W F Burnett, Medical Entrance Exhibitions J C S Wells, M P Ellis Anatomy Gold Medal (Senior Class), D F Ogborn (since deceased), Silver Medal (Junior Class), Flora Hargreaves Histology and Embryology Silver Medal, Flora Hargreaves Organic and Applied Chemistry Silver Medal, P D Mottet Physiology Schafer Prize, A S Parkes, Gold Medal (Senior Class), Margaret D Wright Pharmacology Silver Medal, D F Ogborn (since deceased)

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE —The following results are announced in the sessional examination (March to July) of the division of Tropical Medicine and Hygiene —

Passed with distinction R Crawford (winner of Duncan and Lalcaca medals), E G Sayers, J C Paisley, I G MacGregor, W Thomson, R W Thomas, T C Wakefield, R B Jackson, K A MacKay, J A. W Ebden, A F Babonau, and E Le Clezio

Passed D S Adkins, E M Clow, B G Wheatley, H M O Lester, A Schourenkoff, P Milne, C L. Digby Roberts, B E Ebden, W. S Urquhart, M K Murray, V A. Stookes, C C Taffs, I Magdi, I T Kunaratnam, G Sanders G C Bergman, A J Boase, J McNabb, V J G MacGregor, W Yuen, M D Macqueen, W D Pollard, D I Gracey, H J F Wood, J E Chow, M Din, A J Lee, G W Mearns, J E Howard, J H McDonald, A M K O'Halloran D D N Selvadurai, A Brooks, J Symington, B Merrin, C Kearney, N G Rodriguez, and B Chiostri

UNIVERSITY OF EDINBURGH —At the graduation ceremony held on July 23rd the following degrees were conferred —

DOCTOR OF MEDICINE

*William J Adie (in absentia), Stanley E Bethell, ‡Duncan G Cooper, Francis R Cripps (in absentia), ‡James P Davie, ‡James K D Ingram, Schalk W Joubert, †Ian E M'Cracken, James M Manson, *George A Masson, Johannes A Pienaar (in absentia), Ruth J D Ritchie, William A. Robertson, Robert C Scott, Jocelyn Mary S Scovell, and ‡Harry C Sinderson (in absentia)

* Awarded gold medal for thesis † Highly commended for thesis ‡ Commended for thesis

The degrees of Bachelor of Medicine and Bachelor of Surgery were conferred on 145 successful candidates, whose names were given in THE LANCET of July 24th, p 207

The following awards have been made —Cameron Prize in Practical Therapeutics Henry H Dale, F R S, Head of the Department of Biochemistry and Pharmacology under the Medical Research Council Gunning Victoria Jubilee Prize in Chemistry George H Percival Gunning Victoria Jubilee Prize in Materia Medica George A. Masson Milner Fothergill Medal in Therapeutics Andrew Rae Gilchrist Lauder Brunton Prize in Pharmacology and Therapeutics Adam C White Ettles Scholarship and Leslie Gold Medal George Brown Allan Fellowship in Clinical Medicine and Clinical Surgery Derrick M Dunlop Stark Scholarship in Clinical Medicine John G Kininmonth M'Cosh Graduates and Medical Bursaries John B Colquhoun Mouat Scholarship in the Practice of Physic George Brown Buchanan Scholarship in Gynæcology Robert L Turner James Scott Scholarship in Midwifery May Jones Beaney Prize in Anatomy and Surgery James Ernest Monro Conan Doyle Prize Stanley Jackson Annandale Gold Medal in Clinical Surgery James E Monro Murdoch Brown Silver Medal in Clinical Medicine George R Burnett Scottish Association for Medical Education of Women Prize May Jones Dorothy Gilfillan Memorial Prize May Jones Sir Robert Jones Prize in Orthopædic Surgery James D A Gray Pattison Prize in Clinical Surgery James D A Gray Wightman Prize in Clinical Medicine Wilhelmina Mary Grace MacLennan Wellcome Medals and Prizes in the History of Medicine Gold Medal, Alexander F K Clarkson, Silver Medal, Duncan W D MacLaren Cunningham Memorial Medal and Prize in Anatomy Ernest L Godfrey Whiteside Bruce Bursary Arnold G M'Lean

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH —At a quarterly meeting of the College held on July 20th, the President, Dr G M Robertson, in the chair, Dr James Davie Gilruth was introduced and took his seat as a Fellow It was announced that Dr James Walker Dawson had been appointed Morison Lecturer for 1927 The Victoria Jubilee Cullen Prize was awarded equally between Dr G Lovell Gulland and Dr Alexander Goodall

ROYAL COLLEGE OF SURGEONS OF EDINBURGH —At a meeting of the College held on July 23rd, Dr A Logan Turner, the President, in the chair, the following 28 successful candidates out of 66 entered, who passed the requisite examinations between March 29th and April 5th, were admitted Fellows —

Robert F Aitken, Harnandlall Batra, Charles E M Blumer, Richard R S Bowker, William H B Bull, Alexander W Davidson, George V Davies, Homi Darashaw Gandhi, William C Gray, Charles W Harrison, Neil R Houston David R Jennings, Oswald E J McOustra, Hugh Miller, John C Moir, Phani Bhusam Mukerji, Thomas Nicol, James R K Paterson, Roland L Raymond John J Robb, Gerald I Secluna, Arthur B Smith, John Sturrock, James E Sykes, Elizabeth N Thompson, Esmond F West, Robert K. Wilson, and William A -Dains Woolgar

Notes, Comments, and Abstracts.

BRITISH CHEMICAL PLANT EXHIBITION

THIS exhibition, organised by the British Chemical Plant Manufacturers' Association in connexion with the forty-fifth annual meeting and congress of chemists was held at the Central Hall, Westminster, from July 19th to 23rd, and enabled visitors to gain some idea of the development and excellence of chemical plant produced in this country The exhibition, opened by Sir Max Muspratt, and designed primarily for the benefit of chemical engineers and users of chemicals, contained many exhibits of interest to the lay mind, which, if not of immediate medical application, were of importance in the preparation of pharmaceutical and biochemical therapeutic substances

A general survey of the numerous apparatus showed the attention devoted to the production of non-corrodible alloys, three firms—namely, Messrs Hadfields Ltd Firth and Sons, and Brown-Bayley—showing samples of, and tests upon, stainless steels adapted for various uses, whilst Messrs Houghton's and the Lennox Foundry Co provided different types of plant constructed of the well-known corrosion-resisting cast-iron alloys, "ironac" and "tantiron" To appreciate the value of the introduction of these alloys it is necessary to realise the many corrosion-inducing conditions under which they are used in chemical industry Among other metals represented, and applied either alloyed or in the pure state, to the construction of plant, &c, may be noticed copper, nickel, aluminium, and tin, the nickel laboratory apparatus of the Mond Nickel Co having a well-deserved reputation A striking exhibit by the Thermal Syndicate well illustrated the many utilitarian applications of their translucent or transparent silica product, "vitreosil," and among the samples exhibited were noticed small syringes, the sterilisation of which could be carried out with facility and without risk of fracture

The display of apparatus by Messrs Negretti and Zambra showed no striking novelties, but a wide range of thermometers, hydrometers, and continuous distance recording instruments such as pyrometers, depth gauges &c, whilst an interesting brochure entitled 'The History of the Thermometer" was distributed gratis by the firm's representative Bacteriological sterilisers of various types were shown by four firms, one of which, Messrs Brown Bros also exhibited their well-known and highly-efficient patent stills for the preparation of distilled water, in addition to numerous forms of laboratory gas and water taps The Webb colloid mill provided by Messrs Baker Perkins is a device in which a new principle is adopted for the preparation of emulsions, and Messrs Bennett, Sons and Shears drew attention to their patent "mulser" for rendering emulsions permanent by forcing them under pressure against a revolving disc From this machine the average output is 20 gallons per hour.

The Kestner Evaporator Co, Ltd, showed a very compact water-softening plant, in which one of the newer and high-efficiency permutitic compounds is employed This apparatus completely softens about 700 gallons of an average hard water, and requires only 7 lb of common salt for complete regeneration Attention was also directed to a form of horizontal evaporator, constructed chiefly of copper and widely used at the present time for the concentration of fruit juices solutions of insulin, and other liquids The exhibit of the Cape Asbestos Co served to illustrate the wide applicability of the different forms of asbestos, and, considering the readiness with which this substance may be sterilised, it is somewhat difficult to understand why it finds little or no use in surgery

Many examples of plant used for large-scale chemical manufacture were also on exhibition, and there was ample evidence of the skill and ingenuity of the British chemical engineer

THE PREVENTION OF POISON ACCIDENTS

UNDER the name of the "Porcupine" poison-bottle stopper, the Waverly Comb Co, Ltd, 374-8, Old-street, London, E C, have placed on the market bottle corks of varying sizes which have a wooden metal covered head from the periphery of which project small blunt spikes so that in withdrawing the cork from the bottle care has to be taken that the fingers do not come into contact with them If the cork is grasped carelessly, or in the dark, the sense of touch at once makes the person aware of the unusual nature of the stopper, and thus attention is called to the bottle Many accidents have occurred through mistaking a poison bottle for one containing other substances, and the invention ought to go a long way towards reducing the number of accidents which occur from this cause It is, however doubtful whether any invention can be a substitute for common sense and care, the human factor must always be reckoned with

A SKIN REACTION FOR TYPHOID

IN an article reprinted from the *Semana Medica* (No 19, 1926), Dr G Rodriguez, of Buenos Aires, gives a further account of his skin reaction for typhoid [1] In this article he states that his reaction is intended as a test of individual susceptibility His object is to discover why apparently two-thirds of the population are not susceptible to typhoid and he hopes to evolve a means of finding out those individuals who ought to be inoculated against the disease

He finds 8,000,000 organisms from Vincent's vaccine to be the most satisfactory dose but gives tables showing the effects of double and quadruple doses The most interesting table is that showing the results in persons who had been vaccinated against typhoid at different periods The reaction in the great majority of those who had been recently vaccinated (i e, about two months previously) was negative, but in those vaccinated over a year it was strongly positive This he explains as meaning that the organism is in an allergic state, it is hypersensitive to the typhoid protein (bacilli), but still protected against actual infection Dr Rodriguez still considers that his previous experiments, with only 2,000,000 bacilli, provide a test which is of some value for diagnosis if positive in the early stage of typhoid and for prognosis if negative in the later stage, but he admits that further experience is necessary

AN ALMONER'S DEPARTMENT

THE annual report of the almoner's department at St Thomas's Hospital, a substantial pamphlet of nearly 80 pages is full of interest. The department's activities are varied and laborious and the psychological side of them often deeply interesting A constantly recurring difficulty is the ignorance and apathy of the majority of hospital patients about their rights as insured persons, and their reluctance, at first sight, to realise that insurance and the keeping up of payments concern them and their future lives "A great many cases are sent to the almoner in the out-patient department for purely social reasons, maladjusted family life, difficult adolescence, and troubles arising from jealousy, fear remorse, or loneliness" Patience and sympathy are usually successful in removing these difficulties Bad housing gives the almoner abundant trouble "It is not easy to move families nor is it always possible to know what constitutes technical overcrowding" For example, a child of 18 months, suffering from conjunctivitis and probable keratitis since birth belongs to a family several members of which have attended the eye department on and off for years 'Three girls of 19, 14, and 13, the father, and a boy of 12 all slept in one room, the mother and three younger children in the kitchen." The local M O H, it is stated, did not consider this a case of overcrowding In circumstances such as these it is impossible to deal effectively with obstinate eye troubles There is an increase in the number of patients who have to be "discharged as well able to pay for any form of treatment" One of the heaviest pecuniary charges is the cost of transporting patients to and from the hospital for treatment which, although it is provided only when absolutely necessary, last year cost £729 The lady almoner is Miss A E Cummins

ANNUAL CHARITIES REGISTER

THE Annual Charities Register and Digest is a classified register of charities in or available for London The number of these deriving their income from purely metropolitan sources and expending it solely upon metropolitan cases is comparatively small; but the number which, while located in the metropolis, derive their income from all parts of the Kingdom, or afford assistance to applicants from all parts, is very large Excluding missionary and spiritual institutions the turnover of the institutions enumerated in the Charities Register from which information could be obtained amounted in 1923 to rather more than £15,000,000 Voluntary contributions accounted for about £6,700,000 and £1 150,000 came from legacies From these figures alone it is evident that London charities are of immense importance in the national life but even more remarkable are the number and variety of the organisations at work for the relief of suffering The Register and Digest,[2] issued for the Charity Organisation Society by Longmans Green and Co has reached its thirty-fourth edition and is a clear and concise reference book now well-known for its useful and comprehensive information To compile and publish works of this kind is a laborious task, and Londoners are fortunate in having at their disposal so good a guide to the charitable societies and institutions of the area.

---

[1] THE LANCET 1926 i 298 and 373

[2] Annual Charities Register and Digest 1926 Published for the Charity Organisation Society by Longmans Green and Co, Ltd, 39 Paternoster row, London E C Pp 533. 5s 6d

THE death is announced of Mr Henry Kemp-Welch, for over 23 years secretary of Cheyne Hospital for Children, Chelsea Mr Kemp-Welch, who retired last year, had been connected with the hospital practically since its foundation 51 years ago

PRESENTATION TO SIR JAMES CRICHTON-BROWNE —Sir James Crichton-Browne has resigned the office of treasurer of the Royal Institution, which he has held for 37 years, and as a memento of his valuable work his fellow members have given him a silver cup The presentation was made on July 20th by the Duke of Northumberland, who said that it was a striking testimony to Sir James Crichton-Browne's services that during his term of office the endowment fund had risen from £22,713 to £122,500 The work itself had been done in the intervals of a busy life whose motive was always a love of and zeal for the truth, and in their friend they had a rare combination of devotion, sound judgment, unfailing tact, and the ability to inspire confidence and friendship Sir James Crichton-Browne, in acknowledging the gift, predicted increasing success for the work of the Institution

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

LECTURES, ADDRESSES, DEMONSTRATIONS, &c

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, Wimpole street, W

MONDAY, August 2nd, to SATURDAY, August 7th —WEST END HOSPITAL FOR NERVOUS DISEASES, 73, Welbeck-street, W Special Course, consisting of clinical demonstrations upon selected cases, will be given at this Hospital at 5 P M as follows —Tues, Dr Hobhouse Disseminated Sclerosis Wed, Dr Hobhouse Hemiplegia and Local Cerebral Lesions Thurs, Dr Macnamara The Sequelæ of Encephalitis Lethargica Frid, Dr Worster Drought Clinical Forms of Neuro-Syphilis

Appointments.

CLAPHAM, H, M R C S, L R C P Lond, has been appointed one of the Medical Referees under the Workmen's Compensation Act for the Districts of the County Courts of *Biggleswade, Huntingdon, Peterborough,* St Neots, and Thrapston and Oundle

HOWELL, B WHITCHURCH, F R C S Eng, *Honorary* Surgeon to Cheyne Hospital for Children, Chelsea

SOUTER, W C, M B, Ch B Aberd, Ophthalmic Surgeon to the Aberdeen Royal Infirmary

SWAINSTON, E, M D, B S Durh, D P H *Camb*, Medical Superintendent of the South-Western Hospital, Stockwell, S W, Metropolitan Asylums Board

Metropolitan Asylums Board JOE, A, M D, Ch B, D P H Edin, and SWAINSTON, E, M D, B S Durh, Medical Superintendents

Willesden General Hospital BOURNE, A W, M B Camb, F R C S Eng, a Member of the Honorary Consulting Staff, PHILLIPS, L G, M S, M B Lond F R C S Eng, *Honorary* Gynæcologist

Certifying Surgeons under the Factory and Workshop Acts CURRIE, S H, L R C P Lond, M R C S (Swanscombe), MITCHELL, J C D, M B, Ch B Glasg (Berwick), RAMAGE, J H, M B, Ch B Glasg (Neilston, Renfrew)

Vacancies.

For further information refer to the advertisement columns

Aberdeen Royal Infirmary —Two Hon Jun Asst S 's
Bath, Royal Mineral Water Hospital —Res M O £130
Bath Royal United Hospital —Asst H S £100
Birmingham City Mental Hospitals —Asst M O £350
Bolingbroke Hospital, Wandsworth Common, S W —H S At rate of £120
Bolton Infirmary and Dispensary —First H S £150
Bradford, Children's Hospital —H S £100
Bradford Royal Infirmary —H S £150
Brighton, New Sussex Hospital for Women and Children —Ten, Hon Asst Anæsthetist
Burnley, Victoria Hospital —H S £150
Burton on Trent Infirmary —Jun. Res H S £150
Cardiff, Prince of Wales' Cripples Hospital —H S £100
Cardiff, Welsh National School of Medicine —Lecturer in Pathology £750
Derbyshire County Council —Asst County M O £750
East African Medical Service —Sanitation Officer £660
Hastings, Royal East Sussex Hospital —Hon Clin. Asst in X Ray Dept
Infants Hospital, Vincent-square, Westminster —Jun Anæsthetist
Leicester Isolation Hospital and Sanatorium —Res M O £3
Manchester, Ancoats Hospital —Res M.O £150
Manchester, Crossley Sanatorium, Delamere Forest —Asst M O £200
Manchester Hospital for Consumption, &c —Res M O £300
Miller General Hospital for South East London, Greenwich road, S E —Sen Res M.O £250
Papa Westray, Orkney —M O and P V £360
Poplar Metropolitan Borough —M O H £1100
Sheffield Royal Hospital —Surg Reg
Western Australia —Inspector General of the Insane £960

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Bollington (Cheshire)

Births, Marriages, and Deaths.

BIRTHS

HAYDEN —On July 18th, at Graham road, Hendon, the wife of Captain A F Hayden, M B, F R C S, I M S (retd.), of a daughter

MACKAY —On July 17th, at Cliftonville, the wife of Dr J M Mackay, W A M S, of a daughter

PENDERED —On July 25th, the wife of J H Pendered, M.D, F R C S, Cumberland House, Southampton, of a daughter

MARRIAGES

LIVINGSTON—EDWARDS —On July 21st, at Wonston, Hants, Alexander Livingston, M B, Ch B, M D S, to Margaret Aubrey, third daughter of Canon W G Edwards, M A., and Mrs Edwards, of Wonston Rectory

DEATHS

MACLAGAN —On July 19th, at Ravensdowne Berwick upon Tweed, Charles George Maclagan, M B, C M, aged 66

PERRY —On July 18th, accidentally drowned, Lionel Banks Perry, *M B, B C Camb*, aged 41

SEYMOUR —On July 24th, at Debourne, Cowes, I W, Edgar William Seymour, M V O, M B Camb

THOMSON —On July 18th, at Bridge street, Musselburgh, Midlothian Andrew Douglas Ramsay Thomson, F R.C.P. Edin, aged 74

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages and Deaths

THE LANCET · SUBSCRIPTION RATES

INLAND	One Year	£2	2	0
	Six Months	1	1	0
	Three Months	0	10	6
ABROAD	One Year	2	10	0
	Six Months	1	5	0
	Three Months	0	12	6

Subscriptions not paid in advance are charged out at the published price of 1s per copy, plus postage Cheques and P O 's (crossed "Westminster Bank, Ltd, Covent Garden Branch") should be made payable to THE MANAGER, THE LANCET Offices, 423, Strand, London, W C 2

SMALL ADVERTISEMENT RATES.

Books and Publications
Official and General Announcements
Trade and Miscellaneous Advertisements } *Four lines* and under 6s 0d

Every additional line 1s 6d

For complete scale of advertisement charges apply to THE MANAGER

An Address

ON

FUNCTION AND DESIGN.

Delivered before the Section of Physiology of the British Association at Oxford on August 5th, 1926,

By J B LEATHES, M B Oxf, F R C S Eng, F R C P Lond, F.R S,

PRESIDENT OF THE SECTION, PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF SHEFFIELD.

Among natural sciences physiology takes a place which in one respect is different from that taken by any other It studies the phenomena of life, but more particularly the ways in which these phenomena are related to the maintenance of life Anatomy and morphology are concerned with the forms of living organisms and their structure, biological chemistry, as distinct from physiology with the composition of the material in which the phenomena of life are exhibited The province of physiology, in studying the functions of these forms and of this material, is to ascertain the contributions that they make to the organisation of the living mechanism, and learn how they minister to the maintenance of its life Function implies ministration, structure for physiology implies adaptation to function, what in a word may be termed design

The Fundamental Attributes of Life

Ultimate analysis of the phenomena with which physiology deals leads to the fundamental distinction between matter in which life is manifested and matter in which it is not. Life is exhibited only in aqueous systems, containing unstable, perishable combinations of carbon with hydrogen, nitrogen, sulphur, phosphorus, and oxygen, in the presence of certain inorganic ions, those which are present in the sea, the native environment originally of all forms of life, and the inalienable property that such matter exhibits when alive, and that matter which is not alive does not, is that these unstable organic combinations are for ever reforming themselves out of simpler combinations that do not exhibit this property and do so at a rate which averages at least not less than that at which they break down This power of self-reformation, spontaneous regeneration, operates not only when living organisms, cells or communities of cells are growing or reproducing their kind, the very maintenance of living existence requires by definition that it should persist In the absence of water the living process may sometimes apparently be suspended for a time as it may be if the surrounding watery medium is immobilised by cold it is a question whether this is anything more than a retardation to a rate of change that is imperceptible by the ordinary methods of observation, and a question how long such suspended animation is possible where it is possible at all It is only where water has the kinetic activity of the liquid state that spontaneous regeneration of living matter can in general proceed and then it must, for when it ceases the unstable material ceases to live

Chemical analogies for this power of spontaneous regeneration if such exist can only exist in part, in the present state of our comprehension of it, certainly, it is hazardous to try to trace them The attempt so commonly made to trace one between the growth of living matter and the growth of crystals in a saturated solution it is safe to say is in so many respects on the wrong lines that it is merely misleading Crystals are not alive The molecules that constitute the crystal are set in solid formation, so long as the crystal exists they are stable and unchangeable These molecules collect on the growing crystal but they exist ready-made in the surrounding solution they do not come into being by the influence of the crystal; they are themselves so constituted as to take up a set position in relation to each other and to those already ranged side by side in the crystal, as soldiers on the drilling-ground at the word "fall in"; they are available because the solution is kept saturated by the dissolving of smaller but similar crystals that for physical reasons are more soluble in the solution than the larger ones In contradistinction to this, the molecules that enter into the composition of living matter exhibit the phenomena of life only when permeated with water molecules exercising the kinetic activity of the liquid state; they are unstable and perishable; the added molecules, some of which even during growth and all of them at other times, serve but to replace those that perish, do not exist ready-made, they come into being only in conformity to the pattern and under the influence of those already in existence, a pattern that these alone can use, and they are formed out of material that is chemically different from them

The Implications of Spontaneous Degeneration

Let us for a moment consider what this spontaneous regeneration implies Of the various chemical components of protoplasm proteins are generally considered the most important, often the only important, ones The elucidation of the chemical principles upon which the structure of proteins rests, which took place about the beginning of this century, was, like the neurone hypothesis of the structure of the nervous system, an advance the magnitude of which only those perhaps can appreciate who began the study of physiology well back in an earlier one For a time it seemed in each case that the problem was solved and all that was to follow was simple Those were great days The best-known varieties of proteins, when detached and uprooted from the place where they grew, consist of chains of about a hundred, sometimes nearly two hundred, links Each link is an amino-acid coupled by its acid group to the amino group of one neighbour and by its amino group to the acid group of its other neighbour, a molecule of water being lost at each linkage There are not more than about twenty different amino-acids, so that some of them must occur several times in the chain; in some kinds of protein one amino-acid may occupy 30 or 40 of the 100 places in the chain In any such isolated protein it is probable that the order as well as the proportion in which each amino-acid occurs in the molecule is fixed, and it is this specific order and proportion that accounts for the specific character and properties of the protein What could be simpler? And only yesterday all was so obscure

It is not recorded that in the rush of this advance anyone stopped to reflect what number of formations such a protein might still possibly have Supposing it were a chain of only 50 links a very simple case · if all the links were different the number of possible permutations is denoted by the innocent-looking symbol $\lfloor\underline{50}$ If, instead of all being different one kind of link recurred ten times, the number would be reduced to $\lfloor\underline{50} / \lfloor\underline{10}$ If, in addition, there were four that recurred four times and ten that recurred twice, it would be further reduced to

$$\lfloor\underline{50} / \lfloor\underline{10} \times (\lfloor\underline{4})^4 \times (\lfloor\underline{2})^{10}$$

It would now consist of a chain of only 50 links of which there were only 19 different kinds, and the number of different arrangements of its parts would be about 10^{48} Astronomy deals with big figures Light it is said takes 300 000 years to travel from one end of the Milky Way to the other, this distance expressed in Angstrom units 10 000 000 of which go to a millimetre, would be less than 10^{32} So far are we from knowing the structure of protein molecules So far are we from knowing what variations in disposition of the parts in such a molecule may not occur without our being within a measurable distance of detecting them For if the number of possible varieties of a protein whose molecular weight is known and known to be exceptionally small and

CHEMISTRY, PURE AND APPLIED

To peruse the pages of a classified price-list on Exact and Applied Science, Part VII, such as that recently issued by Messrs H Sotheran and Co, containing the titles of nearly *4000 volumes devoted to chemistry and chemical technology*, is a liberal education in the history of these sciences The items included in the present list range throughout the various phases in the development of chemistry from the earliest speculative theorising through the period of alchemical investigations, with its gradual evolution into the age of accurate experiment, observation, and deduction, to the present time To the readers of THE LANCET the fact that so many of the authors of works on pure and applied chemistry from the seventeenth to the early nineteenth centuries were medical men will not be without interest ministers of religion are, however, in serious competition The brief annotations, appended to many of the items, being erudite without dullness, and frequently humorous, prevent the ennui that might be expected from the reading of a catalogue

A rapid survey of the various entries enables us to realise the wealth of material available. Thus a complete set of the Transactions of the Royal Society of Arts, dating from 1783 to 1845, in good condition, a highly important and rare series, is quoted at a very moderate figure Numerous works of that versatile author, F C Accum, famous for his exposure of food adulteration under the subtitle of "Death in the Pot," are offered, including his manuals on chemical instruction, brewing, wine making, and the manufacture and use of coal-gas Among other rare works are to be found Schmidlap's German treatise on fireworks dated 1564, the "Art of Photogenic Drawing" by Fox Talbot, Kunckel's "Ars Vitraria Experimentalis," and Stephen Hale's "Statical Essays," a description of early experiments in plant and animal physiology The catalogue is admirably arranged and will prove of interest to senior and research students, analysts, the connoisseur of rare works and all interested in the history and controversies of chemical science, each of whom will find within its covers much that will appeal to his taste

A BURIAL IN THE MARKET-PLACE

PUBLIC health administration is perhaps humdrum in this country Not so, however, in Calcutta The *Indian Medical Record* (May, 1926) protests against the turning of a public market in that city into a burial ground The facts as given in the *Record* were, briefly, as follows A beggar died in the market, and after his death some of the butchers suddenly took it into their heads that the man was a saint They insisted on burying the body in the very place where he had died In such a case the proper procedure would have been to inform the police, who would have disposed of the body This was not done—rather, in the very presence of the deputy mayor of Calcutta, the body was buried inside the market near to the place where foodstuffs were sold Later the corporation appointed a special market committee to thresh out the matter They did this thoroughly, for they obtained evidence that (1) the deceased fakir was a Christian, (2) had been convicted in a stabbing case and sentenced to imprisonment, (3) the sentence had been remitted on the occasion of the Queen's Diamond Jubilee, (4) no express, valid, or implied permission had been given for the burial—on the contrary "the attitude of the authorities was directly against the burial from the beginning to the end" [and attitude is static] In the opinion of the Advocate-General for Bengal the body had been unlawfully buried on the property of the corporation, who were not only entitled to exhume and remove the body, but were also not precluded by anything that had happened from doing so In August, 1925, the corporation definitely resolved that if within two months of the date of that meeting no one came forward to do it, the chief executive officer should exhume the body and bury it in a proper place Nothing had been done since that previous resolution It was clear to the *Indian Medical Record* that not only had the Calcutta Corporation made a laughing stock of themselves, but that their folly endangered the public health To us it is even clearer that the difficulties of public health work in India lie not mainly with the parasitic or climatic causes of disease

A CHILDREN'S SPA

THE mineral springs of Mont Dore have for many years been known to balneologists of all countries, and have an established reputation in the treatment of respiratory complaints Dr A Debidour and Dr K. Eckenstein[1] give an interesting account of an original and enterprising development which has taken place there in recent years, as the result of which the treatment of children has become one of the principal features of Mont Dore It is obvious that this object could not be achieved without some fairly extensive reorganisation of the routine, the customary programme of a spa would present little attraction to children, and their presence in large numbers would be incompatible with the comfort of many adult patients Accordingly a special children's department was equipped, in which separate inhalation chambers were provided for boys, girls, and small children, under the management of a nurse. Push-ball and other attractions are employed to popularise the visit to the inhalation room and to stimulate respiration The vapour baths are supplemented by a school of respiratory education in which the children are taught exercises which develop the respiratory muscles The exercises take place both in the open air and in a gymnasium, and are astutely combined with games of various kinds The Mont Dore treatment is indicated for children with enlarged tonsils and adenoids, both before and after operation, as well as for asthmatics, and encouraging results have been obtained in increasing the lung capacity and the general condition of the patients

UNIVERSITY COLLEGE HOSPITAL APPEAL

THE extension of the hospital's work, made possible by the Rockefeller Foundation's gift, has increased the number of beds available by 202 Although most of these are already endowed, it is estimated that the regular income will have to be increased by at least £15,000 a year if the establishment is to be properly maintained There is already a debt of £20,000, and in connexion with a special appeal for the maintenance fund an illustrated booklet entitled "A Meeting of the Ways" has been prepared which gives an account of the hospital's history and services to the community

SMOKING AND FIRE WORSHIP

To the Editor of THE LANCET

SIR,—In THE LANCET of May 22nd last the habit of smoking is treated from an American as well as from a British standpoint (Sir Humphry Rolleston's address and the notes of Dr J Rosslyn Earp, of Antioch College, Ohio) Both communications, in my opinion, are defective in so far as they do not give sufficient importance to inheritance, often a dominating factor The brain of to-day is a continuation of the brain of yesterday, in other words, we inherit what was transmitted or given us by our ancestors, and the difference in quality is but slightly discernible If we hark back hundreds of years expecting vast changes in brain development we are disappointed, even thousands of years can be looked upon as yesterday in the ladder of evolutionary ascent, so that the brain of to-day and the brain of yesterday react almost equally in similar circumstances Tobacco, the drug, acts as a liberating agent to nervous energy, like theine, caffeine, cocaine, matein, and similar narcotics in moderate doses, and facilitates nervous combustion, yet the mental attitude of the smoker depends but partially on nicotine, the narcotic, and chiefly on the act of smoking as an intricate rite

Let us picture before our mind's eye a smoker, and follow him step by step, we will be convinced that in his moments of exaltation he has entered the moods of his fire-worshipping ancestors There he is—the modern smoker—leaning back in an arm-chair with a pipe in his mouth casting fragments of interrupted sentences at you from between clenched teeth He now strikes a match, holds its lighted head above the bowl of the pipe, draws but finds the tobacco too loosely packed Inserting his left index finger into the mouth of the bowl he packs the tobacco tighter Meanwhile he holds fingers, fire, and bowl in such close proximity you would fain hurry the lighting to avoid burns, but no he hugs the approximation, lingering over the warmth, and dwells fondly on the flickering flame before it dies The tobacco alight, he peers into the glowing bowl and uplifting column of smoke, impelled upwards as if by subdued outburst of energy from the rotund receptacle His gaze may be deflected from the column to cones of vapour ejected at intervals from his mouth, or on an occasional wreath revolving its ascent skywards, intensifying his brood into that of semi-mesmerism

In his present mood he is subconsciously participating in the experience of his fire-worshipping ancestor who gloried in sacrifice and the transmutation of matter through that ghoulish column into what he considered was a spirit-world The smell of burning flesh, the crackling and simmering, the whole gamut of colours displayed in the offering, the death dance of the ascending column, created a religious fervour and exaltation attenuated somewhat in the offspring that smokes his pipe of tobacco An impoverished setting diminishes the exaltation Surely no present-day mind can disentangle itself from the past

I repeat, what the centuries have bequeathed reacts in more or less the same way in similar circumstance

I am, Sir, yours, faithfully,
M A I

Buenos Aires, June 30th, 1926

A CORRESPONDENT inquires in what dosage and at what intervals emetine should be used in hæmophilia

---

[1] Franco British Medical Review, June, 1926

An Address
ON
FUNCTION AND DESIGN.

Delivered before the Section of Physiology of the British Association at Oxford on August 5th, 1926,

By J B LEATHES, M B Oxf, F.R C S Eng, F R C P Lond, F.R S,
PRESIDENT OF THE SECTION, PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF SHEFFIELD

Among natural sciences physiology takes a place which in one respect is different from that taken by any other It studies the phenomena of life, but more particularly the ways in which these phenomena are related to the maintenance of life Anatomy and morphology are concerned with the forms of living organisms and their structure; biological chemistry, as distinct from physiology, with the composition of the material in which the phenomena of life are exhibited The province of physiology, in studying the functions of these forms and of this material, is to ascertain the contributions that they make to the organisation of the living mechanism, and learn how they minister to the maintenance of its life Function implies ministration, structure for physiology implies adaptation to function, what in a word may be termed design

The Fundamental Attributes of Life

Ultimate analysis of the phenomena with which physiology deals leads to the fundamental distinction between matter in which life is manifested and matter in which it is not. Life is exhibited only in aqueous systems containing unstable, perishable combinations of carbon with hydrogen, nitrogen, sulphur, phosphorus, and oxygen, in the presence of certain inorganic ions, those which are present in the sea, the native environment originally of all forms of life; and the inalienable property that such matter exhibits when alive, and that matter which is not alive does not, is that these unstable organic combinations are for ever reforming themselves out of simpler combinations that do not exhibit this property and do so at a rate which averages at least not less than that at which they break down This power of self-reformation, spontaneous regeneration, operates not only when living organisms, cells or communities of cells are growing or reproducing their kind; the very maintenance of living existence requires by definition that it should persist In the absence of water the living process may sometimes apparently be suspended for a time, as it may be if the surrounding watery medium is immobilised by cold, it is a question whether this is anything more than a retardation to a rate of change that is imperceptible by the ordinary methods of observation, and a question how long such suspended animation is possible where it is possible at all. It is only where water has the kinetic activity of the liquid state that spontaneous regeneration of living matter can in general proceed, and then it must for when it ceases the unstable material ceases to live

Chemical analogies for this power of spontaneous regeneration if such exist can only exist in part, in the present state of our comprehension of it. certainly, it is hazardous to try to trace them The attempt so commonly made to trace one between the *growth of* living matter and the growth of crystals in a saturated solution, it is safe to say is in so many respects on the wrong lines that it is merely misleading Crystals are not alive The molecules that constitute the crystal are set in solid formation · so long as the crystal exists they are stable and unchangeable These molecules collect on the growing crystal but they exist ready-made in the surrounding solution they do not come into being by the influence of the crystal; they are themselves so constituted as to take up a set position in relation to each other and to those already ranged side by side in the crystal, as soldiers on the drilling-ground at the word "fall in"; they are available because the solution is kept saturated by the dissolving of smaller but similar crystals that for physical reasons are more soluble in the solution than the larger ones In contradistinction to this. the molecules that enter into the composition of living matter exhibit the phenomena of life only when permeated with water molecules exercising the kinetic activity of the liquid state they are unstable and perishable; the added molecules, some of which even during growth and all of them at other times, serve but to replace those that perish do not exist ready-made, they come into being only in conformity to the pattern and under the influence of those already in existence, a pattern that these alone can use, and they are formed out of material that is chemically different from them.

The Implications of Spontaneous Degeneration.

Let us for a moment consider what this spontaneous regeneration implies Of the various chemical components of protoplasm proteins are generally considered the most important, often the only important, ones The elucidation of the chemical principles upon which the structure of proteins rests, which took place about the beginning of this century, was, like the neurone hypothesis of the structure of the nervous system, an advance the magnitude of which only those perhaps can appreciate who began the study of physiology well back in an earlier one For a time it seemed in each case that the problem was solved and all that was to follow was simple Those were great days The best-known varieties of proteins when detached and uprooted from the place where they grew, consist of chains of about a hundred, sometimes nearly two hundred, links Each link is an amino-acid coupled by its acid group to the amino group of one neighbour and by its amino group to the acid group of its other neighbour. a molecule of water being lost at each linkage There are not more than about twenty different amino-acids, so that some of them must occur several times in the chain, in some kinds of protein one amino-acid may occupy 30 or 40 of the 100 places in the chain In any such isolated protein it is probable that the order as well as the proportion in which each amino-acid occurs in the molecule is fixed, and it is this specific order and proportion that accounts for the specific character and properties of the protein What could be simpler? And only yesterday all was so obscure

It is not recorded that in the rush of this advance anyone stopped to reflect what number of formations such a protein might still possibly have Supposing it were a chain of only 50 links a very simple case · if all the links were different the number of possible permutations is denoted by the innocent-looking symbol $\underline{|50}$ If, instead of all being different one kind of link recurred ten times, the number would be reduced to $\underline{|50} / \underline{|10}$ If. in addition, there were four that recurred four times and ten that recurred twice, it would be further reduced to

$$\underline{|50} / \underline{|10} \times (\underline{|4})^{4} \times (\underline{|2})^{10}$$

It would now consist of a chain of only 50 links of which there were only 19 different kinds, and the number of different arrangements of its parts would be *about 10^{48} Astronomy* deals with big figures Light it is said takes 300 000 years to travel from one end of the Milky Way to the other: this distance expressed in Angstrom units, 10 000 000 of which go to a millimetre would be less than 10^{32}. So far are we from knowing the structure of protein molecules So far are we from knowing what variations in disposition of the parts in such a molecule may not occur without our being within a measurable distance of detecting them For if the number of possible varieties of a protein whose molecular weight is known. and known to be exceptionally small, and which contains the several amino-acids in a known proportion, is as great as this, the number that is possible when that proportion may be changed is practically incalculable, each change in proportion being capable of a number of new arrangements that could be calculated, as was done for our hypothetical case

But in the living cell, where these chains are put together, each link must first be fashioned and then forged into the chain, unfinished chains *in statu nascendi* must exist which our analytical methods can never detect In such unfinished chains the order presumably in which the amino-acids are linked up is observed, but the proportion must be different from that in the finished product, for in a chain of nearly a hundred links a particular amino-acid—cystine, for instance—may occur only once

Analogy of Crystal Formation

Now it is possible that the analogy of crystal formation may be applied to the reproduction of the characteristic order in which the linkings occur, and that the parts out of which a new chain is to be formed may be collected and brought into position alongside of the corresponding parts of an existing chain by forces that are similar to those that determine the latticed relations of atoms in a crystal But something more than this is required to account for the linking up of these links by the loss of water, and still more for the fashioning of the links themselves. In plants all varieties of amino-acids come into being as required, in animals, it is true, some must be supplied ready-made in the medium in which the proteins grow; but even in animals some of them can be formed from material of a totally different nature

Wherever this is the case we have to suppose that it is by selective emphasis of certain otherwise unemphasised but possible arrangements of atoms or groups of atoms, evidence for the occurrence of which under similar conditions in the absence of life is generally not obtainable Specific catalysed syntheses must cooperate with the forces that merely sort out and place in proper order the assembled parts, and must fashion for them the particular links that they need at each step Specific catalytic agents playing an important part in cell chemistry are familiar in the enzymes found in digestive secretions and also locked away within the cells themselves There is much to support the idea that such agents act by modifying the chaotic, indeterminate, kinetic agitation of certain kinds of molecules in their immediate neighbourhood in such a way that the relative positions in space of groups capable of reacting with one another tend to become those in which reaction is likely to occur, and to occur in conformity with a certain pattern The peculiar thing about the chemistry of living matter is not that the reactions that are characteristic in it are novel, but that in the rough and tumble of ordinary liquid systems their occurrence is almost infinitely improbable Where there is life circumstances exist which make them the rule Anyone conversant with work in animal metabolism can supply many illustrations, for instance, it has been shown that in a simple solution of the amino-acid alanine traces of methyl glyoxal occur; in the animal body there is reason for thinking the reaction may become practically quantitative Forces which determine the relative positions of adjacent foreign molecules and so affect their behaviour are something to which there is no analogy in the growth of crystals in a saturated solution

Moreover, if the forces that determine the reproduction of a certain order in the arrangement of the parts of a protein are similar to those that determine the lattice pattern of a crystal, the crystals with which the comparison is made are solid, and life is manifested only in liquid aqueous systems The analogy should rather be with the formation of liquid crystals, a phenomenon that is itself as yet too unfamiliar to shed common light on the obscurity of spontaneous regeneration The ordered disposition of the ultimate components of protoplasmic systems is such as to leave play, generally but little checked, for the fluid properties of water, and in some modified degree, too, of molecules and ions dissolved in water Even a solid jelly may include within its protein framework a hundred times its weight of water in which diffusion is free to take place almost as if the framework were not there, and protoplasm, with commonly twenty times as much protein in it as this, more often resembles a fluid of varying viscosity than a solid gel, which means that the great protein chains float and drift in the whirlpool of kinetic agitation, observing, it may be, so far as is possible, certain unstable relations to their kind, but with no rigid fixity It is commonly felt that the behaviour of unicellular organisms makes the hypothesis necessary that there is an insoluble surface layer that keeps the watery contents of the cell from dispersing in the water that surrounds it Much experimentation, and no lack of speculation, has not made clear what the nature and structure of this limiting layer is It may be that the flexible cohesion at many alternative points between clinging floating chains of amino-acids, the innermost of which are made fast to the nucleus, may go some way to maintain the identity of the cell and prevent its contents from scattering

Chemical Meaning of Material Life

But in the chemical make-up of protoplasm, proteins, the most abundant component, are not the only ones that are necessary Pre-eminent among the others are the nucleic acids When we consider what has been learnt of the behaviour and of the chemical composition of the nuclear chromosomes, and that according to Steudel's reckoning the nucleic acids form 40 per cent of the solid components of these chromosomes, into which are packed from the beginning all that pre-ordains, if not our fate and fortunes, at least our bodily characteristics down to the colour of our eyelashes, it becomes a question whether the virtues of nucleic acids may not rival those of amino-acid chains in their vital importance From Steudel's figures it can be reckoned that there are about half a million molecules of nucleic acid in a single sperm cell of the species with which he was working.

And in addition to nucleic acids there are also strange compounds of higher fatty acids containing suspiciously significant groups, identical in their general character with those found also in nucleic acid—namely, phosphoric acid, organic bases, and sugar; and besides these there are the mysterious sterols All of these are frankly insoluble in water, and yet have in some part of their composition features that make them not indifferent to water or even to the molcules and ions that exist in true solution, in the liquid state, within the cell The physical condition of these insoluble substances in the aqueous system of the cell is still little understood All that can be said with certainty is that they must modify its homogeneity even more than the long floating chains of amino-acids, however much these may be linked together one with another If the characteristic behaviour of living matter is rightly regarded as due to the order that it introduces into the movements and spatial relationships of foreign molecules in its vicinity, then these insoluble components may well be expected to play a leading rôle by forming films and surfaces that permeate its texture and delimit its parts

Such an analysis of the chemical meaning of material life viewed in the light of scientific facts has to be largely an exercise of the imagination, but it may present itself as an intellectual necessity If it is right to regard the power of spontaneous self-regeneration as the distinctive property of living matter, it is not intellectually possible to be content with a phrase and dismiss it A phrase is itself an image, and an image, however shadowy, has parts and dimensions Those who feel it an intellectual necessity to explore unexplored lands cannot procure maps, but that does not justify their setting out with no forethought or reasoned plans

The beginning of life if it is an intellectual necessity to trace this, would thus appear to have been in the coming together of atoms of certain elements in such a pattern that this power in its simplest form resulted from its design Some might call this event fortuitous, others the predictable outcome of the inherent properties of those elements the inevitable operation in the course of time of the laws of chance Those who call it fortuitous may go so far as to regard the whole history of life as fortuitous, and give priority to the concurrence of the atoms over the properties and functions that are revealed by the concurrence The others may look on life as the fulfilment of the destiny of these elements, and give priority to the potential properties of matter over the concurrence which was no more than their epiphany.

SURVIVAL POWER OF CERTAIN ATOMIC GROUPINGS

If this analysis is approved and the distinctive property of living matter, the power of self-regeneration, depends upon the power of limiting the movements and directing and controlling the spatial relations of surrounding molecules so as to modify their chemical behaviour, it is the exercise of this same power that leads to the formation of substances such as starch glycogen and fats ; and in so far as such substances contribute to the regeneration of the living matter, the power of forming them contributes to its survival Where energy is necessary for such synthetic rearrangements of adjacent matter—where, that is, the rearrangement involves coercion of atoms into positions of strain in which they have the potential energy of position which we call chemical energy—this energy may be derived from the radiant energy of the sun or from the combination of oxygen with adjacent organic matter In the latter case the combination is again a manifestation of the power of ordering the disposition of surrounding molecules and directing their movements so that they behave as in other circumstances they would be but little prone to do The energy so liberated, besides contributing to the formation of new living matter or of the material to be used in its formation, may serve in other ways to promote the processes by which life is maintained. It may accelerate them by imparting increased kinetic activity or rise of temperature, or may bring about movements that are resisted by external forces, and so enable the living system to do work.

This is all merely a restatement of the commonplaces of biology necessary only as part of the attempt to correlate them physiologically with the fundamental property of that which is alive to regenerate itself at the expense of material that is not alive This faculty implies the power of introducing order into the chaotic movements of adjacent matter in conformity with patterns that it possesses It is a faculty resident in material that is capable of incalculable variation The number of permutations of its parts that are possible without affecting the results of such analysis as is practicable defies calculation Their calculation, were it possible, would lead to figures that are so large as to mean no more than the dimensions of the universe Some of these permutations confer synthetic powers which others do not When they appear, are they not what biologists call for short mutations ? But when they appear, if they retain the power of self-regeneration, and if they minister to its maintenance, they will ipso facto survive For whatever promotes persistence of this power must itself survive

A disposition of matter in molecules or aggregates, unstable and incalculably variable, that has and retains the power of determining the disposition of matter not yet so disposed in such a way as to conform to its own disposition or to patterns which help it to exercise this power is all that must be premised for the whole of evolution to follow. Variations that do not or cease to contribute to the retention of this power do not survive The condition of survival is ministration to self-regeneration, that is to the maintenance of life

Before the days of vertebrates, in pre-Silurian time, an unstable variation in the disposition of atoms and organic combinations of atoms occurred in certain types that was mainly protein in character, a protein to the making of which little short of 200 amino-acid links must contribute Coupled to this protein, which probably is not the same in all species of animals in which it is found, is another group containing iron that is probably always the same This group is of remarkable nature, and is closely related to one that occurs in the far older substance chlorophyll This complex substance hæmoglobin had the power of attaching to itself two atoms of oxygen for each atom of iron that it contained in such a way that it could be readily detached and made available for effecting oxidations. Such was the service that this variation rendered that it is safe to say that without it there could be no vertebrate creation It is this service that has made it possible for it to survive to this day, when in the human species alone it is being produced at the rate of about 10,000 tons a day. The story of the service of chlorophyll would, of course, be more remarkable than this

Natural selection applies to the survival of the chemical forms of living matter as it does to complex living organisms These forms, infinitely protean in their variety, survive and persist in so far and so long as they minister to its self-regeneration It is the principle of survival by service Function alone gives permanence to structure Structure without design is a pathological excrescence that has in itself the seeds of its own destruction. What does not minister to self-regeneration has no enduring share in life, for self-regeneration is the key to life

Why is it that what may be termed official physiology takes so little cognisance of the doctrine of evolution ? These branches of biological study appear to follow courses so exactly parallel that they never meet

The doctrine of evolution digs down into the foundations of scientific philosophy. If a physiologist addressing physiologists ventures to say anything on this subject of supreme appeal to all biologists it must be in exaltation of the work of those who have approached it from the morphological side, and it may be in hopeful anticipation of the ultimate share in the elucidation of some of its problems to be borne by physiology

PROPERTIES AND BEHAVIOUR OF CELLS

On the part that function plays in the determination of structure it is to be supposed that physiology will ultimately, at any rate, have something more to say. May I submit to the consideration of physiologists certain points in the physiological development of the machinary of the body where, unless I am mistaken, it is possible to detect the operation of function in determining the design of the machine ? The properties and behaviour of cells result from the properties and behaviour of the material composing them. When a muscle cell contracts this is, in general terms, a reversible rearrangement of its parts in response to some alteration in the distribution of forces within or about it due to a disturbance from without. Such reversible reaction to adequate disturbance is a property common in the material of which living cells are composed. In addition to this reversible type of reaction there are irreversible reactions which are characteristic of other kinds of cells, and it is what we call connective-tissue cells that I would ask you to consider There are several kinds of connective-tissue cells, but they are alike in that they produce and discharge into their vicinity material of a characteristic composition ; in some of the commonest this material is chemically collagen, the substance out of which gelatin can be obtained In course of time these cells come to be embedded in the material which *they deposit about themselves* and so form one kind of connective tissue Cells capable of behaving in this way are found however, which have not yet exercised their faculty, these fibroblasts are then undifferentiated wandering cells that have found no abiding place in the community in which they have their birth What it is that makes them settle down and start producing the material in which they come to be embedded has never yet been determined. But the most striking structures to which they give rise are the tendons and aponeuroses that make the muscles fast to the bones, and the ligaments that bind the bones to one another The material that they deposit is composed of inextensible fibres that lie in the case of tendons, at any rate so exactly and exclusively in the line of the resultant of the tensions set up in the muscle to which they attach themselves, that it is difficult to believe that the disturbance which starts them producing their characteristic secretion is anything else than the pull exerted on them by the muscle-fibres to which they are attached, the recurring external disturbances that produce reversible states of tension in the muscle, indirectly producing in them an irreversible reaction, which consists in the discharge of material that by its inextensibility can transmit the tension along the line of the force that provokes its deposition In their simplest form cells of this kind deposit the wavy fibres in areolar tissue which, when straightened out under the action of a displacing force, set a limit by their inextensibility to the dislocation of the part first affected, and so distribute the action of the displacing force over surrounding areas It is interesting to note that the origin of cells of this kind has been traced to the mesothelium cells that line tissue spaces and serous cavities, the clefts that make the gliding displacements of parts over one another possible The deposition of fibrous material seems here, as in the tendons and ligaments to be the result of reaction to the recurring disturbances set up by displacements, such, for instance, as those of the lungs, the alimentary tract, the heart and pulsating vessels, and the deposition occurs in the line of strains set up by the displacing forces The service rendered by this behaviour of the cells is that the fibres which they deposit, in virtue of their inextensibility, limit the extent of displacement at any one point by distributing it to surrounding parts

The other component of areolar tissue, the elastic fibres, is similarly produced by other cells These fibres take a straight course between their attachments, displacements in the line of their deposition are rendered possible by their stretching, and are recovered from by their elasticity

The contribution made by such cells to the fabric of the body appears to result from the recurring operation of disturbances, to which they react by depositing fibres along the lines of disturbance

FORMATION OF THE SKELETON

More striking are the properties of cells upon which the formation of the skeleton depends The cells that make bone not only secrete fibrous collagen, they also encrust the fibres with insoluble lime salts, and it has long been subject of comment that the rigid bone that results always comes to lie in the line of prevailing strains and stresses The analysis of the structure, for instance, of the head and neck of the human femur, by Wolff and others who have followed him, shows how strictly this is true Calculations prove that no particle of bone lies anywhere but where the strains dictate We can predict with certainty it seems, that it will be found that bone cells are composed of material that in reacting to physical forces directs, in constant relation to the line of action of those forces, the deposition of the substances which make up this connective tissue Bone can only arise where strains and stresses set up this reaction, and the greater the strain or stress the denser the deposit When a bone is fractured many bone cells are dislodged, and in the abundance of nutriment that ruptured vessels supply, these cells released from their imprisonment, multiply At first the force of gravity and the twitching of muscles acting on the soft semi-fluid tissues between the broken ends of the bone supply stimuli that are indeterminate in direction, and such reaction as occurs results only in the formation of loosely ordered calcareous fibres, but even this soft callus gives some degree of rigidity, sufficient to restrict the strains gradually to more and more clearly defined lines along which in proportion a stronger reaction can take place Once it is established that bone corpuscles react to strain and stress by discharging collagen, the intimate spatial disposition of which, as well as of the lime salts with which it comes to be encrusted is determined by the directing forces to which it is exposed, and once it is recognised that the law of spontaneous regeneration requires that this reaction will persist in proportion to the prevalence of these forces, not only must the gradual replacement of callus by appropriate permanent bone necessarily follow, bone in which no particle persists except it be in the line of constantly recurring stress and strain, but it will also necessarily follow that the position of every spicule of bone in the skeleton, cancellous or compact, is the expression of a physiological reaction to the forces of gravity and muscular tension The evolution of the machinary of the connective tissues seems to be not entirely the result of natural selection and the survival of individuals in which this machinery chanced to be of appropriate design The appearance in early vertebrates of the material that is characteristic of the bone corpuscle seems to have ensured that skeletons would take a shape determined by the direction of the forces to which these corpuscles were exposed, and that the formation of this skeleton is as much a reaction to recurring stimuli as are the reflexes, composite movements and postures characteristic for the species

This conception of the way in which the vertebrate connective tissues take their shape transfers a large share of the development of the bodily form back into the nervous system, in which the machinery is stored that directs and determines the habitual movements and postures that in reaction to external disturbances are specific A physiological account of the evolution of the nervous system, one certainly that is based on the chemical constitution and chemical behaviour of its component parts, must seem almost infinitely remote from practical investigation But the work of Pavlov has made one thing clear, that by a physiological reaction in it machinery may come into existence which did not exist before The repeated occurrence of a disturbance at times that are uniformly related to the normal operation of existing machinery results in the acquirement of a new reaction which must require machinery that is new It is rendered probable, if not proved, that this new machinery is situated in what may be called the growing point of the central nervous system, the cortex of the cerebral hemispheres, the part where all is not cut and dry, where cells retain more of the properties of the developing neuroblasts, the properties that enable them to grow out through the embryonic tissues along courses that make it certain that the maturing organism will behave in a manner true to type In the formation of a conditioned reflex two events are made to occur in the cerebral cortex at times which are uniformly related to one another, one of these events, from the constitution of the nervous system, necessarily results in a certain activity of some muscle or gland, the other has been hitherto in no way related to such a result; after many repetitions of the association of these events it is found that that one which previously had never resulted in this particular activity, comes to have this result as certainly as the other

The sight and smell of food in any hungry animal results in the secretion of saliva because the cells to which the effect of these visual and olfactory stimuli is referred are anatomically connected with cells that set the salivary gland in action, the cells on which some particular sound takes effect are not anatomically connected with them and this particular sound has therefore no effect upon them But with the establishment of the conditioned reflex the anatomical connexion comes into existence As a result of a functional reaction of nerve cells to disturbances in other nerve cells with which they were not previously anatomically connected, a structure appears which is indistinguishable so long as it lasts from the structures that constitute any other reflex arc. The conditions that determine its persistence or effacement have been, and are being, studied as thoroughly as were those which allow it to appear. The outcome of these studies must be of incalculable importance in evolutional physiology. They are being watched with the keenest interest doubtless by all biologists, but more especially by those who believe that physiology has to take a much bigger part in the solution of some of the fundamental difficulties of biological science than it has been able to take in the past.

EVOLUTIONAL HISTORY OF LIFE.

But if and when it is possible to trace the origin of structures to functional reactions of cells and to reactions that depend upon the chemical properties of the cell substance; and if and when this is possible not only in the connective tissues, but also in the nervous system, the functions of which have so controlling an influence on the operation of every part of the body; until it becomes clear that the results of changes in such influence reappear in succeeding generations, the study of functions can have no bearing upon the ultimate problem of biology, the evolutional history of life upon the earth. Pavlov communicated to the last International Congress of Physiology in 1923 some results of experiments that he had done upon this subject which, when confirmed, would electrify the atmosphere. Conditioned reflexes that are established only after many—80 or 100—repetitions of the associated stimulus, in each succeeding generation require fewer and fewer repetitions and in the fourth may be established after only four. In April of this year he wrote to say that owing to other work he had not been able to give the necessary time to confirmation of these results. We are content to wait.

In the great question whether characteristics developed in the life of an individual have any influence on descendants, experimental evidence must come slowly. In what is called parallel induction a step has been taken which is probably of greater importance than is generally conceded. External influences that affect the bodily characteristics of an organism affect also the germ plasm in such a way that these characteristics appear in the first, and even in a less degree, in the second generation, born after the external influences have ceased to operate. While such experiments furnish evidence only of a temporary change in the properties of the germ plasm, one that may be put down to the lodgment in it of unassimilated foreign matter that is gradually eliminated, the fact that the eternal germ plasm has been shown to be subject to temporal influences must not be belittled. A true mutation is not eternal. Our descendants may be able to dispense with hæmoglobin. Whether the hereditary melanism that in certain moths it is said can be induced by food infected with manganese is something more than such parallel induction, I hope there may be some present who can say.

Physiological inquiry is a stream that has many sources; its waters gather from quarters far removed from one another. A marvellous meeting took place in the early years of this century when the forgotten experiments of Mendel came to the surface again, and found corroboration in the cytological studies that from about the same time had pursued their slow obstructed way above ground in the endeavour to elucidate the changes in the nucleus of maturing germ cells. In a resting germ cell the chromosomes form an even number, characteristic for the species; they consist of half that number of pairs of homologues, one of each pair descended from the paternal element in the last zygosis, the other from the maternal. At one of the cell divisions by which the germ cell gives rise to the mature gamete, with half the characteristic number of chromosomes, there occurs a segregation of the two members of each pair so that they pass into different gametes; the exact cytological equivalent of Mendelian segregation of allelomorphic pairs of characters. To-day the study of genetics and of the topographical anatomy of the chromosomes, with its groupings and crossings over,' seems to call out for chemical assistance. It may be that in the lifetime of some of us those confluent streams of thought and experiment are to be joined by yet another that rises in the vast remote, and, as it must appear to some, muddy swamps of physiological chemistry; and it then, forgetting its 'foiled, circuitous wanderings," will form with them a 'majestic river, brimming and bright and large.'

A STUDY OF
SPRUE AND ADDISONIAN ANÆMIA.

By H. B. NEWHAM, C.M.G., M.D. DURH.,
M.R.C.P. LOND.,
LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE;
AND
R. M. MORRIS, M.B., B.S. LOND.,
LATE HOUSE PHYSICIAN, HOSPITAL FOR TROPICAL DISEASES.
WITH CONCLUSIONS BY
P. H. MANSON-BAHR, D.S.O., M.D. CAMB.,
F.R.C.P. LOND.,
PHYSICIAN, HOSPITAL FOR TROPICAL DISEASES.

IN the present study an attempt is made to emphasise some points in connexion with sprue with reference to Addisonian anæmia, as it is felt that the differential diagnosis is often a difficult matter in individual cases.

The subject is treated from two points of view: that of the clinician, and secondly, of the hæmatologist. From the clinical aspect sprue presents certain cardinal features, described by Low[1] thus: "loss of weight, diarrhœa with white frothy stools, tongue and mouth lesions, anæmia, and shrinkage of the liver," but it is in only a proportion of cases that all these points are manifest.

Three groups of cases may be distinguished: (A) With marked gastro-intestinal and mouth symptoms but without noteworthy anæmia. (B) With gastro-intestinal and mouth symptoms and accompanied by definite anæmia. (C) With recurrent attacks of mild gastro-intestinal or mouth symptoms and severe anæmia. This group is somewhat small and is more or less confined to chronic cases in older patients.

In the present paper it is not intended to deal with Group (C).

In order to arrive at the approximate number of cases falling into Groups (A) and (B), 90 cases of sprue have been taken, all treated in the Hospital for Tropical Diseases, London, between the years 1920–25. Of these, it is found that 45 presented a blood count of less than 4,000,000 red corpuscles and can therefore be included in Group (B).

It is interesting to note the remark of Gulland and Goodall[2] when discussing Addisonian anæmia: "Diarrhœa may be the main symptom and we have seen cases in which the diagnosis of . . . sprue . . . had been made before the blood was examined." This illustrates the difficulty but does not give the solution. There are several points in common between the two diseases, especially in the type of Addisonian anæmia with alimentary symptoms.

Ætiology.

In both diseases a causative agent has been incriminated, in neither is its guilt proven. In both it is thought primarily to attack the alimentary canal.

The *sex-incidence* in Addisonian anæmia is given as 2 males : 1 female (Thursfield,[3] Tidy[4])—in the present series of 90 cases of sprue 59 were males and 31 females—thus giving approximately a ratio of 2 : 1. This ratio is not absolutely trustworthy, as the accommodation for female patients during half the period under review was extremely limited. The general impression gained is that females predominate.

The *age-incidence* of sprue, males show an average age at onset 42 years (extremes 22 and 68) and females 40 years (extremes 20 and 62); again these figures compare closely with those usually accepted as obtaining in Addisonian anæmia

The occurrence of *familial or hereditary cases* in Addison's anæmia has lately attracted much attention (Hurst),[5] and in sprue Manson-Bahr[6] quotes cases in husband and wife, whilst in the present series is a severe case of sprue occurring in a man, whose mother had died of sprue in India some years previously

A striking difference between the two diseases is seen when the *geographical distribution* is considered Addison's anæmia has a world-wide sway, whilst sprue is peculiarly limited to certain areas

The 90 cases under review reveal the following India (46), South China (15), Malaya and Ceylon (7 each), Burma and the Philippines (2 each), and Brazil, Nicaragua, Palestine, and the West Indies (1 each), as well as a remainder of 7 seamen who have spent much time in Far Eastern seas The length of residence in these areas varied from 19 months to 48 years In 10 cases the disease did not develop until the return of the patient to this country It is extremely doubtful whether sprue ever occurs indigenously in Great Britain

Whilst sprue is fairly frequently seen, it is necessary to sound a warning against too readily diagnosing it in anæmic patients with diarrhœa on their return from the tropics, who may be cases of true Addisonian anæmia

Wherein, then, lie the distinguishing features? Taking the 45 cases showing anæmia, the differences may be given under the headings of (1) type of onset, (2) symptoms and physical signs, (3) course of the disease

Type of Onset

In Addisonian anæmia, the onset is notoriously insidious, but in 19 of the sprue cases it was sudden, in 7 of these occurring in the course of some other condition—viz, pregnancy or puerperium 4, dengue 2, acute intestinal amœbiasis 1 When coming under observation the disease had been in progress for periods from two weeks to seven years

Symptoms and Physical Signs

The outstanding symptom of sprue—diarrhœa—was present in all the 45 cases, and at some stage of the disease could be accurately described as consisting of copious, white, frothy, liquid, or partially liquid, stools, having a characteristic odour, sour and disagreeable There is a marked tendency for this to occur in the morning, but in a few cases it was limited to the afternoon The number of stools per day ranged from 1 to 12

Cabot[7] states that diarrhœa was present in 60 per cent of his American cases of Addison's anæmia, but gives no details as to the character of the stools Gulland and Goodall[8] speak of "chrome yellow diarrhœa," whilst Schneider[9] has been at great pains to demonstrate the increase in pigments in both fæces and urine in Addisonian anæmia In a somewhat limited experience of the latter disease, we do not recall a case showing stools in any way resembling sprue

Of the *sore mouth and tongue*—present in 38 of these cases—it is necessary to treat in greater detail, owing to the prominence given to this feature in Addisonian anæmia by Hunter, to the extent of suggesting an alteration of terminology[10]

This authority describes numerous cases of Addisonian anæmia with glossitis[11] from which may be quoted —

1 In early stage "great tenderness on mastication when hot foods are taken Tongue raw and flabby red and fiery with smooth patches" Lesions "extending to anterior pillar of fauces" Six months later "tongue free from papillæ . fiery redness inflamed vesicles"

2 "Small round vesicles on edges of tongue, &c, leaving whitish spots with a zone of congestion"

3 "Tongue raw and fissured a deeply drilled-out ulcer on tongue"

The points he appears to stress are the extreme redness of the tongue before the anæmia becomes too severe, the occurrence of glossitis in the *early* stages and the remarkable periodicity (Fig 1)

Carnegie-Brown[12] states that the earliest change in acute cases of sprue is a diffuse inflammation, especially involving the fungiform papillæ, with the occurrence of yellow vesicles—aphthæ—in crops at irregular periods and spontaneously subsiding Later changes destroy the filiform papillæ giving the appearance of prominent bright red swollen fungiform papillæ on a smooth glazed tongue Should the disease be further prolonged, even these papillæ are involved and appear as if shaved off and have a glazed flat surface (Fig 2) Cracks and fissures make their appearance and, with the recurring crops of aphthæ, complete the picture Dutch authors—De Langen and Lichtenstein[13]—in their account are in close agreement with this In our cases examples of practically all these stages were noted

In distribution the lesions included the tongue, particularly the tip and sides, the floor of the mouth, the buccal mucosa, the pillars of the fauces, and the uvula Favourite sites are the inner aspect of the lower lip and the vicinity of the lingual frenum

The aphthæ characteristically occur in crops Each crop usually consists of many aphthæ, but may be represented by a single aphtha only In one case 41 vesicles were present at the same time, and in others with sore mouths no definite vesicles were ever seen In size they varied from less than pin-head to ¼ in in diameter After lasting from one to seven days they disappeared, but in one severe case rupture of the vesicles produced several ragged superficial ulcers up to ¼ in in diameter In some the tongue was pale and thin, with glazed areas and with a tenderness out of all proportion to the slight degree of excoriation patchily present, but in these a lens often showed the flattened fungiform papillæ in large numbers These same papillæ were more often to be seen with the naked eye as prominent hyperæmic and swollen red dots on the surrounding pale expanse. In no case could the tongue have been described as "fiery red" The relation of the sore tongue to the diarrhœa is not easily made out—in some cases the two symptoms definitely alternated, in others the severest phases of each coincided

From this it will be seen that the phenomena cannot be used in a differential diagnosis We recall Hunter's own warning[14] that the glossitis he describes is only specific when accompanied by a "definite clinical picture of Addisonian anæmia"

Abdominal flatulence, especially severe before the bowels are opened, is a most distressing symptom in sprue, and occurs with a frequency—40 cases in 45—quite unknown in Addison's anæmia, similarly *œsophageal pain*, or a pain referred to the mid-sternal line brought on by swallowing even fluids (16 cases), is rare in the other disease, although Hunter[15] refers to a similar pain in a case of Addisonian anæmia It is presumably due to the extension of the oral condition down the alimentary tract

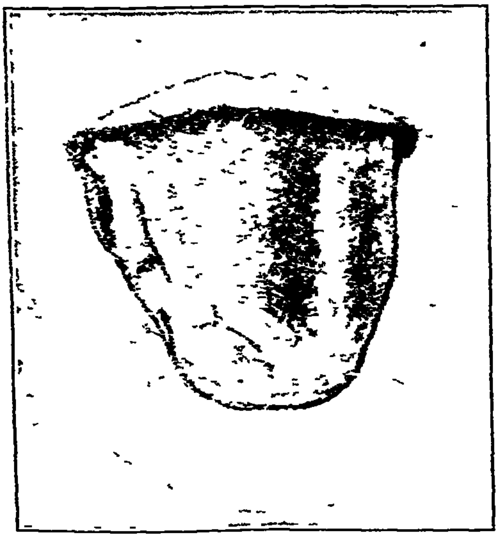
Vomiting (11 cases) and *anorexia* (10 cases) are present in sprue, but are perhaps more common in Addison's anæmia, which also applies to *loss of energy* (8 cases) as a prominent symptom

Alteration of temperament is not frequently noticed in Addison's anæmia, but no less than 12 cases of the present series themselves complained of their increasing irritability and unreasonableness and in the majority of the others their friends had made similar observations This change is often *most* apparent, and the return of good humour may be used as an index of a return to better health

Sensations of *cramps* in the lower limb muscles (6 cases) may be complained of in both diseases and are probably the result of anæmia *per se*, but of an essentially different character is the occasional appearance of *tetany* (3 cases) This probably *does* not occur in Addisonian anæmia *Loss of weight* was apparent in 43 out of the 45 cases and is a most valuable distinguishing feature, especially in its severity—a loss of 2 to 4 st. in weight in less than one year being not uncommonly recorded On an average in a moderate case with anæmia it may be given as about 1 st. should treatment have been delayed for as long as six months. It is this feature which is responsible for the emaciated appearance of so many of the patients, and provides a guiding contrast to the plump sufferer from Addison's anæmia Pari passu the *skin* seldom (2 cases in 45) shows any tendency to lemon tinting, but is more characteristically dry and wrinkled, with a dull, earthy tinge like that of chronic intestinal stasis.

Pyrexia occurs (10 cases) in sprue as in other severe anæmias. It may reach 103° F and be distinctly prolonged. The *abdomen* in sprue at once attracts attention the wall is invariably thin and often distended with especial prominence in the sub-umbilical area. Percussion gives a tympanitic note well into the flanks The tenuity of the wall may be such that peristalsis becomes visible (7 cases) Rogers [16] states that the liver may be enlarged in the early stage and that it then shrinks, but by the time the patients were seen this initial enlargement was not found, not even in a case with acute onset two weeks before

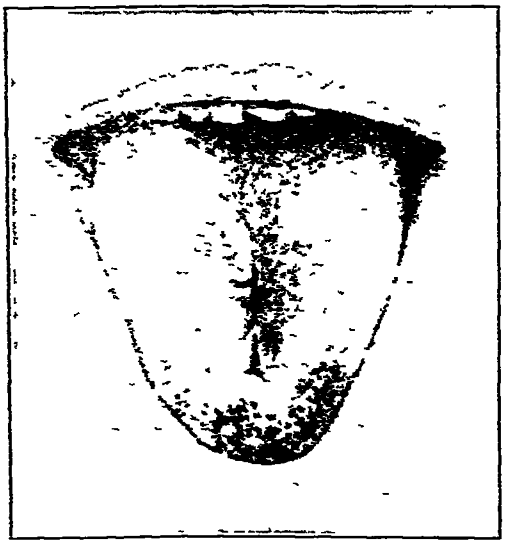
FIG 1.



[*Philip Manson-Bahr pinx.*

The primary glossitis of Addisonian anæmia Note the general destruction of papillæ, the raw surface on the dorsum of the tongue The general glossy appearance and the superficial fissuring at the periphery of the organ.

FIG 2



[*Philip Manson-Bahr pinx.*

The primary glossitis of acute sprue Note the aphthous ulceration at the tip of the organ, the atrophy of the filiform papillæ in the immediate vicinity, and the inflammation of the fungiform papillæ. There is superficial central fissuring.

In no less than 40 of our cases, the *liver dullness* as measured in the right mammary line was definitely diminished Cabot [17] notes enlargement of the liver in 35 per cent. of his cases of Addison's anæmia but does not mention diminution in size. The same authority notes enlargement of the spleen in 27 per cent. of Addison's anæmia. In no case of sprue was this feature found, except temporarily in one undergoing treatment, when a relapse of benign tertian malaria occurred as a complication The cardiovascular system presents the features to be expected in a severe anæmia—poor cardiac sounds hæmic murmurs and a low blood pressure Organic disease of the central nervous system, such as subacute combined degeneration, is as yet unknown in sprue. With reference to sprue de Langen and Lichtenstein [18] state there is no typical picture of gastric function; sometimes normal free acid is present, sometimes hyperchlorhydria or again achlorhydria Fractional test-meals in five of the cases under review yielded achlorhydria in two hypochlorhydria in two, and hyperchlorhydria in one—this latter without other demonstrable cause It is almost superfluous to recall the practically invariable achlorhydria of Addison's anæmia.

Course of the Disease.

In Addison's anæmia repeated and superficially complete remissions have always been accepted as characteristic; such peculiar periods of freedom from symptoms were apparent in 22 out of our 45 cases of sprue usually, but not always, after strict dietetic treatment. The length of the remission varied from three months to ten years—in this latter case "reinfection" may have occurred as the whole period was spent in India. The importance of the correct diagnosis is manifest when the question of therapeusis is considered In Addison's anæmia, arsenic, usually given by the mouth is our sheet-anchor with the acid treatment (Hurst) [19] as an adjuvant: in sprue, of the former all observers agree on its harmful effects, and of the latter, no one has produced any evidence of its efficacy In both diseases blood transfusion is valuable, and its benefits are certainly more likely to be permanent in sprue.

Prognosis

This is a difficult topic as it is not now possible to trace most of the cases of this series. Seven of these died the rest left hospital considerably improved and in most instances free of symptoms with regained weight—in one case 3 st. in 12 weeks' treatment. Seven of these last are known to be still free of any signs or symptom of sprue after a period of two and a half years. In a few others the disease, whilst not eradicated is under control and causes no trouble

The Blood in Sprue.

The degree of anæmia associated with sprue may vary very considerably in different cases. One may have a very severe degree of anæmia where the symptoms of the disease in the alimentary system are not very severe On the other hand the most marked alimentary disturbance may be associated with only a moderate amount of anæmia. Generally speaking, however, in the majority of cases of severe sprue, and especially if it has been of considerable duration the anæmia is grave.

Of 12 cases of well-marked sprue (7 male and 5 female) which have recently been under treatment at the Hospital for Tropical Diseases and whose blood has been closely studied, the accompanying table (I) shows the main points in the composition of the blood when first coming under our care The duration of the disease is reckoned from the onset of symptoms to the date of admission to this hospital The differential count is based on a count of 500 leucocytes, and the percentage of hæmoglobin has been estimated by Van Slyke's gasometric method

The blood picture associated with the anæmia of sprue has been described by various authorities as being very similar to that obtaining in Addisonian anæmia Thus Nolen[20] states that it is sometimes impossible to distinguish sprue from Addisonian anæmia In some of his cases of sprue he found the complete blood picture of Addisonian anæmia, in others only the high colour-index

Manson-Bahr[21] and Low[22] also quote cases of sprue with blood pictures similar to Addisonian anæmia This is borne out by the figures in the chart, especially the commonly high colour-index, the leucopenia, relative lymphocytosis, presence of nucleated red cells (the number quoted is that obtained in doing a differential count of 500 leucocytes), and the marked anisocytosis and poikilocytosis

Just as these more marked features vary considerably in cases of true Addisonian anæmia so similar variation is to be noted in cases of sprue anæmia As regards colour-index, all of our cases, with the exception of two, give a figure exceeding 1 0, the highest figure recorded being 1 44 Of the two instances in which a figure below 1 0 has been recorded Case 6 shows only a very moderate degree of anæmia, but in Case 11 a most profound degree of anæmia is present but with a low colour-index Just as in true Addisonian anæmia a high colour-index is the general rule, well authenticated cases of that disease have been observed in which an index below 1 0 was obtained

So in the anæmia of sprue, when well marked, it is usual to get a figure of more than 1 0 Still, cases do occur from time to time even when the anæmia is profound when a figure below 1 0 is found Leucopenia to a greater or less extent seems to be a very common feature of sprue anæmia, and this decrease in the white cells seems to run more or less pari passu with the decrease in the red cells Relative lymphocytosis appears to be a common feature in sprue anæmia as in Addisonian anæmia

TABLE I —SHOWING THE CONDITION OF THE BLOOD IN 12 CASES OF SPRUE

Case No	Date in 1925	Duration of disease	Hæmoglobin (Van Slyke) per cent	Red cells per c mm	Colour-index	Leucocytes per c.mm	Lymphocytes per cent	Large mononuclear per cent	Polymorphonuclear per cent	Eosinophiles per cent	Nucleated red cells per 500 leucocytes	Anisocytosis	Poikilocytosis
1	25/6	4 y	40 7	1,620,000	1 2	4000	52	1 0	46	1 0	2 normo 2 megalo	+ + +	+ + +
2	30/10	9 m	86	3,900,000	1 1	6000	45 6	4 4	40	10	Nil	+	—
3	9/11	8 m	85 6	3,700,000	1 16	7000	30	1 0	68	1 0	Nil	+ +	—
4	19/5	4 y.	62	2,150,000	1 44	3000	44	8·0	47	1 0	2 normo 3 megalo	+ +	+ +
5	16/11	5 y	23 8	1,100,000	1 08	4000	36	5 0	59	—	1 normo 1 micro	+ +	+ + +
6	7/12	8 m	78 5	4,000,000	0 98	6000	33	3 0	64	—	1 normo	+ +	+ −
7	14/12	8 m	94 6	3,730,000	1 3	6000	37	2 8	60	0 2	1 ,,	+ +	+
8	17/12	3 y	92 8	3,500,000	1 3	6000	48 4	3 6	42 6	5 4	2 megalo	+ + +	+
9	25/6	5 y	75 5	2,920,000	1 3	4800	56	8 0	34	2 0	2 ,,	+ +	+ −
10	13/10	6 m	30 0	1,100,000	1 4	4000	50	1·0	49	—	1 ,,	+ + +	+ +
11	21/10	8 m	15 0	1,000,000	0 75	3400	79	—	21	—	2	+ + +	− + +
12	25/5	7 m	66 5	2,470,000	1 4	5000	49	4 0	45	2·0	Nil	+ + +	+ +

m =Months y =Years

Remarks —CASE 2 Patient had slight ankylostomiasis CASES 10 and 11 Hæmoglobin estimated by Talquist's scale Died a few days later

Progress of the Anæmia

The course of the anæmia appears to depend on the response to treatment of the sprue condition If by suitable dietetic measures the alimentary disturbance is improved, so the degree of anæmia will be lessened, and in many cases of severe sprue with a profound degree of anæmia in which the patient makes a good response to sprue treatment the improvement in the anæmia is both marked and rapid One of our cases, who on admission had a red cell count of 1,620,000 and hæmoglobin 40 7 per cent., six weeks later showed an improvement to 4,000,000 red cells and 80 per cent hæmoglobin on dietetic treatment alone

It is realised that an improvement in the blood condition comparable to this may occasionally be seen in cases of true Addisonian anæmia but is by no means of common occurrence More commonly the blood will improve slowly up to a moderate degree, and either remain at that stage or more usually relapse again Moreover, the relapses in Addisonian anæmia are commonly rapid in their onset, whereas in the anæmia accompanying sprue, if relapse occurs, it is gradual, and accompanied by a recrudescence of the sprue symptoms, the anæmia gradually increasing as the sprue manifestations become more severe

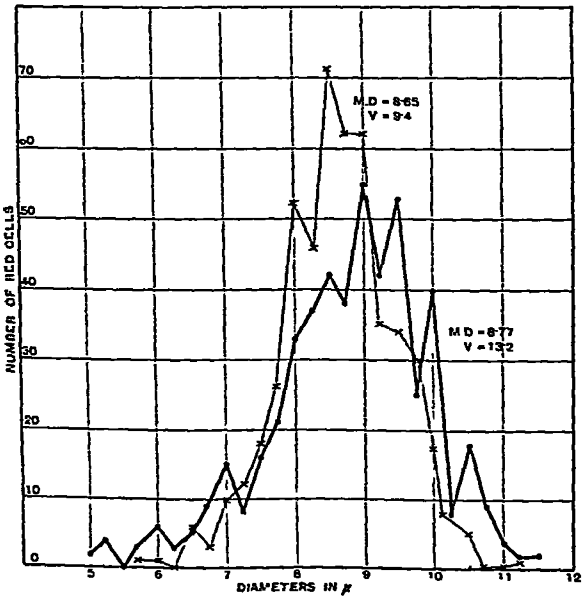
Scott has recorded two cases[27] in which sprue patients died of Addisonian anæmia, so that both diseases can apparently occur concurrently

Price-Jones Curves

Price-Jones's graphic method of recording the size of the red blood corpuscles has proved of marked value in the study of cases of Addisonian anæmia He has shown that by accurately measuring 500 red blood cells, and charting the number of each size, the size being shown horizontally and the number vertically, a curve can be obtained which differs very markedly whether normal blood, Addisonian anæmia blood, or blood showing secondary anæmia be studied In normal blood the variation in the size of the cells is not very marked, and a uniform curve is obtained with a sharp peak and with a narrow base In the case of Addisonian anæmia the whole curve moves to the right, is very irregular, and has a wide base, owing to the marked variation in the size of the individual cells On the other hand, the curve obtained with blood from a case of secondary anæmia more closely approximates to that of normal blood, but the base of the curve is usually somewhat wider and there is a "shift to the left" of the peak of the curve We have applied Price-Jones method to our study of the anæmia associated with sprue in ten of our cases, basing our results on an accurate measurement of 500 red cells in each instance In only three instances of these ten cases are curves obtained approximating to those seen in Addisonian anæmia, but even these do not exhibit the marked irregularity and widely extended base of the curves in Addisonian anæmia A chart is appended showing the curve obtained in Case 1 (Fig 3)

In the chart of this case two curves are superimposed The one was made when the red cell count was 2 600,000 per c mm and the second when this had risen to 4,100,000 It will be seen that a definite change in the character of the chart has taken place, a "shift to the left" of the highest peak having occurred, whilst the base has contracted somewhat and the whole curve becomes more regular

FIG. 3



M.D =Mean diameter V =Coefficient of variation.

Hurst[24] states that the characteristic curve of Addisonian anæmia is seen in that disease even before the patient is markedly anæmic and also during remissions, and in the figure he publishes (from Shackle and Hampson[25]) in which two curves from the same patient at intervals are shown, in both instances the curves have the characteristic irregular outline and broad base It would appear, therefore, that although in the anæmia of sprue the Price-Jones curves obtained in the severer cases approximate to those seen in cases of Addisonian anæmia the degree of variation in size of the red cells in the former disease is not spread over so wide a range, and the base of the curve tends therefore to be somewhat more restricted than in the latter condition

Cholesterol Content of Blood

It has been noted by several observers, notably Bloor,[26] Myers,[27] Pacini,[28] &c, that the cholesterol content of the blood is distinctly lowered in cases of anæmia and various analyses have been made of the cholesterol content of the blood in Addisonian anæmia, but we have not come across any similar figures for the anæmia accompanying many cases of sprue

It was considered worth while, therefore, to carry out a series of analyses on some of our cases of sprue, and the results are appended in the accompanying Table II

There appears to be some divergence of opinion as to the cholesterol content of normal blood Myers[29] gives it at about 0 160–0 180 per cent, whilst Bloor[30] gives somewhat higher figures In an investigation of the cholesterol content of the blood of seven healthy adult men which we carried out, we found that the figures for the cholesterol content of the plasma varied between 0 200 and 0 140 per cent., giving an average of 0 192 per cent, whilst for the washed corpuscles the figures varied between 0 155 and 0 122 per cent with an average of 0 140 per cent. Grigaut,[31] in an analysis of the blood of four normal individuals, gives an average of 0 171 per cent for plasma and 0 140 per cent. for corpuscles In all our investigations on the cholesterol content of blood Myer's method of chloroform extraction with subsequent Lieberman-Burchard colour development and estimation by the colorimeter was employed.

We have in all carried out cholesterol estimations in 11 of our cases of sprue anæmia (Table II)

It will be seen that in all the cases of anæmia accompanying sprue there is a definite hypocholesterolæmia especially well marked in several cases, and that the degree of such hypocholesterolæmia seems to bear little or no relationship to the degree of anæmia present Myers, in an analysis of two cases of Addisonian anæmia by his method, gives figures of 0 065 and 0 065 for plasma and 0 12 and 0 13 for washed corpuscles It is thus apparent that no distinction can be drawn between Addisonian anæmia and the anæmia of sprue based on cholesterol content of the blood

TABLE II.

Case	Red cells per c mm	Hæmoglobin per cent	Cholesterol.	
			Plasma per cent	Corpuscles per cent
1	1,620,000	40 7	0 150	0 113
2	3,900,000	86·0	0 177	0 044
3	3,700,000	85 6	0 060	0 066
4	2,150,000	62 0	0 116	0 136
5	1,100,000	24 0	0 037	0 150
6	4,000,000	78 5	0 153	0 125
7	3,730,000	94 6	0 093	0 103
8	3,500,000	92 8	0·066	0 065
9	2,920,000	75 0	0 160	0 144
12	2,470,000	66 5	0 136	0 113

Blood Group

Hunter,[32] in his observations on 42 cases of Addisonian anæmia under his care, investigated the blood groups of 38 of his patients and found that of these individuals 34 belonged to Type II., 3 were of Type IV, and 1 of Type III These figures are according to the Moss classification and show a marked predominance of Type II individuals, but whether or no any significance should be attached to this large number of Type II cases was not determined In 9 of our cases of sprue the blood group was determined, 6 of these (4 men and 2 women) came under Group IV, 1 male belonged to Group I, 1 female to Group II, and 1 man to Group III The great majority of our cases, therefore, came under Group IV but the total number of cases is much too small to warrant any deductions being drawn

Van den Bergh's Reaction.

It is generally conceded that in the acute cases of Addisonian anæmia the application of Van den Bergh's reaction to the blood serum almost invariably gives a positive indirect reaction, but that in the well-marked remissions in this disease this reaction may become very poorly marked or even disappear to reappear on the occurrence of a relapse. In 7 of our cases of sprue (3 men and 4 women) this reaction was carried out, and all but one showed a positive indirect reaction The strength of the reaction seemed to depend on the degree of anæmia present, those cases with a very marked degree of anæmia giving a well-marked reaction, whilst those with only a moderate loss of red cells only displayed a very feeble reaction It would appear, therefore, that the anæmia of sprue follows closely in this respect the behaviour of Addisonian anæmia blood.

Conclusions

1. Sprue and Addisonian anæmia are two distinct clinical entities; though having several features in common we think they are produced by two definite and distinct ætiological agents.

2 Sprue is definitely a disease of the tropics, in some way connected with the exposure of susceptible individuals to a condition, or conditions, inseparable from life in a tropical climate, but it is probable that these conditions are more effective in some tropical countries than in others, and in some such manner we may explain the absence of indigenous sprue from Central Africa Addisonian anæmia, on the other hand, has a cosmopolitan distribution

3 The typical anæmia which accompanies these two diseases is almost identical, but this feature alone does not indicate a similar, or even allied, ætiology

4. Addisonian anæmia is generally a fatal disease, though it may run a prolonged course, sprue is by no means so That in the latter absolute recovery can ensue is a matter of common knowledge The facts assembled in this paper suggest to us (*a*) That the sprue anæmia is secondary to the gastro-intestinal lesions (*b*) In Addisonian anæmia, the anæmia is due to disease of the blood-forming organs so that recovery is not dependent on the processes of digestion and assimilation; the glossitis and gastro-intestinal symptoms appear to be secondary to, or to follow on, the primary anæmia (*c*) In sprue assimilation of food is fundamentally affected, with the production of great emaciation and loss of body-fat in which all organs, especially the liver, take part and which is dependent upon, and associated with, the excretion of one-quarter (it may be) of the food taken by the mouth; consequently, the excretion of large, fatty, and colourless stools constitute a feature which is pathognomonic of sprue (*d*) In Addisonian anæmia assimilation of food is not affected to the same degree, emaciation is, therefore, not a feature; an increase of body-fat may actually accrue, there is no wasting of the internal organs, the stools are of normal size and appear to contain the normal amount of pigment (*e*) The toxin of Addisonian anæmia has a most definite selective action upon the peripheral nerves and central nervous system, with the production of neuritis and of spinal sclerosis, features which, in our experience, are not found associated with the anæmia of sprue

We desire to tender our grateful thanks to Dr G C Low for permission to study the records of his cases and for facilities granted to investigate the blood of patients under his care in the Hospital for Tropical Diseases

References

1 Low, G C Price's System of Medicine, 1922, p 537
2 Gulland, G L, and Goodall, A The Blood, 3rd ed, 1925, p 140
3 Thursfield, H Price's System of Medicine, 1922, p 660
4 Tidy, H L Synopsis of Medicine, 1925, p 614
5 Hurst, A Brit Med. Jour, 1924, i, 96
6 Manson-Bahr, P H Byam and Archibald's Practice of Medicine in the Tropics, 1923, iii, 2255
7 Cabot, H Osler and Macrae's System of Medicine, 2nd ed, iv, 630
8 Gulland, G L, and Goodall, A Loc cit, p 140
9 Schneider Jour Amer Med Assoc, lxxiv, 1762 et seq
10 Hunter, W Brit Med Jour, 1922, i, 422
11 Hunter, W Severest Anæmias, 1909, i, 121–124
12 Carnegie-Brown, W. Sprue and its Treatment, 1908, p 2264
13 De Langen and Lichtenstein Leerboek der Tropische Geneeskunde, 1923, p 343
14 Hunter, W Brit Med Jour, 1924, i, 550
15 Hunter, W Ibid, 1922, i, 422, Case 25
16 Rogers, L Bowel Diseases of the Tropics, 1921, p 455
17 Cabot, H Loc cit, p 634
18 De Langen and Lichtenstein Loc cit, p 345
19 Hurst, A Brit Med Jour, 1924, i, 99
20 Nolen Nederl. Tijdsch v Geneesk, 1918, Dl 2, 1515
21 Manson-Bahr, P H Article on Sprue in Byam and Archibald's Practice of Medicine in the Tropics
22 Low, G C Jour of Tropical Medicine and Hygiene, May 1st, 1912, p 129
23 Scott, H H Brit Med Jour, 1924, ii, 305
24 Hurst, A Loc cit
25 Shackle and Hampson Guy's Hospital Reports, 1924, lxxiv, 193
26 Bloor Jour of Biological Chemistry, 1916, xxv, 577
27 Myers Practical Chemical Analysis of the Blood
28 Pacini American Medicine, 1918, xxiv, 92
29 Myers Loc cit
30 Bloor Loc cit
31 Grigaut Cholesterine et Cholesterinemie, Biol Medical, 1913, xi, 89–126
32 Hunter Jour Amer Med Assoc Sept 12th, 1925, p 849

ELONGATION OF THE PELVIC COLON AND ITS SURGICAL TREATMENT

BY E. G. SLESINGER, O B E, M S LOND, F R C S ENG,
ASSISTANT SURGEON, GUY'S HOSPITAL.

THE pelvic colon varies in length between considerable limits in perfectly healthy individuals, and is relatively much longer in the infant than in the adult The following remarks are therefore not intended to suggest that elongation of the pelvic colon necessarily results in the production of symptoms, but rather to point out that in certain cases such elongation produces results sufficiently severe to call for relief, and to indicate an operative procedure which, in the four cases cited, has been followed by satisfactory results It would seem probable that this measure is indicated in a considerable proportion of cases of constipation of a certain type or, at any rate, deserves consideration as an alternative to prolonged and not invariably successful medical treatment

In the normal individual the rectum does not ordinarily contain fæces, which are prevented from entering it partly by the tonicity of the pelvi-rectal sphincter and partly, or perhaps mainly, by the angulation between the pelvic colon and the rectum—the pelvi-rectal flexure As the pelvic colon fills with fæces, which it does from below upwards, it rises into the abdomen and straightens out the pelvi-rectal flexure, allowing fæces to enter the first part of the rectum and so setting in train the defæcation reflex

It appears probable that in cases where the pelvic colon is elongated, either as a congenital abnormality or as a result of prolonged constipation of a type to be presently discussed, as fæcal material accumulates in this coil of bowel it no longer straightens out the pelvi-rectal flexure, partly because of its length, and partly because, being seldom completely evacuated, fæces no longer accumulate from the distal end Efforts to evacuate this loaded loop will tend to increase the flexure by driving the pelvic colon farther into the pelvis, with consequent increasing constipation

Sir Arbuthnot Lane has for many years pointed out that the normal reaction of the body to the presence of a constipated, loaded colon is the development of avascular bands on the surface of the outer side of the mesentery, whose function it is to support the loaded portion of the intestine and to take the strain off the sensitive mesentery. The first situation in which such bands develop is on the outer side of the iliac and pelvic colons, and in the first instance their function is beneficial They are a reaction to the assumption of the erect posture, and prevent the constipated pelvic colon from prolapsing into the pelvis Over-development of these bands is, however, exceedingly common, and if this occurs they become attached to the bowel at its anti-mesenteric border, and, by producing torsion in its long axis, lead to obstruction to the passage of its contents

"The Last Kink"

Under these conditions Lane has termed the pelvic bands the "last kink" In the presence of a well-developed "last kink" it is unusual, as one would expect, to find a very long pelvic colon, since the presence of the "kink" prevents the elongation of the bowel In certain cases, however, where the "last kink" is not well developed, and in some in which it has not formed at all, the stagnation of fæces in the pelvic colon results in marked elongation of this part of the bowel The more it becomes elongated the greater is the difficulty in emptying it, and a vicious circle results In these cases, and in the far less common ones in which the pelvic colon is congenitally elongated, it appears a rational procedure to remove the redundant bowel and to restore the colon to its normal condition, in which there is only a small reservoir between the iliac colon and the rectum By this means the pelvi-rectal flexure becomes readily opened out, since there

is no longer a loaded loop to be forced into the pelvis, and at the same time the general systemic effects of the accumulation of fæces are overcome After the operation it is well to attach the fascia of the outer side of the posterior abdominal wall to the mesentery in imitation of Nature's " last kink " to prevent subsequent strain upon it The operation that has been done is to expose the pelvic colon through a left paramedian incision and, having estimated the length of bowel to be removed, to resect it between clamps, placing the clamps obliquely, sloping from the mesenteric border away from each other in order to provide a wider surface for the junction

An end-to-end union is then made and the hole in the mesentery is repaired A Lane's colectomy tube, which is a large œsophageal tube with terminal and lateral eyes, is passed up the rectum by an assistant and is manipulated by the operator through the junction until its end is well up in the descending colon The tube is fixed by a stitch at the anus and, by preventing tension at the suture line for the first five or six days, adds very greatly to the safety of the operation If there is no development of the " last kink," a broad strip of fascia may be attached to the outer side of the mesentery proximal to the bowel to support it

There appears to be no tendency to stricture after this operation, even in young children, and in one child X rays taken three years after operation showed no sign of the anastomosis

Four Cases Related

CASE 1 —F S W , female, aged 7½, was seen on March 11th, 1921, with a history of continuous medical treatment under many physicians for the previous four years for " abdominal attacks " On inquiry it appeared that she was always constipated, but that the constipation was much more obstinate at times During these exacerbations she had pyrexia and headache and suffered from severe attacks of urticaria and asthma On three occasions she had had bleeding from the bowel The stools are foul, frothy, and undigested between the attacks, and after them are very hard During the attacks enemata are often without result, and the child states that she feels " something move inside " when she is at last able to have an evacuation

X ray examination by Dr N Mutch showed the cæcum, ascending, transverse, and descending colons to be normal, the pelvic colon was very dilated and elongated, forming a loop reaching well above the umbilicus There was a controlling appendix. On March 30th the appendix was removed and the redundant pelvic colon was resected, a tube being passed up through the anastomosis and left in for five days Copious liquid paraffin was given to keep the motion fluid The child left the nursing home on the twenty-first day with her bowels acting daily without purges

Dr Greenwood, of Ripon, who is now her doctor, has kindly allowed me to quote his letter —" The child has only occasionally complained of a transient pain in the umbilical region, relieved by a hot-water bottle or a dose of paraffin. She has a daily action of the bowels without any difficulty, taking liquid paraffin if there is any tendency to constipation, which seldom occurs She has no pyrexia, urticaria, or asthma, and is normal in weight and size. Mentally she is alert and normal, though somewhat childish for her age Her headmistress says that her age is mentally 11 (actual age 12¼) "

CASE 2 —P K , male, aged 7, seen in November, 1922, with Dr L. Mandel, under whose care he had been for some time He complained of pains in the stomach, legs and feet, and constipation, which was more severe than usual at times and was associated with considerable pyrexia and with attacks of urticaria, especially of the face He had previously been in one hospital with a diagnosis of ? Hirschsprung's disease, ? diverticulitis , at another hospital it was suggested that he might have a serous exudate into his bowel, in association with the urticaria, giving symptoms of intestinal obstruction He was very backward for his age and undergrown Dr Mandel treated him medically for eighteen months with repeated enemata and wash-outs of various kinds without improvement He was given paraffin, phenolphthalein and numerous purgatives, and a course of thyroid and pituitary extracts with no result X ray examination showed some delay in emptying the cæcum and marked elongation of the pelvic colon

All other measures having failed, it was decided after consultation to explore the abdomen The pelvic colon was found extremely long and thickened, and the redundant portion was excised with end to-end union A tube was passed up the rectum and through the anastomosis Recovery was uneventful The patient has had no further attacks of pyrexia and urticaria and usually his bowels are opened daily with a small dose of liquid paraffin About one year after operation he had one attack of constipation, but without pyrexia, which yielded to enemata given daily for a few days Otherwise he has remained perfectly well, and mentally and physically he is now a normal child for his age

The urticaria, asthma, and pyrexia in the first case, and the urticaria and pyrexia in the second would appear to be anaphylactic phenomena associated with the retention of fæces, and cleared up with remarkable rapidity after excision of the long pelvic colon and the abolition of the consequent stagnation of intestinal contents

CASE 3 —E B , female, aged 39, a nurse, was under the care of Dr N Mutch, and gave the following history Two years previously she had had an attack of acute obstruction, which was relieved without operation A year later she had severe attacks of abdominal pain with vomiting and the passage of blood and mucus per rectum. She also had great abdominal distension after taking any solid food She was operated on for " adhesions " in the spring of 1923 This improved her for a few months, after which her symptoms returned On admission she had continual aching pain in the abdomen with severe attacks at times She passed very little blood and an occasional mucus cast Her bowels had not acted without enemata for some months. Tenderness in the abdomen was most marked in the left iliac fossa X ray examination showed the pelvic colon to be very much elongated and thrown into a large loop While in hospital it was found impossible to discontinue the daily wash-outs without pain and distension following She passed casts while in hospital of from 1 to 3 feet in length

On June 26th, 1924, the abdomen was opened through a left paramedian incision, and the pelvic colon was found to be greatly elongated About 8 inches of redundant bowel was removed and an end-to-end anastomosis was made A tube was passed up the rectum through the junction.

She left hospital in a month free from pain and with the bowels acting normally Early in 1925 this patient had acute abdominal pain in the region of the incision and was re-operated on, adhesions to the scar being freed This relieved her at once, and since then she has remained well with the bowels acting normally

CASE 4 —H M R , male, aged 38, was admitted with abdominal pain Ten years ago he had a first attack of severe constipation, associated with abdominal pain, which was worse after food, and vomiting This condition recurred at intervals with intervals of freedom from symptoms Nine months ago he began to have severe colicky pains limited to the left iliac fossa and associated with complete constipation This type of trouble has been occurring at intervals ever since There has been no hæmatemesis or melæna He has lost 6 lb in weight in the last nine months X ray examination with a barium enema showed marked elongation of the pelvic colon, but no evidence of dilatation or obstruction

The abdomen was explored on Jan. 29th, 1926 the possibility of malignant disease of the colon being seriously entertained There was no growth, and no evidence of any gastric or duodenal ulcer The pelvic colon was much elongated, and the redundant portion, 10 inches, was removed with subsequent end-to-end anastomosis A tube was passed up the rectum through the anastomosis The patient left hospital on the eighteenth day, with the bowels acting normally and quite free from pain, and he has remained so since

Conclusions

Elongation of the pelvic colon would appear to be the determining factor of a group of somewhat severe symptoms in certain cases In the two children (Cases 1 and 2) the picture in each case is sufficiently similar to suggest a definite syndrome, the association of constipation occurring in attacks and accompanied by pyrexia, with urticaria and other anaphylactic phenomena, being very striking X ray evidence of elongation of the pelvic colon in such cases should bring the question of operation under consideration, since in both these cases prolonged medical treatment in expert hands had completely failed

Resection of the redundant pelvic colon does not appear to be associated with any considerable risk, provided a large tube is passed through the anastomosis and left in place for five days

The results of this operation in the four cases in which it has so far been performed have been satisfactory

⁂ Since the above was written the operation has been performed in a further adult case with satisfactory results

OBSERVATIONS ON CLIMATIC BUBO.

By H M HANSCHELL, D S C, L R C P, M R C S, D T M & Hy Camb,
HON MED SUPT AND M O IN CHARGE V D CLINIC, SEAMEN'S HOSPITAL, ROYAL ALBERT DOCK, LONDON

Among the seafarers of every nationality, race, religion, and colour who seek treatment at the Seamen's Hospital, "climatic bubo" is not a very rare complaint This note embodies the writer's observation of the condition in the West Indies and tropical Africa, and in patients at the hospital since January, 1919 The disease has not yet been reported in women

Diagnosis

Diagnosis depends on —

1 Inguinal adenitis and periadenitis

2 Absence of known more or less common lesions about the genital and anal area, such as primary syphilitic and chancroid ulcers, purulent balanitis, pediculosis, scabies, gonorrhœa, herpes genitalis, granuloma pudendi, and filariasis It must be remembered that inguinal adenitis may follow on chancroid ulcers, or a primary syphiloma, several weeks after these latter have healed, the blood should therefore be tested for Wassermann reaction A critical inspection of the genital apparatus and area, and the anal area, is necessary In two cases of climatic bubo where infection had apparently been acquired in coitus, respectively three and four weeks previously, I observed, besides some subacute balanitis, a few pin-head size shallow ulcers in the post-coronal sulcus of the glans penis These had healed completely 24 hours after swabbing with methylated (90 per cent) spirit

3 *Fever* —This may be absent when the case is first seen , it may develop later, or a history of past fever may be obtainable In all my cases it has been present at some stage of the disease Quite a small degree of adenitis and periadenitis, with no reddening of skin, may be accompanied by protracted irregular fever, though the temperature rarely reaches 103° F

4 A *history* indicating that the condition has developed after coitus in tropics or sub-tropics

One of my patients was a European seafarer, aged 17 years, with climatic bubo Although he had voyaged East, he denied any coitus at all It is possible, and not unlikely, that he spoke truth Climatic bubo, like the other venereal diseases, may possibly be acquired otherwise than in copula Nor, also, is the disease exclusively tropical Another patient, with fever and inguinal adenitis and periadenitis, absence of scars or lesions other than a mild patchy balanitis, and with a negative blood W R , denied any coitus during the previous 18 months except for one five weeks previously in Marseilles, which city marked his nearest and only approach to the tropics Still another patient, in whom climatic bubo was diagnosed on the grounds given above, had not been out of England at all The disease is climatic in the sense of being far more common in warm climates, and the designation "climatic" makes so socially convenient a cover for venereal bubo that it is likely to be retained and even extended It has already replaced "pestis minor"

Circumcision —I have not yet observed the disease in the circumcised The literature on the subject is silent on this point Among the patients attending the V D clinic of the Seamen's Hospital are many Indian "lascars" They are all Mahommedan and circumcised, with a genital area clean shaven They show their due proportion of inguinal buboes following chancroids or scabies of the genital area None has yet been found with climatic bubo In contrast, climatic bubo has been seen not rarely in the prepuce-bearing European, Chinaman, and negro, and in the uncircumcised Christian Indian, who provides a very small quota among the Indian seafarers treated at the hospital French observers in North Africa report the condition as one peculiar to the European Presumably the indigenous population is Mahommedan and Jew, and therefore circumcised

Organisms —I have detected no organisms by microscopic examination in the juice aspirated from unincised or unbroken inguinal glands, nor in sections of these glands have I found any organisms or any constant histological differences distinguishing the morbid changes from those seen in the inflamed glands resulting from scabies of the genital area, or ulcus molle

Treatment

In all cases the patient should be put to bed, whether fever be present or not Incision of the lesion leads inevitably to secondary infection with pyogenic organisms, to more incisions, and a great prolongation of the illness and incapacity If glands are excised, the large gape left in the groin becomes secondarily infected, and takes many weeks to heal

It is usually found that all the glands (not only the superficial group) are affected and thorough surgery therefore tries to extirpate them all One possible, and undesirable, result of this is shown by the following experience I had myself practised incision and excision until January, 1919, when I was shown by Dr G C Low a male European with elephantiasis of penis and one leg, and a splendid scar in each groin The elephantiasis had gradually developed during three years following surgical operation for climatic buboes in both groins At that time I had under my care a case of gonococcal urethritis and arthritis, with tender inguinal adenitis Intravenous injection of killed typhoid bacilli (in this case for the arthritis) had been followed by rapid disappearance of the inguinal adenitis

With this last case, and the picture of elephantiasis, fresh in mind, when a case of climatic bubo came under my care a few days later it was treated by intravenous injection of killed typhoid bacilli with the prompt vanishing of fever and quick decrease of the inguinal adenitis Since that date I have used this treatment in all cases of climatic bubo (and in many cases of ulcus molle buboes) with unfailing good results After the patient has been put to bed the glans penis and preputial sac should be thoroughly swabbed with methylated (90 per cent) spirit One such cleansing is sufficient to cure the mild degree of balanitis I have always found to be present Some of the cases have already suffered incision of the inguinal nodes or these have ruptured through the skin In consequence, secondary pyogenic infection has occurred All undermined overhanging inflamed skin should be cut away flush with the surrounding skin under local anæsthesia, and wet eusol dressings applied In these cases also, suppurating tracks debouching on to the surface should be laid open freely, the skin over them cut away, and wet eusol dressings applied No glands need ever be incised or excised If the skin be intact and fluctuation denote presence of pus in probable quantity of one drachm or more, *sterile* aspiration may be carried out—the puncture being sterilely sealed after evacuation If necessary, aspiration is repeated Where pus is suspected and rupture through the skin appears possible, the whole area should be sterilised with tincture of iodine and covered with sterile gauze No other surgical procedure is necessary If no pus be detected, the groins are covered with sterile gauze, over which thermogene wool is lightly bandaged The patient is then given an intravenous injection of killed typhoid bacilli, or a mixture of killed typhoid, paratyphoid A and B, bacilli, whether fever be present or no It has proved safe and effective to begin with 100 million bacilli This dose is followed in one or two hours' time by a rigor and rise of temperature to, it may be, 104° F Where fever is already present there is a rise of not more than 1½ to 2 degrees In a few hours the temperature falls to normal or below, with sweating In many cases this ends the illness There is no return of fever and the lesions in the groins rapidly subside If the patient be allowed up too soon there may be increase again of adenitis But it is rare for it to be necessary to keep the patient in bed longer than 14 days In some cases, however, the injection may have to be repeated in four or five days' time, and even a third time, with increasing doses, 150 million and 300 million I have not yet seen a case require more than three injections This treatment has converted what was very often a long, painful incapacitating illness, troublesome to the medical attendant, into a comparatively simple illness of one to three weeks' duration

My own experience has been entirely confirmed by the subsequent experience of Dr G C Low and Dr P H Manson-Bahr at the Hospital for Tropical Diseases in London

THE INTELLIGENCE OF CRIMINALS

By H A GRIERSON, M B, B S Lond,
AND
C H L RIXON, M D, M R C S, L R C P, D P M,
MEDICAL OFFICERS, H.M PRISON, BRIXTON

Observations on the intelligence of criminals have been made from time to time in various countries, but as far as the writers are aware no statistical information on the subject has hitherto been collected in this country The medical officers of English prisons make mental examinations of a large number of prisoners every year, but it must be remembered that in the vast majority of those cases the examination is made because there is some ground for suspecting that the prisoner is mentally abnormal Indeed, several hundred prisoners are remanded to this prison every year from the police courts of the metropolis solely in order that such an examination may be made before trial Other observers have given valuable statistics concerning the insane and mentally deficient who, at remand prisons, are thus constantly being weeded out before trial These records, however, give no information concerning those who are not thus eliminated, and it is in the endeavour to estimate the intelligence of those who arouse no suspicion as to their mental equipment—i e, the ordinary prisoner —that this study has been undertaken

For this purpose we have estimated the intelligence of 200 male prisoners, concerning each of whom we have also obtained information upon a number of other matters Since some method of selecting the subjects was necessary, the plan was adopted of taking the owner of the bottom name on each page of the Reception Register, in which the name of every man is entered at the time of his reception into prison It was thought advisable to exclude from the investigation prisoners committed for contempt of court, as these can hardly be considered in the same class as criminals It was foreseen that difficulty might arise from the inclusion of elderly prisoners, since the estimation of their intelligence is complicated by premature senile changes, which are apt to occur somewhat earlier in the class from which the majority of prisoners are recruited than it is in the higher social strata The effects of alcoholism and syphilis are also liable to upset calculations For these reasons it was thought wise not to include prisoners over 35 years of age If, therefore, the bottom name on any page of the Reception Register was that of a prisoner who had been committed for contempt of court, or was over 35 years of age, or had been remanded for mental examination the name above was taken

From each one of the prisoners thus selected a number of particulars were obtained, and his intelligence was then estimated by the Terman scale

The average mental age of the 200 prisoners was exactly 14 years, the individual mental ages being spread over a fairly wide range At the lowest end of the scale was a prisoner, charged with a trifling offence whose mental age was only 5–6 years He was actually 32 years old according to his own statements, but these were quite unreliable, and he had no relatives or friends who could give information about him He gave a history of having reached Standard II at school when 14 years old He made a precarious living by buying and selling small quantities of flowers, and his condition although doubtless congenital, had probably been aggravated by privation, as he was seldom able to afford accommodation in lodging-houses or a sufficiency of food He was extremely thin, and weighed only 7½ stone Although this prisoner was not remanded for the purpose of mental examination it was obviously right to inform the court of his condition This was done, and upon his reappearance there he was certified under the Mental Deficiency Act

At the other end of the scale were four prisoners, each of whom had a mental age of 19½ years—the highest that can be scored on the Terman scale—and they were plainly men of high mental ability. One, charged with burglary, was acquitted, but, as he had already been convicted of burglary on two previous occasions, his predilections were evidently similar to those of the other three, who were severally convicted of stealing machinery, of breaking into a church and stealing, and of being a suspected person Between these extremes all gradations of intelligence were found

Of the 200 prisoners examined, 181 were convicted One was found to be insane, and upon his reappearance at court was accordingly discharged to the Poor-law infirmary; one, as mentioned above, was found to be mentally deficient, and was certified as such; and 17 were acquitted The fact of acquittal must not, however, be regarded as evidence of a blameless past, for of the 17 so dealt with eight shared between them no less than 29 former convictions, so that these may fairly be considered to represent a similar class of persons to the 181 who were sentenced

Average mental ages associated with the various kinds of crime		Incidence of the different kinds of crime in 200 cases
Crimes	Years and months	
Fraud False pretences Forgery	15/2	17
Breaking and entering Burglary	14/5	32
Receiving Stealing	14/1	93
Crimes of violence	14	17
Suspected persons	13/10	22
Rape and sexual offences	12/4	8
Miscellaneous	13/3	11

The numbers examined are too small to warrant any hard-and-fast conclusions, but it is interesting to observe the relatively high intelligence displayed by the fraud and forgery group

The examination of these cases has again illustrated two points which are familiar to all who make frequent use of mental tests The first of these is that the standard of scholastic attainment is worthless as a guide to intelligence Thus, a youth charged with stealing jewellery had only reached Standard III. at school, but his mental age was $14\,^{5}/_{12}$ years Another, charged with rape, who had been in Standard ex-VII, had a mental age of 12 Both were subsequently convicted

The second point is the close correlation between the estimation of the intelligence by the vocabulary test alone with that obtained by using the entire series of tests The average mental age of the whole series measured by either of the methods, is exactly 14

Probably the most interesting figure which emerges from this study is the average mental age of 14 years No statistics are available, as far as we are aware, of the average mental age of the population as a whole: it would probably prove to be no higher than this, and many competent observers think it would be lower

The view that a man who takes to crime is, by that fact to be adjudged intellectually inferior to the righteous receives no support from these figures On the contrary they confirm the view generally held by those who have had experience of the criminal, that his intelligence is in no way below that of the "man in the street" He is "the man in the street"

This paper is published by permission of H M Prison Commissioners but it must not be taken as necessarily representing their views

Clinical and Laboratory Notes.

CARCINOMA CUTIS

MULTIPLE SKIN CANCERS OF OCCUPATIONAL ORIGIN

BY W J O'DONOVAN, M D, M R C P LOND,
ASSISTANT PHYSICIAN, SKIN DEPARTMENT, LONDON HOSPITAL

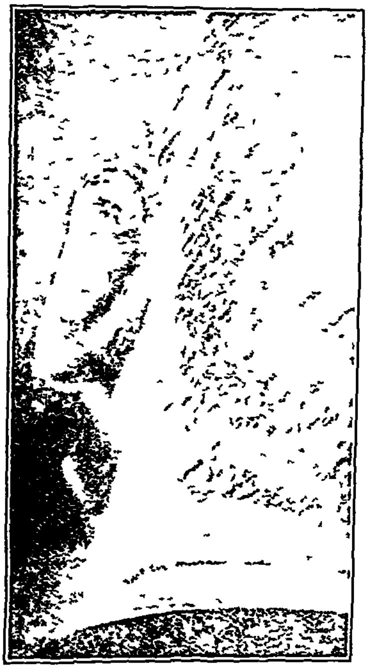
THE patient who is the subject of this report first attended the London Hospital in 1918 and has been under continuous observation since that date

History of the Case

The patient is now (1926) aged 55 He states that he has worked as a gunsmith for 30 years, and throughout this time he has always done the same class of work—i e, examining the component parts of old and rusty rifles and reconditioning them and in so doing has handled a vice, files, scrapers, and gauges Iron dust and rust is scattered on to his hands, face, and neck, in his work his clothes become oily all over, even to his shirt The chief oils used are Rangoon oil, paraffin oil, and some vaseline, but mostly the first From time to time he has suggested that his trouble might be due to this work, but has no knowledge of any fellow employee similarly affected

In 1914 a particle of steel entered his right eye, and it has been blind since He was treated for this at Moorfields and states that a small tumour near the eye was excised at this time In 1918 a "pimple" appeared at the end of his nose, and he was admitted for this into the London Hospital under Mr Souttar About this time he noticed lumps appearing on his skin, at first on his right forearm, then on his right leg then the left arm, and lastly both ears became implicated

FIG 1



"Oil" carcinoma of ear

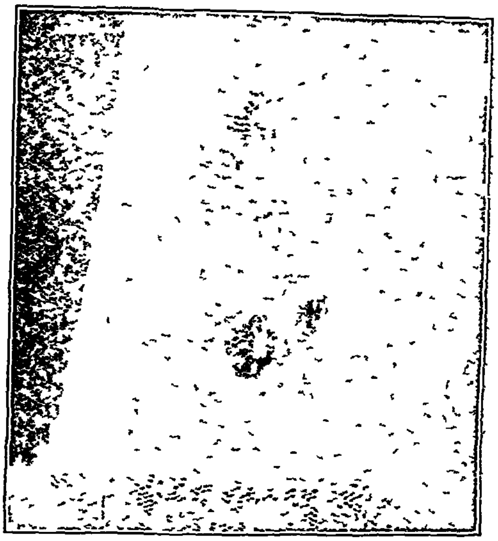
In May, 1923, he was referred to Dr J H Sequeira with a large ulcerated bulbous painful swelling on the tip of his nose The Wassermann was negative, a portion of the growth was removed for microscopical examination, and the pathological report upon it on June 19th, 1923, was "The tumour is a growth of squamous and horny epithelium, the bulk of the epithelial processes having a central cavity lined or filled with horn and so resembling hair follicles The processes are usually well defined by a basal layer, and there is no definite histological evidence of malignancy The growth is, however, so luxuriant, passing deeper into the dermis than the limits of the excision, that it would be advisable to treat it as definitely carcinomatous"

On June 24th, 1923, the growth then being the size of half a crown, he was readmitted and the whole of the growth, with the anterior portion of the nose was removed by Mr Perry The pathological report after the operation was "squamous-celled and horny carcinoma of skin of nose" He was provided with an artificial nose Dec 19th, 1923

Condition on Readmission in 1925

The patient reattended the skin department March 5th, 1925, with multiple cutaneous nodules about 1 cm in diameter on both arms As he had been taking medicine for a chronic cough the possibility of an iodide eruption was first excluded In August, 1925, a new nodule was noted on the left thigh and by December, 1925, nodules had appeared on the left ear, forearm, leg, and groins A nodule excised on Feb 11th, 1926, was submitted to microscopical examination, and the report was "Focal acute purulent and subacute inflammation in squamous and horny carcinoma of skin of inner surface of left thigh" In April of this year a nodule was removed from the right forearm, and the pathological report was "Squamous and horny carcinoma"

FIG 2.



"Oil" carcinomatous ulcers on right leg

In all the patient is certain that 15 separate tumours have been removed from the neck, chin, cheek, thigh, nose, forearm, and chest respectively He is a blonde of medium height with no signs of visceral disease and at present no adenopathy On the left ear is an ulcerated tumour 2 cm in diameter with a raised rolled edge (Fig 1) There is a smaller similar infiltrated ulcer on the antihelix of the right ear There are two similar 2 cm neoplastic ulcers on the right leg (Fig 2) and one on the outer aspect of the left arm one on the right forearm, and three on the scrotum, two of which are pedunculated and one sessile There are many comedones in the skin behind both ears, the patient presents no general nor local pigmentary changes

Comment

Multiple squamous-celled cutaneous carcinomata are much rarer than are multiple rodent ulcers No similar case has been reported in London, nor has any such case been seen previously at the London Hospital. One would have much hesitation in ascribing to this disease an occupational origin were it not for a report[4] of the Departmental Committee appointed to consider evidence as to the occurrence of epitheliomatous ulceration among mule-spinners, published by the Home Office in February, 1926

I have published groups of cases of squamous-celled carcinomata due to other occupational hazards anthracine,[1] tar,[2] and arsenic,[3] in previous issues of the *British Journal of Dermatology and Syphilis* By analogy with these other proved and accepted cases of multiple industrial carcinomata there seems an inherent probability that this case had also an industrial external cause, but before issuing any certificate to this effect both Dr J H Sequeira and myself felt that this case should be shown before our colleagues at the Dermatological Section of the Royal Society of Medicine

In Dr S A Henry's report[4] credit is given to Mr. S R Wilson and Mr A H Southam[5] for calling attention to the occurrence of occupational carcinomata in cotton-mills The Committee were able to trace up to the date of their report 539 cases "The age-period at which the cotton spinners' disease appears to be specially liable to manifest itself reaches its maximum about 55" (The age of the present case) In cotton-spinners as in tar and arsenic workers, the disease does not usually occur until the person affected has been employed for a considerable time. Mineral oils are held responsible and "the average duration of employment for all cases was approximately 41 years." (The present patient has been employed for 27 years.) A wide distribution of growths was noted in mule-spinners as in this case. Dr. Alex. Scott has reported[7] many cases of industrial skin cancer amongst the employees in the Scottish shale oil industry. Other cases of scrotal carcinoma apparently due to work in oil have been reported by foreign writers—Derville and Guermonprez[8] and Ehrlich.[9] In cotton mule-spinners (as in the present case) oil reaches the clothing of the workers, more particularly in the region of the groins, and the report draws attention to the practice of placing oil waste or even an oil-can in the trousers pocket.

It seems proper, then, to report this case as a new industrial hazard due to oil handled outside a refinery and analogous to the cancers found in "mule-spinners," tar-workers, patent fuel manufacturers, paraffin-workers, chimney-sweeps, and arsenical dip manufacturers.

Summary.

1. A case is reported of multiple cutaneous skin carcinomata. 2. The scrotum, face, limbs, and chest are sites of incidence. 3. So far local excision has succeeded, but new growths are appearing. 4. The patient has been employed in contact with mineral oil for 27 years. 5. The nature of the tumours has been demonstrated microscopically four times. 6. Arguments are adduced to establish the occupational cause of this disease. 7. Epitheliomatous ulceration due to mineral oil contracted in a factory or workshop is a notifiable disease by a Home Office Order of Nov. 28th, 1919.

References.—1. O'Donovan, W. J.: Brit. Jour. Dermat. and Syph., 1920, xxxii., 215. 2. Ibid., [illegible] 3. Ibid., [illegible] 4. Report of the Departmental Committee, published by H.M. Stationery Office, 1926, 1s. 5. Southam, A. H., and Wilson, S. R.: Brit. Med. Jour., Nov. 18th, 1922. 6. [illegible] Scientific Report Imperial Cancer Research Fund, 1923, p. 51. 7. [illegible] 8. Derville and Guermonprez: [illegible], 1890. 9. [illegible] Klin. Chirurg., 1915, No. 110, p. 27.

A CASE OF
ACUTE DILATATION OF THE STOMACH
WITH AORTIC SUCCUSSION HEARD AT A DISTANCE OF TWELVE FEET.

By N. W. SNELL, M.B., B.S., M.R.C.P. LOND.,

AND

L. H. SAVIN, M.R.C.S. ENG.,

ASSISTANT MEDICAL OFFICERS TO ST. MARYLEBONE HOSPITAL, W.

On account of the unusual feature of the symptom observed in the following case we have thought it well to record it.

to be enormously distended, reaching well below the umbilicus and far into both flanks. It appeared to contain gas and fluid; and deep palpation revealed that the succussion splashes were being caused by a forcibly pulsating aorta, every beat of which drove the stomach against the anterior abdominal wall. This impact was visible. Rolling the patient on to his side or prone immediately stopped the splashes; but they returned at once on turning him on his back. The patient was retching and vomiting slightly during examination, the vomit being black. His heart was normal in size, position, and rhythm, the pulse-rate being 100. The temperature was 97·2° F.; respirations 22 per minute. There were numerous moist sounds at the lung bases, but no dullness or bronchial breathing. The teeth were carious and gums septic. There was a reducible right inguinal hernia and per rectum no scybalous masses could be felt, although the bowels had not been opened for two days. Although urine had not been passed for a day, the bladder was not distended. Tetany was well marked in the patient, spasms being present in hands and feet. Chvostek's sign was marked, a slight tap with the patella hammer over the facial nerve bringing on active twitching of the facial muscles. Trousseau's sign was present, compression of the forearm accentuating the typical "accoucheur's hand." We had no electrical apparatus handy for Erb's sign.

A diagnosis was made of acute dilatation of the stomach with aortic succussion and tetany. We were very interested in the acoustics of the condition, for though the stomach in these cases always contains gas and liquid, rhythmic loud succussion has apparently been reported only by Lennhardt in 1911. We do not think the loudness of the noise was due merely to excess of gas in the stomach relative to fluid. On first passing the stomach-tube we collected the gas evolved in a jar previously inverted in a basin of water. Only 5 oz. of gas were obtained in a large quantity of vomit. This gas did not burn but supported the combustion of a match.

We treated our patient on the classical lines suggested by Schnitzler in 1895 and independently by Box and Wallace in 1901. The man was put on his face with a pillow under his loins and chest, and the foot of the bed on blocks, thus endeavouring to relieve any obstructive pressure on the duodenum by the stomach or the superior mesenteric vessels. Hilton Fagge, when first describing the disease in 1873, remarked that after the relief of the stomach-tube his patient turned on one side of his own accord. Postural treatment instead of operative (Dorlin, 1918) has reduced the mortality of the disease from 72 to 7 per cent. Secondary lines of treatment adopted were rectal salines to make good the loss of fluid, stomach lavage, and two doses of 1 c.cm. of pituitrin.

By the next morning (Jan. 17th) the patient was much relieved, and by the evening tetany and distension had disappeared. The bowels were open. Urine showed a trace of albumin and the urea-coefficient was 1·7 per cent.

On Jan. 29th X ray examination showed a stomach in normal position, moderately active upon the meal. There was some definite delay in emptying at five and seven hours, and in the latter picture stomach residue was well defined. There was no proper duodenal picture throughout. This suggested the possibility of a pyloric ulcer. There was no occult blood in the fæces.

The patient made an uneventful recovery and was discharged on March 2nd, being instructed to report at intervals, especially if there should be any recrudescence of gastric symptoms.

Clinical and Laboratory Notes.

CARCINOMA CUTIS

MULTIPLE SKIN CANCERS OF OCCUPATIONAL ORIGIN

BY W J O'DONOVAN, M D , M R C P LOND ,
ASSISTANT PHYSICIAN, SKIN DEPARTMENT, LONDON HOSPITAL

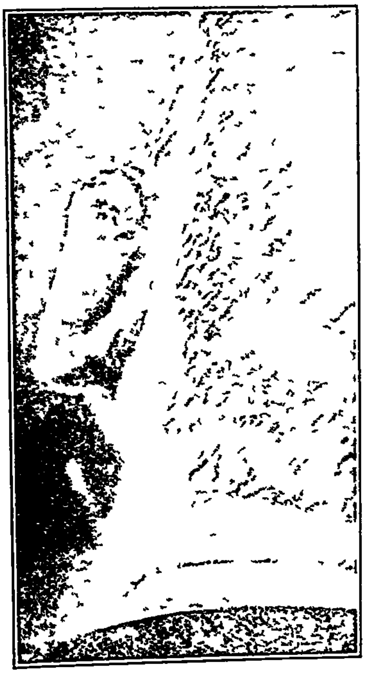
THE patient who is the subject of this report first attended the London Hospital in 1918, and has been under continuous observation since that date

History of the Case

The patient is now (1926) aged 55 He states that he has worked as a gunsmith for 30 years, and throughout this time he has always done the same class of work—i e , examining the component parts of old and rusty rifles and reconditioning them , and in so doing has handled a vice, files, scrapers, and gauges Iron dust and rust is scattered on to his hands, face, and neck , in his work his clothes become oily all over, even to his shirt The chief oils used are Rangoon oil, paraffin oil, and some vaseline, but mostly the first From time to time he has suggested that his trouble might be due to this work, but has no knowledge of any fellow employee similarly affected

In 1914 a particle of steel entered his right eye, and it has been blind since He was treated for this at Moorfields and states that a small tumour near the eye was excised at this time In 1918 a " pimple " appeared at the end of his nose, and he was admitted for this into the London Hospital under Mr Souttar About this time he noticed lumps appearing on his skin, at first on his right forearm, then on his right leg then the left arm, and lastly both ears became implicated

FIG 1



" Oil " carcinoma of ear

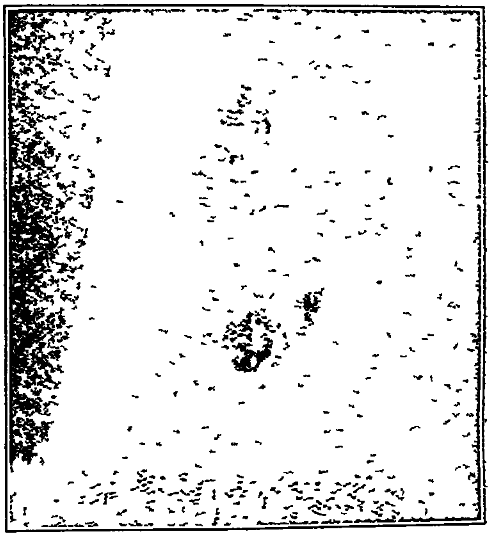
In May, 1923, he was referred to Dr J H Sequeira with a large ulcerated bulbous painful swelling on the tip of his nose The Wassermann was negative, a portion of the growth was removed for microscopical examination, and the pathological report upon it on June 19th, 1923, was "The tumour is a growth of squamous and horny epithelium, the bulk of the epithelial processes having a central cavity lined or filled with horn and so resembling hair follicles The processes are usually well defined by a basal layer, and there is no definite histological evidence of malignancy The growth is, however, so luxuriant, passing deeper into the dermis than the limits of the excision, that it would be advisable to treat it as definitely carcinomatous "

On June 24th, 1923, the growth then being the size of half a crown, he was readmitted and the whole of the growth, with the anterior portion of the nose was removed by Mr Perry The pathological report after the operation was " squamous-celled and horny carcinoma of skin of nose " He was provided with an artificial nose Dec 19th, 1923

Condition on Readmission in 1925

The patient reattended the skin department March 5th, 1925, with multiple cutaneous nodules about 1 cm in diameter on both arms As he had been taking medicine for a chronic cough the possibility of an iodide eruption was first excluded In August, 1925, a new nodule was noted on the left thigh and by December, 1925, nodules had appeared on the left ear, forearm, leg, and groins A nodule excised on Feb 11th, 1926, was submitted to microscopical examination, and the report was " Focal acute purulent and subacute inflammation in squamous and horny carcinoma of skin of inner surface of left thigh " In April of this year a nodule was removed

FIG 2



" Oil " carcinomatous ulcers on right leg

from the right forearm, and the pathological report was " Squamous and horny carcinoma "

In all the patient is certain that 15 separate tumours have been removed from the neck, chin, cheek, thigh, nose, forearm, and chest respectively He is a blonde of medium height with no signs of visceral disease and at present no adenopathy On the left ear is an ulcerated tumour 2 cm in diameter with a raised rolled edge (Fig 1) There is a smaller similar infiltrated ulcer on the antihelix of the right ear There are two similar 2 cm neoplastic ulcers on the right leg (Fig 2) and one on the outer aspect of the left arm one on the right forearm, and three on the scrotum, two of which are pedunculated and one sessile There are many comedones in the skin behind both ears , the patient presents no general nor local pigmentary changes

Comment

Multiple squamous-celled cutaneous carcinomata are much rarer than are multiple rodent ulcers No similar case has been reported in London, nor has any such case been seen previously at the London Hospital. One would have much hesitation in ascribing to this disease an occupational origin were it not for a report[1] of the Departmental Committee appointed to consider evidence as to the occurrence of epitheliomatous ulceration among mule-spinners, published by the Home Office in February, 1926

I have published groups of cases of squamous-celled carcinomata due to other occupational hazards anthracine[1] tar,[2] and arsenic,[3] in previous issues of the *British Journal of Dermatology and Syphilis* By analogy with these other proved and accepted cases of multiple industrial carcinomata there seems an inherent probability that this case had also an industrial external cause, but before issuing any certificate to this effect both Dr J H Sequeira and myself felt that this case should be shown before our colleagues at the Dermatological Section of the Royal Society of Medicine

In Dr S A Henry's report[4] credit is given to Mr. S R Wilson and Mr A H Southam[5] for calling attention to the occurrence of occupational carcinomata in cotton-mills The Committee were able to trace up to the date of their report 539 cases " The age-period at which the cotton spinners' disease appears to be specially liable to manifest itself reaches its maximum about 55 " (The age of the present case) In cotton-spinners, as in tar and arsenic-workers, the disease does not usually occur un [illegible] son

Provided the transfusion was given according to the rule laid down no ill-results followed It was easy experimentally to bring about the death of an animal by transfusing rapidly or by rather slower transfusions, to produce reactions of every degree of severity Death was due to dilatation of the right heart or to pulmonary embolism

Dr E I SPRIGGS (Ruthin) gave some practical details of technique and referred to the advantage of using the sphygmomanometer bag instead of the tourniquet Except in very severe cases it was better not to cut down upon a vein, after dilatation had been produced with the bag the blood could be drawn off with a sharp needle and syringe Where citrated blood was used an induction bag should be employed to supplement the force of gravity If at any time during the transfusion there was clotting of the blood the experiment must be recommenced Dr Spriggs emphasised the importance of blood transfusion as a prophylactic measure against operative shock and also in cases of bowel hæmorrhage secondary hæmorrhage and pernicious anæmia In cases of serious injuries it had been invaluable in preventing subsequent sepsis as was shown during the war It was well to bear in mind that the donors might be suffering from syphilis, and the Wassermann reaction should be tested if this had not been done during the preceding year

Mr GEOFFREY KEYNES (London) said that the growth of blood transfusion as a therapeutic measure had been slow, but it was now recognised as an essential part of surgical treatment The branch of the British Red Cross Society known as the Blood Transfusion Service had done invaluable work in overcoming the difficulty of obtaining suitable donors In surgery transfusion had been chiefly used in gastric and duodenal cases, but many other conditions had also benefited Experience had shown that if transfusion was given purely with a view to replacing blood lost and discouraging further hæmorrhage as in acute ulcer, it should be done without delay Where operation was considered necessary the idea was to give one transfusion a few hours before operation and a second while the operation was actually proceeding

Dr W T. ROWE (Nottingham) reported some encouraging results in the treatment of infective endocarditis, pernicious anæmia, and purpura hæmorrhagica The introduction of cool blood was one of the causes of rigor The patient should be kept thoroughly warm both before and after blood transfusion

Prof. E A. GRAHAM (St Louis, U.S A.) said that blood transfusion was overdone in anæmia, but he was very optimistic about its use in well-selected cases In severe burns transfusion might be useful

Dr ROBERT PLATT (Sheffield) spoke of the good results he had obtained when using defibrinated blood He considered that the method introduced by Colebrook and Storer[1] was just as easy as the citrated method In septic cases he had had fair results and inclined towards an optimistic view.

SIR HUMPHRY ROLLESTON in his reply said that Prof. Cruchet had clearly shown the necessity for slow transfusion Possibly desensitisation took place during transfusion

FRIDAY, JULY 23RD

The third session of this Section was devoted to a discussion on

The Nature of Malignant Neoplasia and the Treatment of this Disease with Lead

Dr J G ADAMI (Liverpool) read a paper by Prof Blair Bell (Liverpool), who was unable to be present owing to illness It was, Prof Bell considered, more essential to discover the nature of the cancerous process itself—the character of the change from normal growth to cancerous development—than to discover the so-called causes which were really predisposing factors There were many extrinsic and intrinsic factors which could produce the pre-cancerous condition in, or in relation to, the cells concerned These included radiation of various kinds, heat, trauma, infection, toxæmias, and senescence, all of which reduced the vitality of the cell It seemed probable that the metabolic disturbance leading to the change might be oxygen starvation The ancestral type to which the cell sought to return in the reversionary process was that of the chorionic epithelium, which had the power to invade and erode blood-vessels in its search for nutriment It might be expected that cells of the chorionic epithelium would resemble malignant cells in structure, function, and chemical composition, and in toxicological affinities The investigation of this working hypothesis undertaken at Liverpool had presented a formidable array of problems In seeking for a therapeutic agent lead was chosen because of its action on chorionic epithelium, but to have found that chorionic epithelium and cancer cells were similar in nature and that lead was specifically toxic to both was not enough The results must be improved and rendered consistent, and patients must be protected against the harmful effects of lead poisoning

Prof W C McC LEWIS (Liverpool) said that cancerous tissues, freshly removed from the body, had a higher electrical conductivity than normal tissues under the same conditions and that this conductivity was higher in peripheral portions of a growth than in the central non-growing portion The increased conductivity necessarily meant that there was increased permeability of membranes or septa in the cells to electrically charged atoms or ions, and these electrical measurements suggested that increased permeability was a definite feature of malignant disease In malignant growths the ratio of lecithin to cholesterol was excessive A similar ratio was found in the chorionic villi and such results were strong evidence of a fundamental similarity between the two types of structure No difference in the pH of the blood could be detected in malignancy, but any abnormal value would be masked by the buffer action of the blood and by the power of the liver and muscles to take up lactic acid In the Rous sarcoma the blood which had passed through the tumour was found to contain more lactic acid than was normal, which pointed to the production of acid in the growing part of the tumour. In experimental tar cancer in rabbits certain observers found the pH of the plasma to be considerably lowered in the precancerous stage (from an average value of 7 31 to an average of 7 17) The blood of cancer patients usually exhibited anti-tryptic activity. Excessive glucolysis was shown by Warburg to be characteristic of malignant growth, but the fundamental problem of its nature and origin remained unsolved The clinical value of lead was possibly a result of its causing the cessation of certain chemical processes due to enzymes, upon which the activity of the cell depended

Action of Lead

Prof W J DILLING (Liverpool) said that his experiments on germination of frogs' eggs and on growth of tadpoles had shown that resistance to the poisonous effects of lead was directly related to the age of the tadpole, and that extremely weak solutions of lead acetate (1 in 100,000) retarded growth It had been deduced (1) that lead is more toxic to growing than to embryonic tissues, (2) that its adverse action is toxic, and may be responsible for temporary sterility and early abortion, (3) that in non-lethal amounts this retarding effect is inversely proportional to the age of the animal, and (4) that it inhibits growth Experiments were made on the isolated intestine of a guinea-pig and rabbit to test the action of a partly ionic and partly colloidal preparation of lead Lead produced relaxation and inhibition of peristalsis without interfering with the vagus mechanism of the muscle It was suggested that colic might be prevented by linking up a phosphorus ion with lead. Prof Dilling referred to a lead preparation which was going to be released and which might prove both useful and safe

Prof. CARTER WOOD (Crocker Institute for Cancer Research, Columbia) described the results of his

---

[1] THE LANCET, 1923, ii., 1394.

BRITISH MEDICAL ASSOCIATION.

ANNUAL MEETING AT NOTTINGHAM.

(Continued from p 237)

SECTION OF MEDICINE

THURSDAY, JULY 22ND

AT the second session of this Section, Dr F H JACOB, the President, being in the chair, a discussion on

Blood Transfusion in the Treatment of Disease

was opened by Sir HUMPHRY ROLLESTON (Cambridge), who gave a brief account of the history of transfusion Like most remedies powerful for good, its employment, he said, might be attended by unpleasant or serious results, and this, combined with difficulties in technique, had led to its adoption often being delayed until the patient was beyond curative measures, or even in extremis The period during which transfused red cells persisted in the recipient's blood varied, according to Ashby's differential agglutination method, *between 59 and 113 days It was shorter in hæmolytic* and toxic states, and longer in traumatic anæmia Post-transfusion reactions had been reduced from 34 per cent to 4 per cent by improvement in technique, but according to Kordenat and Smithies all transfusions were followed by a rise of temperature within three hours Some reactions, due to gross incompatibility, to air embolism, and pulmonary œdema should be obviated by care in typing the blood of donors and patients and in technique It was, however, difficult to separate slight degrees of incompatibility in vitro, as they were often due to minor agglutinations. This was especially true in severe chronic anæmia, and there was evidence to show that in addition to the four recognised blood groups there were abnormal groups in pernicious anæmia, chronic hæmolytic jaundice, and malignant disease Reactions were more likely to occur after large transfusions than after small ones, and also after repeated injections, when they might be due to anaphylactic shock, the patient having become sensitised It might be wise, therefore, to repeat the blood tests before each transfusion Kordenat and Smithies classified reactions as follows (1) Acute and fulminant response due to agglutination and hæmolysis, coming on immediately This should be prevented by careful preliminary typing of the donor's and recipient's blood (2) Delayed and proteolytic response coming on from 1 to 12 hours after transfusion and ascribed to bacteriolysis and to protein cleavage of damaged tissues at an infective focus and not to hæmolysis (3) Systemic or constitutional reactions which like the last group, were not hæmolytic, as there was no evidence of blood destruction No satisfactory explanation of these reactions was forthcoming, and it was possible that they might be due to different factors in each case

There were four groups of cases, said Sir Humphry Rolleston, in which blood transfusion might be expected to do good According to Keynes's classification they were as follows (1) acute hæmorrhage and anæmia and associated shock, (2) chronic anæmia—to tide a patient over an operation and prolong life, or in the hope of cure, as in Addisonian anæmia, (3) hæmorrhagic diseases, and (4) general toxæmia, bacterial or chemical He concluded his address with a detailed account of the effects of transfusion in each of these groups

Prof G L GULLAND (Edinburgh), giving his impressions of 40 years' experience of blood transfusion, referred to the reactions observed before the days of blood grouping He was struck, he said, by the luck he had had, for in only two cases had there been trouble, since the introduction of grouping he had been less fortunate In pernicious anæmia, which was due to a toxæmia, there was interference with the function of the bone-marrow, and the aim of therapeutics must be to stimulate its hyperplasia Megaloblasts were formed, and if the patient recovered sufficiently, then normoblasts began to be formed also In treating the disease the toxic processes must be exhausted and in the great majority of cases this should bring about a cure The object of transfusing blood must be to help the patient to recover himself There was always a chance that the necessary antibodies would be contained in the blood, and it was therefore better to use young patients as donors If one transfusion did not lead to a response a second would not In no case of acute leukæmia had transfusion affected the course of the disease In chronic leukæmia the only indication for blood transfusion was intractable hæmorrhage which would not yield to any other treatment In hæmophiliacs transfusion might be useful when teeth had to be removed Prof Gulland said that he had not yet made up his mind whether the treatment was efficacious in purpura hæmorrhagica, but some cases had improved and there had been no bad results

Prof RÉNÉ CRUCHET (Bordeaux) spoke on transfusion of blood from animal to man Following Harvey's discovery of the circulation of the blood, bold surgeons, such as Wren, Boyle, and Clarke, between 1656 and 1660 began the practice of injecting drugs into the veins of animals and even of men—so-called infusory surgery Thence arose transfusory surgery—i e, transfusion of blood between animals, first of the same and then of different species In England in 1667 Edmund King and Thomas Cox transfused successfully from calf to sheep, but it was the Frenchman Denys, of Montpellier, who first applied the method to man, and in 1667 transfused four subjects with the blood of lambs and calves Later transfusion fell into disrepute, and was not revived until 1860, when Dr Oré, of Bordeaux, began his classical studies on the subject He transfused from animals to man, but his most favourable statistics showed a 16 per cent mortality, and severe reactions were frequent Meanwhile improvements in surgery and technique encouraged the hope that a renewed investigation would prove fruitful, and in 1921 Prof Cruchet took up the work The first injections of sheep and horses' *blood into patients* were followed by rather severe reactions and one death, but the majority of patients were benefited Further experiments led to the conclusion *that bad technique* alone was responsible for accidents

The principle of transfusion for any substance, continued Prof Cruchet, was that the rate of flow into the vein must be inversely proportional to its viscosity It was of the utmost importance to transfuse exceedingly slowly, especially during the *first period* The first half cubic centimetre of blood should take a minute to pass into the vein After this the flow should be accelerated in arithmetical *progression* until a quarter of the whole *amount* to be transfused had been given The second period was then reached, and the flow was continued at a uniform *rate until the end* of the period, when *it slacked off* In the third period the flow was again accelerated and kept at full speed till the operation was over So long *as the law of the* rate of flow was *not* violated the compatibility or otherwise of the bloods was of no consequence, and accidents did not occur The danger of *agglutination* was much exaggerated, *for drugs* which had the power of agglutinating human blood were frequently injected into veins without ill-effect *Hæmolysis* was an independent phenomenon, and always occurred to a slight extent when animals' blood was transfused.

(Continued from previous page)

ACUTE DILATATION OF STOMACH REFERENCES

1 Hilton Fagge Guy's Hospital Reports, 1873
2 C R Box and C S Wallace THE LANCET, 1901, ii, 1259, 1903 i, 1031, 1911, ii, 215
3 Campbell Thomson Acute Dilatation of Stomach, 1902, THE LANCET, 1903 ii, 1303
4 Leonhardt Akute Magenweiterung, Inaug Dissert, 1910, München
5 O J Borchgrevink Surg, Gyn, Obstet, 1913, xvi, 662
6 W Doolin Brit Jour Surgery 1918, vi, 125–34
7 L R and C A Dragstedt Jour Amer Med Assoc, 1922, lxxix, 612

from cooperation with the neurologist X rays might show up the tumour if there were any calcareous matter present, a condition rarely seen in cerebral tumours they were occasionally useful in pituitary tumours and where an endothelioma had eroded the inner table of the skull He referred to the relation to trauma and thought that, while it was impossible to be absolutely certain, there did seem to be some relation between a severe head injury and the occasional development of a glioma

Mr H S Souttar (London) demonstrated an ingenious instrument for turning down large osteoplastic flaps He felt that the bone flaps should be replaced and little of the skull should be removed He turned down a large scalp flap and found that it did not interfere with the vitality of the bone He removed the bone under local anæsthesia The dura mater, he said, was insensitive.

Mr G Jefferson (Manchester) emphasised the difference between skull surgery and brain surgery The former was easy and largely a matter of technique, while the latter required in addition extensive training in diagnosis and pathology He felt that neurological surgery was not nearly as advanced as that of other regions, which he attributed to the prevailing idea that a diagnosis of cerebral tumour could be made only with difficulty, and that when this had been done apart from improvement in pressure symptoms surgery offered but little hope of relief and none of cure This however, was contrary to the experience of those who paid particular attention to this branch of surgery

Mr J P Ross (London) pointed out that it was important when operating to allow the fluid to escape slowly so that the pressure was gradually lowered, otherwise œdema of the brain was apt to follow Cerebral compression arising after the operation might be due to the onset of cerebral œdema or to hæmorrhage The former might be combated by the intravenous injection of 75 c cm of 15 per cent saline Otherwise it was necessary to re-operate and take away part of the bone The latter could be prevented by greater care in stopping the bleeding during the operation.

A discussion on the

Place of Gastro-enterostomy in Gastric and Duodenal Surgery

was opened by Mr H J. Paterson (London), who remarked that no other operation had done so much to lead to human happiness Its very success had led to its employment in unsuitable cases, and it was to this and to an imperfect technique that some of the bad after-results were due Permanent cures followed in 82 per cent of gastric ulcers and in over 90 per cent of duodenal ulcers This percentage would undoubtedly be higher had he not included the cases he could not trace among those regarded as not cured The results after anterior gastro-enterostomy were somewhat better than after the posterior method, as the alkaline pancreatic juice flowed more easily into the stomach and neutralised the acidity of the gastric juice, which was the most active factor in keeping up the ulceration It was the method he now practically always adopted The operation should never be done merely upon a clinical or X ray diagnosis It was essential that the ulcer should be seen and felt This operation did not cure the ulceration, but merely placed it under the best conditions for cure It was essential that the operation should be followed by prolonged and effective after-treatment In some cases owing to the condition of the home-life this could not be done, which was responsible for poor results There was great need for convalescent homes and after-care centres in this country Gastro-enterostomy should be done in perforated ulcers as convalescence was smoother and shorter. It should not be done if it were suspected that the ulcer were malignant He did not operate for hæmorrhage, as this was best treated by medical means

The advocates of partial gastrectomy urged that it was a more certain cure of the ulcer, that it prevented the later onset of cancer, and that jejunal ulcer did not follow The jejunal ulcer was due to hyperacidity and did not result after gastro enterostomy if proper after-treatment were carried out It was stated that 60 per cent of gastric ulcers became malignant This was not borne out by the clinical or pathological findings The long history obtained in gastric cancer was due not to preceding ulceration, but to intestinal stasis None claimed that gastro-enterostomy was a preventive against cancer, yet only 2 per cent of such cases were stated to die of cancer and if these were carefully investigated it would be found that the diagnosis was wrong and that the cancer arose in other parts The mortality after gastrectomy was as high as the combined mortality and the complications after gastro-enterostomy Time alone could show whether the end-results were better, but it should not be forgotten that some of the strongest advocates of gastrectomy to-day were equally strong in their advocacy of gastro-enterostomy some years ago

Prof Finsterer (Vienna) said that he no longer performed gastro-enterostomy as the results were not satisfactory The ulcer did not heal, jejunal ulcers occurred, and hæmorrhage and perforation were not unknown He did a gastrectomy in all cases of gastric ulcer unless complicated by a perforation, and a duodenectomy in duodenal ulcers unless the ulcer extended as far as the ampulla of Vater or unless the common bile-duct could not be separated from it. The mortality for gastrectomy was 1 per cent and for duodenectomy 2 per cent in 503 resections, which included 86 patients between 60 and 80 The operation should be followed by a light diet for three months, at the end of which time the patients were able to go on a full diet and to resume ordinary work, 98 per cent. were permanently cured Only one gastro-jejunal ulcer occurred in his cases It was important to remove sufficient of the stomach; the pylorus and at least two-thirds of the body should be removed He preferred the Billroth II method and avoided the Y-shaped anastomosis

Mr K. W Monsarrat (Liverpool) pointed out that when the ulcer was healed and merely a stenosis present, a perfect result followed gastro-enterostomy. When there was active ulceration the results were not so good He considered the position of the opening was of great importance and should be as low as possible Whenever possible he in addition excised a gastric ulcer and infolded a duodenal ulcer

Mr Charles Roberts (Manchester) stressed the importance of efficient after-treatment. It was not sufficient to give only verbal advice as this was often imperfectly understood and soon forgotten Printed instructions should be issued An alkaline bismuth mixture should be continued for at least six months. An anterior gastro-enterostomy was less favourable than a posterior as it predisposed to intestinal obstruction The appendix should always be removed He performed gastrectomy only in large gastric ulcers or in cases in which gastro-enterostomy was not successful.

Mr E Deanesly (Wolverhampton) felt that in the majority of gastric ulcers some form of resection was necessary, while in duodenal ulcer gastro-enterostomy led to a cure The bad results that followed the latter operation were due to contraction of the opening, which prevented rapid emptying of the stomach. This he considered was essential to the rapid healing of the ulcer To facilitate it he in some cases resorted to Finney's operation

Mr A. B Mitchell (Belfast) stated that while a gastro-enterostomy in suitable cases did good, he was doubtful if any other operation led to more suffering when carried out in unsuitable cases or with bad technique When hæmorrhage followed a gastro-enterostomy for duodenal ulcer the latter was often in the first part of the duodenum and fixed to the posterior wall If the duodenal branch of the gastro-duodenal artery were picked up and ligatured at the operation this hæmorrhage could be prevented When hæmorrhage followed gastro-enterostomy it came as often from the ulcer as from the anastomosis With the perforated ulcer he did a gastro-enterostomy if the investigation into the changes produced by lead on large transplantable rat tumours Intravenous injections of fresh preparations of the non-toxic mixture of lead were given, and after two or three days the tumour diminished in size and there was sometimes a little redness and œdema around it On section the tumours thus treated were found to be filled with blood, especially the sarcomas , the carcinomas were apt to shrink and did not show so much hæmorrhage In these advanced cases it had been found difficult to sterilise all the cells of the tumour, but occasionally cure was maintained On microscopical examination the capillaries of the capsule were seen to be distended with red blood corpuscles, which accounted for the pain sometimes present 48 hours after injection In the tumour itself thrombi were found partially organised, and round these thrombosed vessels there was softening In the liver, after small doses, there might be focal necrosis Prof Wood concluded that the first effect of the lead was a thrombosis The surrounding tissues then underwent change owing to the toxic action of the lead upon them The tumours were not cured in all cases, but these tumours in the rat were more malignant than in man Lead did exert a toxic influence on them, and cures had occurred

Prof. E. E Glynn (Liverpool) said that investigations would go on for at least another year The following conclusions had so far been reached (1) There was histological evidence that lead had damaged a very small percentage of the malignant neoplasms examined from patients It would not be expected that a large percentage would show damage, because only a comparatively small number of patients were clinically benefited by lead There was a greater tendency to necrosis, and sometimes to a slowing in the rate of growth so that the malignant cells had time to become more specialised , thus keratinisation and the formation of cell nests and goblet cells appeared to be more common (2) There was no damage to malignant growths which was histologically pathognomonic of lead It most probably acted by increasing the regressive changes which normally occurred to a greater or less degree in all malignant neoplasms. The tendency to thrombosis in carcinoma was no greater , thrombosis in sarcoma might be more common, but it was probably secondary. The absence, however, of any characteristic changes was no proof that lead had no action If an investigation were made into the effects of arsenic or mercury on chancres or gummata nothing histologically pathognomonic of these remedies would be found (3) The effect of lead upon a similar malignant growth varied very greatly, even when it was administered under apparently the same conditions This suggested that the patients' tissues or resistance, using the term in its widest sense, probably played a part in determining the success or failure of treatment, as they did in malaria treated with quinine and in syphilis treated with mercury.

Treatment with Lead

Dr L Cunningham (Liverpool) said that in treating cases of malignant disease with lead one of the greatest difficulties had been the selection of cases which presented a reasonable chance of being benefited and could at the same time withstand the toxic effects of the drug Some patients were unaffected by large doses , others were made very ill and might even die after a moderate dose Before undertaking treatment he carried out complete investigations on the blood and urine, and if necessary made liver function tests as well The administration of lead was usually accompanied by some reaction Toxic effects had been observed, not only in the blood and blood-forming organs, but also in the gastro-intestinal system, the kidneys, liver, and, to a lesser extent, the central nervous system He described these effects and outlined their treatment The preparation of lead was nearly always given intravenously, but ionisation was also used for superficial tumours The dosage varied with the particular case under treatment, and the investigators were not satisfied that the optimal dose had yet been discovered Latterly they had given four doses of 15 c cm of the 0 5 per cent preparation at intervals of 10 days After a month's rest a further course of smaller doses was given, until a total of 0 6 g of lead had been reached Out of 227 cases treated 50 had shown benefit The disease was believed to be cured in 41

Dr S Miller (Harrogate) said that so far 18 cases at Harrogate had been treated with lead No serious reaction had occurred, but one patient had vomited persistently for ten days On the whole during the last three months improvement had occurred The blood should be examined, for the occurrence of stippling was an indication of the effect the lead was having

Mr Frank Cook (London) described the satisfactory results he had had in what was considered a hopeless case Lead should not be used, he thought, unless the doctor was in touch with a body of men who were constantly practising with it

Dr Cunningham, replying, agreed that blood films should be taken during treatment, about every month , Leishman's stain could be used to show stippling At present it was unwise for a doctor to treat cases on his own ; he should be in touch with a clinic

SECTION OF SURGERY

Wednesday, July 21st

In the absence of Sir D'Arcy Power, owing to illness, Sir James Berry presided at the first two sessions of this Section On Wednesday a discussion on

Cerebral Tumours

was opened by Mr Percy Sargent (London), who began by pointing out that much of Sir Victor Horsley's work still held good to-day Horsley had all along condemned expectant treatment, for in cases of cerebral tumour the patient could look to the surgeon alone for relief Radiotherapy was very disappointing, though occasionally the employment of radium combined with operation in a glioma had seemed to modify the natural course of the case It was to-day possible to predict the exact site and the probable nature of the growth

Taking in succession the various types of tumour, Mr Sargent said that *gliomata* were of two kinds—those which are apparently encapsuled and may undergo cystic degeneration, and those which grow rapidly and infiltrate the surrounding tissues, though they never involve the membranes or the bone The prognosis was better when they affected the cerebellum *Endotheliomata* were innocent in nature and the most favourable of all the intracranial tumours for radical treatment They were easily enucleated, were attached to the overlying dura mater, but never invaded the brain The operative mortality was, however, high Of the *cerebello-pontine tumours* 90 per cent were neurofibromata They were often encapsuled and arose near the eighth nerve Deafness and noises in the head might be the only symptoms The corneal reflex was often diminished Intracranial pressure developed only late Their removal was often difficult as they lay so near the medulla, and interference of the blood-supply of the latter with its serious consequences might result from the operation. *Pituitary tumours* were of two types, those of the gland proper, which were usually adenomata, and those of the interpeduncular space It was the former which were most favourable for operation

Figures were quoted to show that the results of operation were not so deplorable as was often thought In a fair proportion, varying with the nature of the growth and the time of diagnosis, a permanent cure without any subsequent neurological defect followed Better results were to be obtained only by earlier diagnosis, and it was to be regretted that the signs of a tumour of the brain as commonly taught were headache, vomiting, and optic neuritis These were rather the signs of increased cerebral pressure There should be greater familiarity with the ophthalmoscope, but he felt that earlier diagnosis would be possible only

Mr E Deanesly (Wolverhampton) considered that the trouble lay in removing the glands and not the growth, for recurrence was rarely seen in the mouth It was only when the growth was extensive that he used diathermy In elderly people he did not remove the glands

Mr Stanford Cade (London) considered that the primary growth should be treated by the insertion of radium needles If the glands were operable they should be removed by block dissection, otherwise radium should be applied At the Curie Institute it was claimed that 25 per cent were alive at the end of five years

Mr W H Carson (London) read a paper on

Post-operative Treatment of Carcinoma of the Breast

During the operation he removed the minimum amount of skin to make certain of primary union, and the incision should be so designed that the scar was kept out of the axilla To prevent the shock which might develop three to four hours after the operation the patient was placed between blankets under a cradle heated with electrical lamps and was given one pint of saline containing 5 per cent. glucose immediately on returning to bed, and this was repeated in one hour Morphia was given if necessary. It was important to avoid hyper-extension of the arm during the operation as in two of his cases paralysis of the biceps followed though return of power took place He always drained with a tube in the axilla which was removed on the second day It was important to look out for accumulations of fluid that might take place below the clavicle and over the upper part of the rectus The bandage over the chest should not be too tight The arm should be kept at a right angle from the beginning and should be fastened to the bed The patient should be sat up after the first few hours. To prevent the scar becoming adherent to the chest wall the skin should be gently massaged each day.

Mr R E Kelly (Liverpool) considered that more skin should be taken away and that the flaps should be carefully cleaned as recurrences did not take place in the scar, but about one and a half inches away

Mr Garnett Wright (Manchester) emphasised the placing of the incision so that no band formed between the chest wall and the inner aspect of the upper arm He preferred a continuous suture for the skin, as it reduced the tension more than interrupted sutures He did not consider that placing the arm at a right angle was of much importance provided active and passive movements were carried out from the day after the operation

Mr Gordon Taylor stated that he had employed X ray irradiation in cases he had operated upon since the war He considered the results were worse than when it was not employed and he had now given it up Much of the bleeding during the operation came from the smaller vessels of the skin, and this could be prevented by employing the diathermy knife

Mr G Simpson considered that X ray irradiation was undoubtedly of value in after-treatment

Mr A B Mitchell (Belfast) read a paper on the

Treatment of Spiral Fractures

He pointed out that the difficulties in treatment were due to the sharp end of the upper fragment becoming firmly embedded in the muscles and to the tendency of the lower fragment to rotate If he could not produce accurate apposition by the end of a week he always operated By bringing both fragments out into the wound accurate apposition could be obtained This was maintained by wire wound round the ends, which did not pierce the bone and plates were unnecessary and might do much damage Kangaroo tendon and silk could not be tied sufficiently tightly to maintain the apposition

Friday July 23rd

This was a joint meeting with the Section of Anæsthetics, at which Dr Samuel Johnston (Toronto) presided, when a discussion on

Anæsthesia in Abdominal Surgery

was opened by Prof Hans Finsterer (Vienna) He stated that in major operations upon the abdomen he had given up anæsthetising by ether and chloroform as though there was no difficulty in obtaining relaxation, a fall in the blood pressure and much shock followed lung complications were common and serious changes in the heart liver, and kidneys were apt to supervene In acute abdominal affections they often gave rise to fatal hepatic insufficiency and in long abdominal operations he felt their use led to interference with the resisting power of the peritoneum and favoured the onset of peritonitis He therefore had fallen back upon some variety of regional anæsthesia Novocaine gave good results and 200 c cm. of ½ per cent solution might be used, but it was important to take into account the general condition of the patient and if there was marked cachexia or anæmia the strength should be ¼ per cent If the dose were adjusted to suit the patient s strength, pallor, restlessness, and air hunger were avoided. Tutocaine was coming into favour in Germany and could be used in strengths of 1/5 to 1/8 per cent. : it was more effective, and vomiting was rarer If the patient was very nervous he induced with ether, and this might be given in small amounts throughout the operation If however, the patient insisted upon general anæsthesia alone he now refused to operate He had been impressed with the nitrous-oxide-oxygen method of the Americans, which he should have preferred but this was too expensive to have any scope in Austria Ethylene and acetylene were too inflammable In operations upon the abdominal cavity it was necessary to anæsthetise the peritoneum of the posterior as well as the anterior abdominal wall. Injection of the mesentery alone combined with infiltration anæsthesia was of value only if there was no pulling upon the viscera He had given up spinal anæsthesia, as the fall in the blood pressure often led to severe collapse Paravertebral anæsthesia was of advantage when the operation was limited to one side of the abdomen, as in those upon the gall-bladder and resection of the colon He however now used chiefly splanchnic anæsthesia in which the splanchnic nerve trunks were injected. This could be done posteriorly by the method of Kappis or anteriorly by the method of Braun after opening the peritoneum. Kappis s method was somewhat more dangerous than that of Braun owing to the possibility of injecting the fluid into the veins or into the spinal cord ; it was, however, the method chiefly employed in England and America. With Braun s method 70 c.cm. of ½ per cent. novocaine were sufficient Care should be taken to displace the vena cava with the forefinger so that the injection was not made directly into it If it was impossible to separate the aorta and the cava the novocaine had better be injected into the mesentery. In 8 per cent. of cases the administration of ether was necessary, chiefly in cases where marked adhesions were present, but the amount needed was very small Should exploration of the whole of the abdominal cavity be necessary, temporary general anæsthesia would be necessary In operations upon the lower abdomen parasacral anæsthesia was not sufficient for removal of the rectum The injection of novocaine at the base of the meso-sigmoid from behind or on the anterior surface of the fifth lumbar vertebra after opening the peritoneum was needed As a result of regional anæsthesia lung complications he said had disappeared, shock was much less and he was prepared to operate upon patients whose condition a few years ago would have been regarded as hopeless. In addition perfect prolonged relaxation could be obtained Statistics of such severe operations as resection of the stomach or colon removal of the gall-bladder, &c., were given to show the marked improvement that had appeared in recent years since this method was introduced The results in patients of 60 to 80 were as satisfactory as those in younger ones

Dr C W Moots (Toledo Ohio) emphasised the following points : 1. The necessity for a complete clinical examination before the operation when the activity of all the vital organs should be investigated. A preliminary consultation between the surgeon and the anæsthetist should always be held 2 The blood shock was not too great and if there was not too much extravasation into the peritoneal cavity. It could be done more often with a perforated duodenal ulcer as owing to the associated spasm of the gastric sphincter there was less extravasation and less shock.

Sir **William Wheeler** (Dublin) felt that in operating in cases of ulcer two factors should be taken into account—the ability of the individual and the local condition present. Cancer did at times follow an ulcer, and he had come across three undoubted cases. When performing gastro-enterostomy he infolded the ulcer to prevent perforation and picked up the arteries to prevent bleeding.

Prof. H. A. **Bruce** (Toronto) pointed out that while gastrectomy in the hands of an expert might be followed by as small a mortality as gastro-enterostomy and might lead to better end-results, should it come to be regarded as the routine operation it might be followed by deplorable results. Finney's operation had not been given up in America, and there was a slight tendency in recent years to resort to it somewhat more frequently.

Prof. D. P. D. **Wilkie** (Edinburgh) thought that most surgeons were satisfied with gastro-enterostomy as relief of the symptoms so often followed, and unfortunate sequelæ were very rare, particularly in duodenal ulcer. Where the stomach was hypertonic or the ulcer inclined to bleed freedom from symptoms followed only in 50 per cent. It had little effect on the large florid ulcer. He did not consider gastrectomy had stood the test of time. The stomach was not a useless organ as was sometimes supposed, and after gastrectomy he had felt that he was not justified in removing so much of it for so small a lesion. He now performed a posterior gastro-enterostomy and whenever possible excised the ulcer, otherwise he infolded it. The bad results were due to faulty technique and the wrong choice of cases. Two conditions were apt to follow—jejunal ulcer and bilious vomiting. The former was due to hyperacidity and could be prevented by effective post-operative treatment, while the latter was often due to too small an opening in the mesocolon.

Thursday, July 22nd

Carcinoma of the Tongue

The discussion was opened by Mr. **Duncan Fitzwilliams** (London), who began by emphasising the need for a preliminary cleansing of the ulcer and of the mouth for some days before operation, when the patient should accustom himself to swallowing from the feeding tube. He always used warmed ether as the anæsthetic and did a preliminary laryngotomy to avoid ligature of the lingual artery. Intratracheal ether had the drawback that the introduction of the tube took time and might cause bleeding from the growth. Morphia should be given before operation only in small doses, as it interfered with the swallowing and coughing reflexes, and should be avoided as far as possible in the after-treatment. He removed the tongue first by scissors and knife and did not employ diathermy, and waited about a fortnight for the wound to heal before removing the glands. As the primary growth was removed there was no tendency for the cancer to spread in the interval. The carcinoma does not extend laterally along the mucous membrane, but deeply into the substance of the tongue. Consequently, even if a full three-quarters of an inch of healthy tissue were removed around the growth, enough mucous membrane would be left to allow of the margins being sutured together. In this way a large ulcerating wound was avoided, there was much less pain, and much less tendency to the development of broncho-pneumonia. At the end of the operation the plugging was removed from the pharynx and the laryngotomy tube withdrawn, when the patient was able to breathe through the natural channels. He removed the glands by the block dissection of Crile, but did not touch the opposite side of the neck unless the glands on the same side were much involved.

Sir **William Milligan** (Manchester) dealt with the treatment by radio-diathermy. Where the primary growth was operable, and the lymphatic involvement not too great, surgical removal was always indicated. If this were to be done he did not consider previous irradiation of the neck should be carried out, as it interfered with the successful removal of the growth. Radium and diathermy should be reserved for inoperable cases or when operation was refused. Even if a cure did not take place, they often did good by giving complete freedom from symptoms even for years, and relieved the pain, prevented hæmorrhage, and diminished the dysphagia. When surgical intervention was deemed impracticable owing to the extent of the growth an attempt should be made to remove it by the diathermy knife or to destroy it by the diathermy button. When the removal of the growth is contra-indicated, radium should be inserted into its substance. The lingual artery should invariably be tied. Screened tubes might be buried in the growth, but owing to action of beta rays being more local than gamma, they were apt to produce necrosis, followed by sepsis if retained for more than 48 hours. Further, it was impossible to keep screened tubes accurately in position in a mobile organ such as the tongue. Consequently he had been implanting into the substance of the growth large numbers of "seeds" containing emanation. These should be placed in parallel rows 1 cm. apart, when they became encapsuled or sloughed out, the action being due to a devitalisation of the malignant cells. Irradiation of the lymphatic fields should be an invariable post-operative procedure. The best method was to implant screened tubes, otherwise the surface application of radium or treatment by X rays should be carried out. Of 812 cases treated in this way, all of which were in an advanced stage and inoperable, 51 had remained well for periods varying from one to nine years. Unscreened tubes were employed in 41 of these, and he believed it would be the method of the future. Treatment by radium was still, however, in its experimental stage, and it was inadvisable to be dogmatic on the value of any method.

Mr. W. S. **Dickie** (Middlesbrough) dealt with cancer of the postero-lateral part of the tongue, which usually arose in the anterior pillar of the fauces. The jaw dominated the surgery of the tongue, and he removed the lower jaw on that side together with the coronoid process and the condyle after dividing it at the canine fossa. He then removed the half of the tongue, the tonsils, and both pillars of the fauces. Later he attacked the glands, but did not do a block dissection, as recurrence took place only in the upper part of the neck. The operative mortality was high and among 17 cases there were 4 deaths, 5 had in the meantime died of recurrences, but 8 were still alive. Two cases were shown, one done four years ago. There was remarkably little disfigurement, the mouth could be fully opened, and there was little alteration in the voice.

Mr. **Gordon Taylor** (London) considered that the disease was seen only in those who had had syphilis or who had neglected mouths. Of the cases operated upon before the war all except one had died within a year. For the last five and a half years he had removed the tongue with the diathermy knife, taking away part of the alveolar margin to gain access. He later proceeded to do a block dissection of the glands on that side of the neck, even if enlarged glands were present. If enlarged glands were detected during the operation he proceeded to do a complete block dissection on the opposite side of the neck as well, otherwise he removed only the glands in the upper part. Of the cases that recovered 50 per cent were now alive and well—a big improvement. There was, however, a high operative mortality, 95 per cent of the deaths being due to broncho-pneumonia and taking place by the third day. He introduced a drainage-tube through a stab wound in the floor of the mouth to prevent the infected material being aspirated into the lungs. While a laryngotomy facilitated removal of the tongue, it did not prevent the onset of broncho-pneumonia. The three stages of the operation could, if necessary, be done under local anæsthesia.

products including insulin, glandular extracts compressed tablets and surgical sundries —[1] Parke, Davis and Co (51, Beak-street London W. 1) had a number of pharmaceutical preparations vaccines, and gland products including a new type of bacterial antigen which can be used either prophylactically or therapeutically It is believed to be the greatest advance yet made, is free from cells and toxic matter and nearly free from protein and so can be used in acute conditions. Four types are prepared—streptococcal gonococcal pneumococcal, and pertussis. Also the most potent scarlet fever streptococcus antitoxin yet produced and toxin for the Dick test

Sanocrysin was demonstrated for the first time in this country but is not on the open market owing to its danger This firm guarantee their parathyroid gland tablets to contain 90 per cent of the dried gland substance —[16] Oppenheimer Son and Co Ltd (179 Queen Victoria-street E C 4) showed a selection of their Bi-Palatinoids " and 'Palatinoids , glandular products in palatable form: ' Roboleine, the vitamin food, Maglactis " a pure magnesium hydrate in suspension and instruments for the evolution of 99 per cent pure oxygen gas from chemical cubes —[19] Schering Ltd (3, Lloyd's-avenue, London E C 3) showed a selection of their well-known products Atophan ' 'Veramon ' Medinal' also 'Maturin ' a test believed to give 90 per cent accurate results in the diagnosis of early pregnancy —[21] W A Wharram Ltd (31, Lady-lane Leeds) showed popular pepsin preparations including 'Liq Bismuth Co c Pepsin , 'Linctus Heroin Hydrochlor c Terpin Hyd ' of which each fluid drachm is equivalent to 1 12 gr of the alkaloid · Mist Neurasthen Conc', 'Syrup Hypophosph Co containing the combined hypophosphites in a neutral form a soothing antiseptic Boraline Cream ' and an analgesic ointment —[26] The Anglo-American Oil Co. Ltd (Albert-street Camden Town London N W 1) showed their paraffin products "Nujol. 'Cream of Nujol with Agar and 'Mistol also Flit the general household insecticide —[27] The Crookes Laboratories (22 Cheney-street London W C 1) showed a selection of Collosols particularly Collosol Lead M A, Collosol Lactalumina a neutral preparation of aluminium hydroxide which neutralises acidity by colloidal attraction. Collosol Ichthyol and Collosol Silica with *Drosera rotundifolia* They also distributed an "Index of Treatment," containing prescriptions bibliography, and price list —[41] The British Drug Houses, Ltd (London N 1) exhibited medical specialties including Æther Puriss B D H the Borocaines; Caprokol a new synthetic hexyl-resorcinol preparation; thyroxine tablets; and a series of microscopic stains —[42] Messrs Allen and Hanburys Ltd (Bethnal Green E 2) in addition to their 'Byno and Polyglandin" preparations showed two new substances: "Acidophilus Jelly, an agar culture of *B acidophilus*, and Cellulose Flour, a preparation for adding bulk to a diet They also showed a useful vacuum extractor a double-ended needle connected with a vacuum bottle —[48] The Hoffmann-La Roche Chemical Works, Ltd (7 and 8 Idol-lane London E C 3) showed their Allonal, "Sedobrol," and "Somnifaine" hypnotics and their new synthetic non-toxic purgative Isacen " which acts only on the intestines and is excreted unchanged —[50] Evans Sons Lescher and Webb Ltd (56, Hanover-street Liverpool), had an extensive list of hypodermic ampoules, filled by a machine which ensures accuracy and sterility, "Cascaromat ' a concentrated elixir of cascara free from bitterness: standardised Infundibulin · Marrophos ' a tonic food Purgoids ' a safe laxative tablet, 'Sexatone pluriglandular tablets, and Sodium Morrhuate for tuberculosis —[53] G W. Carnrick Co (London agents: Brooks and Warburton, Ltd 40–42 Lexington-street London, W 1) showed their glandular products including hormotone and trypsogen guaranteed to be made from fresh glands analysed and standardised, and packed in specially sealed amber glass moisture-proof bottles —[59] Armour and Co Ltd (Queen's House Kingsway, London W C 2), showed their medicinal products of animal origin, including corpus luteum guaranteed to be prepared from the ovary of the pregnant sow, pig spleen preparation in elixir and hypodermic solutions for anæmia or mild ganglionic lesions, and oxalised 'Thromboplastin' solution also capsules of 'Thyro-Manganese ' , and a double-strength 1 c cm ampoule of pituitary extract —[67] Genatosan, Ltd (Loughborough Leicestershire), showed their well-known "Genasprin," Sanatogen," 'Formamint " &c and a range of detoxicated vaccines This firm have recently been appointed the sole concessionaires in this country for the products of the Pasteur Laboratories —[73] Sandoz Chemical Co Ltd (Bradford) showed "Femergin '(ergotamine tartrate), "Felamine" 'Scillaren ' Lobeline," also a new "Allisatin" tablet for tasteless administration of *Allium sativum* —[81] J C Eno, Ltd ('Fruit Salt Works Pomeroy-street New Cross London S E 14), had an exhibit of their well-known effervescing saline laxative —[37] Jeyes Sanitary Compounds Co Ltd, (64 Cannon-street London England) showed their Cyllin' preparations Liquid soap guaranteed equal to 50 per cent carbolic acid; Lano-cyllin, an antiseptic ointment, Jeysol identical with lysol and making a clear solution Medical Cyllin has a Rideal-Walker coefficient of 24–26 for *B typhosus*

SURGICAL INSTRUMENTS AND APPLIANCES

[3] Down Bros Ltd (21 and 23 St Thomas's-street, London S E 1) showed a selection of new instruments and modifications of existing patterns including Cubley's tracheotomy instruments as used at the M A B hospitals Ivan Magill's new portable intratracheal apparatus a recent improvement demonstrated at the sectional meeting Geoffrey Marshall's portable pneumothorax apparatus, Schoemaker's stomach-crushing clamps and forceps and their Up-to-date operation table with oil pressure pump for raising and lowering with recent improvements —[9] The Genito Urinary Manufacturing Co Ltd (64, Great Portland-street, London W 1) sole agents for J Eynard Paris in Great Britain and Ireland, showed a series of surgical and optical instruments including new boilable cystoscopes, made to the pattern of leading surgeons a large improved diathermy machine with dry spark gap, boilable and non-conducting retractors and other diathermy instruments; Chevalier Jackson's improved models, Mr Norman C Lake's suction apparatus; and specialties in stainless steel by Eynard —[11] Arnold and Sons (John Bell and Croyden, Ltd) (50–52, Wigmore-street London W 1) showed a new pedestal operation table on oil-pump base, as supplied to the Cancer Hospital, the 'Arnold" high-pressure steam and vacuum steriliser for dressings, with improved radial arm wheel door; an improved urological table and chair combined: the "Mayboil" flexible elastic gum catheters and bougies, a syringe for regional anæsthesia designed by Mr O Stanley Hillman F R C S, and "Phonophore" stethoscopes —[22] Mayer and Phelps (Chiron House, 59-61, New Cavendish-street London W 1) showed instruments and apparatus of original design, many in stainless steel, the "Leeds" anæsthetic outfit combining apparatus for nitrous oxide, oxygen carbon dioxide, open and closed ether and chloroform; a chair for operation work in the upright position; Hammond's combined urological syringe for injecting the anterior and posterior urethra for local anæsthesia hypodermic intramuscular and intravenous injection and lumbar puncture, a novel gag for adenoid and tonsil operations: and an artificial larynx and various forms of speaking apparatus for use after total laryngectomy. —[33] The Surgical Manufacturing Co. Ltd (83 and 85, Mortimer-street London, W.1) exhibited a series of instruments including the "Barton" sphygmomanometer, the "Bard Parker knife with removable blades; the Boyle-Davis mouth gag; the "Aurora-

pressure should be taken before and every five minutes during the operation The systolic pressure alone is of little value, and more importance should be attached to the diastolic pressure and the pulse pressure A comparison of these with the pulse-rate gave the earliest warning of the onset of shock, which might be prevented by the immediate administration of intravenous saline 3 The administration of nitrous oxide and oxygen alone Nitrous oxide acts only by depriving the brain of oxygen, and it did not affect the cells of other organs such as the heart and kidneys. Its action ceased immediately its administration was stopped It was possible, provided the anæsthetist had thoroughly learnt the technique and the surgeon was gentle with his manipulations, to obtain complete relaxation in all abdominal operations, and consequently there was no necessity for ether or local infiltration Post-operative nausea and vomiting were extremely rare, and the patient came round without any struggling 4 In the preliminary treatment active purgation should be avoided and fluids should be given up to within half an hour of the operation Morphia, gr ⅙, with scopolamine, gr 1/200, should be given two hours before the operation and repeated in an hour's time. During an operation he avoided the extreme Trendelenburg position even for pelvic operations, as it predisposed to shock Nitrous oxide-oxygen anæsthesia was quite suitable for cases of intestinal obstruction provided the intestinal contents were aspirated by an electrical suction pump through a small incision immediately the abdomen was opened In these cases intravenous saline was administered from the start.

Dr C **Langton Hewer** (London) stated that gastric surgery made large demands upon the anæsthetist as it was that part of the abdomen in which respiratory movement was at its maximum, and relaxation might be difficult to produce as traction upon the peritoneum might result in laryngeal spasm In addition shock and pulmonary complications were more liable to follow than after operations elsewhere He considered that endotracheal nitrous oxide-oxygen-ether anæsthesia was preferable to regional and splanchnic anæsthesia When the patient was fully anæsthetised a tracheal catheter was slipped between the vocal cords and a mixture of 50 per cent nitrous oxide and 50 per cent oxygen passed through ether was first employed The amount and proportions of the gases were regulated until the colour of the mucous membrane was just pink and the manometer showed a pressure of 5 mm. Hg on inspiration At the end of the anæsthesia a mixture of 90 per cent oxygen and 10 per cent carbon dioxide was substituted in order to stimulate the respiratory centre and so cause forced breathing and the expulsion of the ether To avoid pulmonary complications atropine should be given in small doses repeated after the operation about 1/200 gr three times a day for three days being usually employed. In this way a perfect anæsthesia for upper abdominal work was obtained, and when once a surgeon had operated with it he almost invariably preferred it for his other cases It was suitable for cases of intestinal obstruction as, should vomiting occur, owing to the positive pressure in the lungs there was no tendency for the vomit to be aspirated into the lungs

Mr **Gordon Taylor** said that he employed local infiltration of the abdominal wall together with splanchnic anæsthesia by the posterior method of Kappis and a light ether anæsthesia from the start The latter abolished all psychical shock, made the injection of the novocaine more easy, and less morphia and scopolamine were needed In addition, should the local and splanchnic anæsthesia fail towards the end of a long operation the general anæsthesia could be easily deepened The objection to the combined method was that the injection of the splanchnics by the posterior method took time and a sudden fall in the blood pressure might ensue The latter was only temporary and was associated with no rise in the pulse-rate The advantages were that pneumonia and chest complications were almost completely eliminated, long operations could be performed with little shock, there was complete relaxation, and the breathing was very quiet In the lower abdomen he used spinal with caudal anæsthesia

Mr K. W **Monsarrat** (Liverpool) considered that no one method should be used as a routine, and the condition of the patient should be given due consideration With a powerful stout man gas and oxygen did not suffice and a general anæsthetic was necessary Where there was a liability to chest trouble he preferred warm ether given by the Shipway method With a general anæsthesia regional anæsthesia or local infiltration should always be carried out as it aided relaxation and prevented that collapse which followed if the skin incision were made when the anæsthesia was very light In operation upon the stomach and bowel he infiltrated the mesentery It was important to recognise the action of ether upon the pancreas Ketosis and acidosis might follow its use and were associated with changes in the blood-sugar These with the post-anæsthetic vomiting could be relieved by the injection of 10 units of insulin immediately after the operation, which could be repeated if necessary He strongly advised a preliminary consultation between the surgeon and the anæsthetist

Mr J P **Lockhart-Mummery** (London) considered that as yet we had not a very satisfactory local anæsthetic, as novocaine did not in all cases have sufficient penetrating powers Parasacral anæsthesia took longer than, and had no advantage over, spinal anæsthesia The fall in blood pressure that took place in the latter was purely mechanical and could be prevented by slightly tilting the table He now used regional or spinal anæsthesia combined with gas and oxygen For cases of acute intestinal obstruction he employed high spinal anæsthesia

Mr **Cade** considered that splanchnic anæsthesia had its dangers One was the intravenous injection of novocaine might occur and was dangerous as it led to a sudden fall in the blood pressure, it could be prevented by repeatedly withdrawing the piston during the injection A delayed reaction shown by a fall in the blood pressure and a rise in the pulse-rate might take place about the second day. He did not consider a general anæsthetic was necessary, as any psychical action could be avoided by the proper administration of hypnotics We were, he thought, too apt to refer to the possible damaging action of ether, while ignoring that which might result from large doses of drugs.

EXHIBITION OF DRUGS, INSTRUMENTS, FOODS, AND APPLIANCES

The usual trade exhibition was opened in the Victoria Halls on Tuesday, July 20th The Mayor welcomed the Association and called on the President-Elect to open the exhibition Mr **Hogarth** said that the display had now become an essential and integral part of the annual meeting, and emphasised the debt of the profession to the firms which supplied them with their tools. There was true coöperation between them and the profession

There were 84 stalls, and a brief notice of the more important exhibits on each is given below

Drugs and Pharmaceutical Preparations

[1] Burroughs Wellcome and Co (The Wellcome Foundation, Ltd, Snow Hill Buildings, London, E C 1) had their exhibit ingeniously arranged on different coloured panels, each of which corresponded with an organ similarly coloured on a large anatomical chart Of their many "Tabloid," "Hypoloid," and "Soloid" products may be mentioned "Tabloid" Digitalis Leaf, grown in this country, physiologically standardised and containing the active principle, "Tabloid" hypodermic insulin hypochloride the only compressed British insulin, and the "Wellcome" Brand materials for Schick and Dick tests, diphtheria prophylactic and diphtheria and scarlet fever antitoxins —[2] Boots Pure Drug Co, Ltd (Station Street, Nottingham), showed a large selection of their

products, including insulin, glandular extracts, compressed tablets and surgical sundries —[1] Parke, Davis and Co (51, Beak-street, London, W. 1) had a number of pharmaceutical preparations vaccines, and gland products, including a new type of bacterial antigen, which can be used either prophylactically or therapeutically It is believed to be the greatest advance yet made, is free from cells and toxic matter, and nearly free from protein and so can be used in acute conditions Four types are prepared—streptococcal gonococcal, pneumococcal, and pertussis Also the most potent scarlet fever streptococcus antitoxin yet produced and toxin for the Dick test ' Sanocrysin ' was demonstrated for the first time in this country, but is not on the open market owing to its danger This firm guarantee their parathyroid gland tablets to contain 90 per cent of the dried gland substance —[16] Oppenheimer, Son and Co Ltd (179 Queen Victoria-street, E C 4) showed a selection of their "Bi-Palatinoids" and "Palatinoids", glandular products in palatable form "Roboleine," the vitamin food, "Maglactis," a pure magnesium hydrate in suspension, and instruments for the evolution of 99 per cent pure oxygen gas from chemical cubes —[19] Schering, Ltd (3, Lloyd's-avenue London E C 3), showed a selection of their well-known products Atophan," "Veramon," ' Medinal ' also "Maturin" a test believed to give 90 per cent accurate results in the diagnosis of early pregnancy —[21] W A Wharram, Ltd (31, Lady-lane, Leeds) showed popular pepsin preparations including "Liq Bismuth Co c Pepsin', "Linctus Heroin Hydrochlor c Terpin Hyd" of which each fluid drachm is equivalent to 1/12 gr of the alkaloid "Mist Neurasthen Conc ', "Syrup Hypophosph Co ' containing the combined hypophosphites in a neutral form a soothing antiseptic Boraline Cream ', and an analgesic ointment —[26] The Anglo-American Oil Co, Ltd (Albert-street Camden Town London N W 1), showed their paraffin products "Nujol" "Cream of Nujol with Agar ' and 'Mistol ', also "Flit" the general household insecticide —[27] The Crookes' Laboratories (22 Chenies-street London W C 1) showed a selection of Collosols particularly Collosol Lead M A , Collosol Lactalumina, a neutral preparation of aluminium hydroxide which neutralises acidity by colloidal attraction, Collosol Ichthyol, and Collosol Silica with *Drosera rotundifolia* They also distributed an "Index of Treatment," containing prescriptions bibliography, and price list —[11] The British Drug Houses, Ltd (London, N 1), exhibited medical specialties, including Æther Puriss B D H , the Borocaines, Caprokol, a new synthetic hexyl-resorcinol preparation, thyroxine tablets, and a series of microscopic stains —[42] Messrs Allen and Hanburys, Ltd (Bethnal Green, E 2), in addition to their "Byno" and "Polyglandin" preparations, showed two new substances "Acidophilus Jelly," an agar culture of *B acidophilus*, and Cellulose Flour, a preparation for adding bulk to a diet They also showed a useful vacuum extractor, a double-ended needle connected with a vacuum bottle —[48] The Hoffmann-La Roche Chemical Works, Ltd (7 and 8, Idol-lane, London, E C 3), showed their "Allonal," "Sedobrol," and "Somnifaine" hypnotics, and their new synthetic non-toxic purgative "Isacen," which acts only on the intestines and is excreted unchanged —[50] Evans Sons, Lescher and Webb, Ltd (56, Hanover-street, Liverpool), had an extensive list of hypodermic ampoules, filled by a machine which ensures accuracy and sterility, "Cascaromat" a concentrated elixir of cascara free from bitterness, standardised Infundibulin"; "Marrophos" a tonic food, "Purgoids" a safe laxative tablet, "Sexatone" pluriglandular tablets, and Sodium Morrhuate for tuberculosis —[53] G W Carnrick Co (London agents Brooks and Warburton, Ltd, 40–42, Lexington-street, London, W 1) showed their glandular products including hormotone and trypsogen guaranteed to be made from fresh glands, analysed and standardised, and packed in specially sealed amber glass moisture-proof bottles —[59] Armour and Co, Ltd (Queen's House, Kingsway, London, W C 2), showed their medicinal products of animal origin, including corpus luteum guaranteed to be prepared from the ovary of the pregnant sow, pig spleen preparation in elixir and hypodermic solutions, for anæmia or mild ganglionic lesions, and oxalised "Thromboplastin' solution, also capsules of "Thyro-Manganese", and a double strength 1 c cm. ampoule of pituitary extract —[67] Genatosan, Ltd (Loughborough, Leicestershire), showed their well-known "Genasprin," "Sanatogen," "Formamint," &c and a range of detoxicated vaccines This firm have recently been appointed the sole concessionaires in this country for the products of the Pasteur Laboratories —[73] Sandoz Chemical Co, Ltd (Bradford), showed "Femergin" (ergotamine tartrate), "Felamine," "Scillaren," "Lobeline," also a new "Allisatin" tablet for tasteless administration of *Allium sativum* —[81] J C Eno, Ltd ("Fruit Salt" Works, Pomeroy-street, New Cross London, S E 14), had an exhibit of their well-known effervescing saline laxative —[37] Jeyes Sanitary Compounds Co, Ltd (64 Cannon-street London England), showed their ' Cyllin ' preparations Liquid soap guaranteed equal to 50 per cent carbolic acid, Lano-cyllin, an antiseptic ointment, Jeysol identical with Lysol and making a clear solution Medical Cyllin has a Rideal-Walker coefficient of 21–26 for *B typhosus*

SURGICAL INSTRUMENTS AND APPLIANCES

[3] Down Bros Ltd (21 and 23, St Thomas's-street, London S E 1), showed a selection of new instruments and modifications of existing patterns, including Cubley's tracheotomy instruments, as used at the M A B hospitals, Ivan Magill's new portable intratracheal apparatus, a recent improvement demonstrated at the sectional meeting, Geoffrey Marshall's portable pneumothorax apparatus, Schoemaker's stomach-crushing clamps and forceps, and their ' Up-to-date operation table with oil pressure pump for raising and lowering, with recent improvements —[9] The Genito-Urinary Manufacturing Co, Ltd (61, Great Portland-street, London, W 1) sole agents for J Eynard, Paris in Great Britain and Ireland showed a series of surgical and optical instruments, including new boilable cystoscopes, made to the pattern of leading surgeons, a large improved diathermy machine with dry spark gap, boilable and non-conducting retractors, and other diathermy instruments, Chevalier Jackson's improved models, Mr Norman C Lake's suction apparatus, and specialties in stainless steel by Eynard —[11] Arnold and Sons (John Bell and Croyden, Ltd) (50–52, Wigmore-street, London, W 1) showed a new pedestal operation table on oil-pump base, as supplied to the Cancer Hospital, the "Arnold" high-pressure steam and vacuum steriliser for dressings, with improved radial arm wheel door, an improved urological table and chair combined; the "Mayboil" flexible elastic gum catheters and bougies, a syringe for regional anæsthesia designed by Mr O Stanley Hillman, F R C S, and "Phonophore" stethoscopes —[22] Mayer and Phelps (Chiron House, 59-61, New Cavendish-street, London, W 1) showed instruments and apparatus of original design, many in stainless steel, the "Leeds" anæsthetic outfit combining apparatus for nitrous oxide, oxygen, carbon dioxide, open and closed ether and chloroform, a chair for operation work in the upright position; Hammond's combined urological syringe for injecting the anterior and posterior urethra, for local anæsthesia, hypodermic, intramuscular and intravenous injection and lumbar puncture, a novel gag for adenoid and tonsil operations and an artificial larynx and various forms of speaking apparatus for use after total laryngectomy. —[33] The Surgical Manufacturing Co, Ltd (83 and 85, Mortimer-street, London, W 1) exhibited a series of instruments, including the "Barton" sphygmomanometer, the "Bard Parker" knife with removable blades; the Boyle-Davis mouth gag, the "Aurora-

pressure should be taken before and every five minutes during the operation The systolic pressure alone is of little value, and more importance should be attached to the diastolic pressure and the pulse pressure A comparison of these with the pulse-rate gave the earliest warning of the onset of shock, which might be prevented by the immediate administration of intravenous saline 3 The administration of nitrous oxide and oxygen alone Nitrous oxide acts only by depriving the brain of oxygen, and it did not affect the cells of other organs such as the heart and kidneys Its action ceased immediately its administration was stopped It was possible, provided the anæsthetist had thoroughly learnt the technique and the surgeon was gentle with his manipulations, to obtain complete relaxation in all abdominal operations, and consequently there was no necessity for ether or local infiltration Post-operative nausea and vomiting were extremely rare, and the patient came round without any struggling 4 In the preliminary treatment active purgation should be avoided and fluids should be given up to within half an hour of the operation Morphia, gr. ⅙, with scopolamine, gr. 1/200, should be given two hours before the operation and repeated in an hour's time During an operation he avoided the extreme Trendelenburg position even for pelvic operations, as it predisposed to shock Nitrous oxide-oxygen anæsthesia was quite suitable for cases of intestinal obstruction provided the intestinal contents were aspirated by an electrical suction pump through a small incision immediately the abdomen was opened In these cases intravenous saline was administered from the start

Dr C Langton Hewer (London) stated that gastric surgery made large demands upon the anæsthetist as it was that part of the abdomen in which respiratory movement was at its maximum, and relaxation might be difficult to produce as traction upon the peritoneum might result in laryngeal spasm. In addition shock and pulmonary complications were more liable to follow than after operations elsewhere He considered that endotracheal nitrous oxide-oxygen-ether anæsthesia was preferable to regional and splanchnic anæsthesia When the patient was fully anæsthetised a tracheal catheter was slipped between the vocal cords and a mixture of 50 per cent nitrous oxide and 50 per cent oxygen passed through ether was first employed The amount and proportions of the gases were regulated until the colour of the mucous membrane was just pink and the manometer showed a pressure of 5 mm Hg on inspiration At the end of the anæsthesia a mixture of 90 per cent oxygen and 10 per cent carbon dioxide was substituted in order to stimulate the respiratory centre and so cause forced breathing and the expulsion of the ether To avoid pulmonary complications atropine should be given in small doses repeated after the operation about 1/200 gr three times a day for three days being usually employed In this way a perfect anæsthesia for upper abdominal work was obtained, and when once a surgeon had operated with it he almost invariably preferred it for his other cases It was suitable for cases of intestinal obstruction as, should vomiting occur, owing to the positive pressure in the lungs there was no tendency for the vomit to be aspirated into the lungs

Mr Gordon Taylor said that he employed local infiltration of the abdominal wall together with splanchnic anæsthesia by the posterior method of Kappis and a light ether anæsthesia from the start The latter abolished all psychical shock, made the injection of the novocaine more easy, and less morphia and scopolamine were needed In addition, should the local and splanchnic anæsthesia fail towards the end of a long operation the general anæsthesia could be easily deepened The objection to the combined method was that the injection of the splanchnics by the posterior method took time and a sudden fall in the blood pressure might ensue The latter was only temporary and was associated with no rise in the pulse-rate The advantages were that pneumonia and chest complications were almost completely eliminated, long operations could be performed with little shock, there was complete relaxation, and the breathing was very quiet In the lower abdomen he used spinal with caudal anæsthesia

Mr K W Monsarrat (Liverpool) considered that no one method should be used as a routine, and the condition of the patient should be given due consideration With a powerful stout man gas and oxygen did not suffice and a general anæsthetic was necessary Where there was a liability to chest trouble he preferred warm ether given by the Shipway method With a general anæsthesia regional anæsthesia or local infiltration should always be carried out as it aided relaxation and prevented that collapse which followed if the skin incision were made when the anæsthesia was very light In operation upon the stomach and bowel he infiltrated the mesentery It was important to recognise the action of ether upon the pancreas Ketosis and acidosis might follow its use and were associated with changes in the blood-sugar These with the post-anæsthetic vomiting could be relieved by the injection of 10 units of insulin immediately after the operation, which could be repeated if necessary He strongly advised a preliminary consultation between the surgeon and the anæsthetist

Mr J P Lockhart-Mummery (London) considered that as yet we had not a very satisfactory local anæsthetic, as novocaine did not in all cases have sufficient penetrating powers Parasacral anæsthesia took longer than, and had no advantage over, spinal anæsthesia The fall in blood pressure that took place in the latter was purely mechanical and could be prevented by slightly tilting the table He now used regional or spinal anæsthesia combined with gas and oxygen For cases of acute intestinal obstruction he employed high spinal anæsthesia

Mr Cade considered that splanchnic anæsthesia had its dangers One was the intravenous injection of novocaine might occur and was dangerous as it led to a sudden fall in the blood pressure, it could be prevented by repeatedly withdrawing the piston during the injection A delayed reaction shown by a fall in the blood pressure and a rise in the pulse-rate might take place about the second day. He did not consider a general anæsthetic was necessary, as any psychical action could be avoided by the proper administration of hypnotics We were, he thought, too apt to refer to the possible damaging action of ether, while ignoring that which might result from large doses of drugs

---

EXHIBITION OF DRUGS, INSTRUMENTS, FOODS, AND APPLIANCES

The usual trade exhibition was opened in the Victoria Halls on Tuesday, July 20th The Mayor welcomed the Association and called on the President-Elect to open the exhibition Mr Hogarth said that the display had now become an essential and integral part of the annual meeting, and emphasised the debt of the profession to the firms which supplied them with their tools. There was true cooperation between them and the profession

There were 84 stalls, and a brief notice of the more important exhibits on each is given below

Drugs and Pharmaceutical Preparations

[1] Burroughs Wellcome and Co (The Wellcome Foundation, Ltd , Snow Hill Buildings, London, E C 1) had their exhibit ingeniously arranged on different coloured panels, each of which corresponded with an organ similarly coloured on a large anatomical chart Of their many "Tabloid," "Hypoloid," and "Soloid" products may be mentioned "Tabloid" Digitalis Leaf, grown in this country, physiologically standardised and containing the active principle, "Tabloid" hypodermic insulin hypochloride the only compressed British insulin and the "Wellcome" Brand materials for Schick and Dick tests, diphtheria prophylactic and diphtheria and scarlet fever antitoxins —[2] Boots Pure Drug Co , Ltd (Station-treet, Nottingham), showed a large selection of their s

Birmingham), showed the "Lawson Tait" special bedsteads for heart cases, for the Fowler position and for steady wheeling and standing.—[12] Hoskins and Sewell, Ltd (Bordesley, Birmingham), showed the new castor-pad fitting bed which can be wheeled on rubber-tyred castors or lowered on to rubber pads, the Sir Charles Brown Invalid Pan bedstead for bedridden cases, several special beds, lockers and slip-on bed rests the latter combined with "Burton's donkey" make a useful portable "Fowler" position apparatus

SPAS AND MEDICINAL AND MINERAL WATERS

[20] Harrogate drew attention to the recent development of their Nose and Throat and Ultra-violet treatment departments and the careful training of the Bathing Establishments staff —[31] Buxton has recently instituted a three-weeks' course "Cure Ticket" for £3 3s to dispose of the idea that spa treatment is expensive there is a new heating installation which, by means of calorifiers, keeps up a steady temperature of 150° F, thus retaining the gas in the water —[68] Droitwich has extended its hotel accommodation and has introduced freshly distilled water and "Wychna," a saline aperient water —[74] The Bath exhibit included a number of photographs, old prints and water-colour drawings and booklets describing the spa treatment and hotel accommodation —[38] Ingram and Royle, Ltd (45, Belvedere-road, London S E 1), displayed their bottled products, Vichy Celestins Contrexéville "Pavillon," Evian Cachat, Carlsbad Hunyadi Janos, &c —[60] W Gaymer and Sons, Ltd (Attleborough), showed their Cyder recommended for gout and rheumatism, and their "Perry" a sweeter pear drink —[11] Alexander Riddle and Co Ltd (58–60, Bancroft-road London E 1) showed their vitamin C drinks, Stowers' lime juice, and lemon and orange squash

FOOD PRODUCTS

[23, 29, 79] Horlick's Malted Milk Co, Ltd (Slough, Bucks), Benger's Food, Ltd (Otter Works, Manchester) and Virol Ltd (Hanger-lane Ealing, London, W 5), showed their well-known products Horlick's malted milk food and tablets, Benger's Food and digestive preparations; Virol, Virol and milk and Virolax —[28] Oxo, Ltd (Thames House, Queen-street-place, London, E C 4), drew attention to their unseasoned hospital Oxo, meat juice, and endocrine preparations standardised by physiological and chemical methods —[32] Glaxo (56, Osnaburgh-street, London, N W 1), in addition to Glaxo and Glax-Ovo, presented particularly their vitamin D preparation, "Ostelin" for promoting the absorption of calcium and phosphorus while avoiding the intolerance often shown towards other forms of cod-liver oil Ostelin is also prepared with malt extract and orange juice —[35] Trufood, Ltd (the Creameries, Wrenbury, Cheshire and Lever House, Blackfriars, E C 4), were showing Humanised Trufood, a spray milk closely analogous to human milk, Trufood Full-cream and Secway, a concentrated and very assimilable form of nourishment —[45] Cadbury Bros, Ltd (Bournville, England), had on their stand their different makes of chocolate, and drew attention to their special method of making cocoa so as to bring out the full flavour —[46] Keen, Robinson and Co, Ltd (Carrow Works, Norwich), showed "Almata," a complete synthetic food for infants and invalids, Robinson's "Patent" barley, groats, and Waverley oats, and Keen's mustard ointment, designed to take the place of mustard plasters —[52] Montgomerie and Co, Ltd (Ibrox Glasgow), showed "Berna" food for infants and adults and "Berna" malted food, which is largely used in hospitals and is particularly useful for the expectant mother —[54] Mead's Infant Diet Materials (Brooks and Warburton A D S Co), Ltd (40–42, Lexington-street, London, W 1), showed Mead's "Recolac," a reconstituted milk in which even the salts are prepared so as to correspond closely with human milk, the well-known "Dextri-maltose", protein milk and milk soup for sick infants, and a biologically standardised and tested Newfoundland cod-liver oil (Empire product) which has little taste or odour —[69] Brusson Foods, Ltd (311, Gray's Inn-road, London, W C 1), showed Brusson breads for diabetes and a gluten chocolate sweetened with saccharin —[77] S Guterman and Co, Ltd (35–6, Aldermanbury, London, E C 2) showed "Cereal Meal," a combination of cereal, agar-agar, flax-seed meal, and bran designed to produce large, soft easy evacuations They also showed a simple light and heat ray lamp, the "Adjusto Ray"

BOOKS

The following publishing houses had each a large series of interesting publications, of which only a few can be mentioned [8] H K Lewis and Co, Ltd (136–140, Gower-street, London, W C 1) "Health Legislation" by F Harvey; "Epilepsy a Functional Mental Illness" by R G Rows and W E Bond, Timbrell Fisher's "Manipulative Surgery", E M Brockbank's "Incapacity or Disablement in its Medical Aspects", L R Fifield's "Minor Surgery", and "The Clinical Examination of the Nervous System," by G H Monrad-Krohn —[17] J and A Churchill (7, Great Marlborough-street London, W 1) The "Recent Advances" series, including Obstetrics and Gynaecology and Biochemistry, the new edition of Craig's "Psychological Medicine," by Craig and Beaton, a new edition of Sequeira's "Diseases of the Skin" and the "Medical Directory"—[47] The Oxford University Press (Amen House, Warwick-square London, E C 4) Leonard Williams's "Obesity", Cope's "Treatment of the Acute Abdomen" and his "Early Diagnosis" in third edition, Tod's "Diseases of the Ear," fourth edition, "Pathology and Treatment of Diabetes Mellitus," by Graham, new edition, and a new series of 5s handbooks including Cameron on "Diseases of Children" and Gibson on "The Heart"—[78] John Wright and Sons, Ltd (Bristol) Geddes's "Puerperal Septicaemia", ninth edition of the "Index of Treatment" (Hutchison and Sherren); Carey Coombs's "Rheumatic Heart Disease", Lawford Knaggs's "Inflammatory and Toxic Diseases of Bone", "Urgent Surgery," by Felix Lejars, "The Cancer Review," first number, "The British Journal of Surgery" and the well-known "Synopsis" series —[84] W. B Saunders Company, Ltd (9, Henrietta-street, London W C 2) "Pediatrics," by 150 authorities, "Mayo Clinic Collected Papers, 1925", Bickham's "Operative Surgery", Berkeley Moynihan's "Abdominal Operations", Young's "Practice of Urology", G A L Morse's "Clinical Pediatrics", and "The Art of Medical Treatment" by F W Palfrey —[58] The Food Education Society (24, Tufton-street, Dean's Yard, London S W 1) showed their publications on dietetics and hygiene, including the popular "Facts for Patriots" series on food values; "The Pudding Lady's Recipe Book," and leaflets such as "The Nation's Health"

MEDICAL AGENCIES

[11] Arnold and Sons (50–52, Wigmore-street, London, W 1) had their "Medical Transfer" department represented on their stand —[55 and 56] The Medical Insurance Agency (c/o British Medical Association, B M A House, Tavistock-square, London, W C 1) had their usual literature and were also accompanied by an engineer from Mann, Egerton and Co, Ltd, to advise on all car matters —[66] The Medical Sickness, Annuity and Life Assurance Society, Ltd (300, High Holborn London, W C 1), had a representative to advise visitors on matters of life, sickness, and endowment assurance

MISCELLANEOUS

[24, 75] Among toilet preparations "Pepsodent," the acid dentifrice, and Kolynos Incorporated (Chenies-street, London, W C 1) demonstrated their well-known tooth creams —[63] The Museum Galleries (53, Short's-gardens, Drury-lane, London, W C 2) had an exhibit of engravings, including their "Gallery of 100 Famous Men and Women" and "The Cries of London," after Francis Wheatley, R.A.

scope" throat and ear apparatus, and an improved midwifery outfit —[15] Messrs Allen and Hanburys, Ltd (48, Wigmore-street, London, W 1), had a large selection of instruments, including a portable Mennell's universal voltage motor pump for blowing and sucking, Mennell's ether mixing apparatus for intratracheal anæsthesia, Howard Jones's mixing apparatus for intratracheal and open ether anæsthesia, Souttar's steam cautery; apparatus for testing the patency of the Fallopian tubes, and a complete set of gynæcological instruments as used by Comyns Berkeley and Victor Bonney, London Hospital catgut; the St Bartholomew's Hospital pattern operation table with various improvements, including ball-bearing wheels guaranteed not to require attention for ten years; and a series of the latest model Wolf boilable and large field cystoscopes —[49] Stille (Stockholm, Sweden) exhibited a selection from surgical instruments which the firm has been making from best Swedish steel since 1841 Many were of stainless steel The British agents are Ogilvy and Co, 20, Mortimer-street, London, W 1 —[70] The Holborn Surgical Instrument Co, Ltd (26, Thavies Inn, Holborn-circus, London, E C 1), showed daylight surgical lamps for ophthalmoscopy, &c, giving a white light through blue glass, the "Minop" knife with detachable blades and cases for keeping the blades in disinfectant solution, a new sphygmomanometer with unspillable tube and wider mercury column, and a large assortment of stainless steel, including pocket dressing-cases —[76] John Weiss and Son, Ltd (287, Oxford-street, London, W 1), included in their exhibit Ryall's cysto-urethroscope, a cystoscopic lithotrite, new models in ophthalmic instruments, including Bishop Harman's ring adaptable to any forceps, and Harrison Butler's squint instrument

Among the Special Instruments —[5] P H Zeal, Ltd (75 and 77, St John-street, London, E C 1), showed their "Repello" thermometer and "Acello" re-setting case, an aseptic glass clinical thermometer, and various other types of recording instruments, including surface thermometers and urinometers — [13] Rayner and Keeler, Ltd (9, Vere-street, Cavendish-square, London, W 1), showed ophthalmic instruments, including a single beam operating lamp and stand, a large model May ophthalmoscope, allowing much more light than small instruments; and Zeiss instruments, including slit lamps and corneal microscopes They also had a display series of drawings and fundus paintings —[51] Alexander and Fowler (59A, Pembroke-place, Liverpool) showed the "Constanta" truss, with moulded pelvic band, no perineal strap and control spring to the pad The special link attachment to the band allows parallelism to the abdominal wall under all conditions —[25] The Inhaling Drug and Apparatus Co, Ltd (30, Grosvenor-place, S W 1), showed the Spiess-Drager drug nebulising and inhaling apparatus for asthma, emphysema, &c —[83] Theodore Hamblin, Ltd (15, Wigmore-street, London, W 1), showed a number of ophthalmic instruments, including a recently improved Lister perimeter and scotometer, the new Lister hand projection lamp, the 1925 astigmatic chart, a new series of stereoscopic pictures designed to make the promotion of binocular vision more interesting to children, and a selection of ophthalmic drawings by Hamblin's staff of skilled draughtsmen —[18] H E Curtis and Son, Ltd (7, Mandeville-place, London, W 1) showed the "Curtis" abdominal support for ptosis and other belts and trusses, and "Kaylene," a pure hydrated silicate of alumina for gastro-intestinal intoxication, it is supplied pure and combined with saline, mint, laxative, and paraffin respectively —[39] Short and Mason, Ltd ("Tycos") (Atlantic House, 45–50, Holborn-viaduct London, E C 1) showed their "Tycos" sphygmomanometers, both portable and surgery types, standard calibration, self-verifying, jewelled movements ensuring extreme sensitivity in action

Aids for the Deaf —[36] General Acoustics, Ltd (77, Wigmore-street, London, W 1), showed their latest models in aids for the deaf, electrical and non-electrical, particularly the shell type and the small button type, and the multiple acousticon for large gatherings —[44] "Ardente Acoustique" (Mr R H Dent) (95, Wigmore-street, London, W 1) had several new small models, one ear-piece the size of a shilling, and a microphone the size of a florin; also a stethoscope for deaf doctors —[11] Arnold and Sons (John Bell and Croyden, Ltd) (50–52, Wigmore-street, London, W 1) were also showing electrical and non-electrical aids for the deaf from their stock, which includes all makes

Artificial Limbs —[40] Chas A Blatchford and Sons, Ltd (90, Clapham-road, London, S W 9), showed their new artificial leg, which is held on by suction and requires no harness of any kind, also other appliances for amputations and mutilations —[43] Pedestros, Ltd (26, Langham-street, London, W 1), had a comprehensive display of light metal limbs

X Ray and Light Apparatus —[57] Gray and Selby (27–29, Pelham-street, Nottingham) had a demonstration of British-made ultra-violet radiation apparatus, instruments, and microscopes —[62] The British Hanovia Quartz Lamp Co, Ltd (Slough), showed a number of patent models, including the water-cooled Kromayer lamp for treatment of small areas and orifices, a standard metal alpine-sun lamp for direct connexion to direct or alternating currents, with greatly improved and simplified action —[65] Ajax, Ltd (117, Central-street, London, E C 1) showed portable ultra-violet ray apparatus, including tungsten arc lamp, portable poly metallic carbon arc, Sundiray arc, and a table-model mercury-vapour quartz burner apparatus —[71] The Dowsing Radiant Heat Co, Ltd (91–93, Baker-street, London, W 1), showed apparatus for radiant heat treatment, particularly a special tungsten lamp, the "Ultra-Vi," fitted with special glass bulb and screens and suitable for home use, as it can be applied for periods up to 30 minutes —[6] Kodak, Ltd (Kingsway, London, W C 2), showed X ray negatives made on Eastman "Duplitized" film, including dental negatives, illustrating the new "Bite-wing" system for the early detection of interproximal cavities, and small positive reproductions, and a new method of cholecystography, the sensitising preparation being administered orally or by intravenous injection

ACCESSORIES AND HOSPITAL EQUIPMENT

[7] Cuxson, Gerrard and Co, Ltd (Oldbury, near Birmingham), showed a range of "Sanoid" catgut, sterilised in triplicate, an assortment of surgical and medical plasters, including rubber adhesive strapping on holland for orthopædic work, and the "Zudor" jacket for pneumonia —[82 and 34] The Thermogene Co, Ltd (Haywards Heath, Sussex), and the Denver Chemical Manufacturing Co displayed their well-known products, "Thermogene" and "Antiphlogistine"—[30] Fassett and Johnson, Ltd, exhibited a full range of Seabury and Johnson plasters, dressings, and requisites, including "Mead's" rubber adhesive plaster, "Gold Cross" absorbent cotton, and "Argyrol" silver vitelin —[61] Manlove Alliott and Co, Ltd (Bloomsgrove Works, Nottingham), showed a complete range of steam and gas-heated sterilising apparatus for hospital use, especially one with a waterlute for avoiding the collection of steam in the apparatus, and a gas incinerator for small parcels of objectionable refuse —[64] Messrs Chas Hearson and Co, Ltd (68, Willow-walk, London, S E 1), had a general research laboratory exhibit, including all-metal drying ovens, centrifuges, particularly a new high-speed model (3–10,000 revs) for ultramicroscopic viruses, and the Dartfield illuminator for spirochætes, workable off a house current —[80] Baird and Tatlock (London), Ltd (14–15, Cross-street, Hatton Garden, London, E C 1), showed laboratory apparatus, including Thompson Chard filter, Stanford's pipette, Ayling's automatic fillers, Garrow's agglutination apparatus, Schuster's respiration pump, incubators, milk sedimentation apparatus, and autoclaves, all made in their own factory at Walthamstow —[10] Whitfields Bedsteads, Ltd (109–125, Watery-lane, Bordesley,

THE LANCET.

LONDON: SATURDAY, AUGUST 7, 1926

SCIENCE AND THE STATE

THE PRINCE OF WALES has been up and down the world a good deal, and he has kept his eyes open And, as he told the British Association at Oxford in his presidential address on Wednesday evening, if a man does that he cannot help picking up a certain amount of information The tale he tells of his experiences and impressions will vary with his audience but we hardly think that it was merely in compliment to his hearers that he devoted his speech to science, progress, and the State Rather we believe that he was glad to have the opportunity of affirming in sympathetic surroundings his conviction of the high importance of scientific method and scientific knowledge to the needs of civilisation to-day Everywhere, he says as an onlooker he has seen the same thing—in factories mines education, health agriculture, transport, housing, and war—that progress consists in applied science, and that it is on the sincere pursuit of knowledge that man must depend to keep and improve his control over his surroundings and so maintain his frail body in a naturally unfriendly environment at the top of the biological hierarchy If such is the truth—and it can fail to be true only in so far as it does not take into account the whole of human life—the relation of the State to scientific work plainly becomes a matter of as much moment as any of its other organised activities, and the PRINCE traced in a most interesting way the development of this connexion, slowly and tentatively during the nineteenth century, quicker in the twentieth, and then with a rush which got the impetus of the war behind it and gave us the Medical Research Council, the Committee for Scientific and Industrial Research, the Development Commission, the National Physical Laboratory, and all the other outward and visible signs of the change in the heart of Whitehall Such is the present development of the ideas put forward by DAVID BREWSTER when he was President in 1850 and urged again from the chair by the PRINCE CONSORT in 1859 If he had lived we may be sure that PRINCE ALBERT would have given a large share of his life of laboured toil to procuring the diffusion of useful knowledge of which the invention of the 1851 Exhibition was a practical example We can trust that the present President will not let his interest flag with his year of office and that he will use his influence for the promotion of that natural knowledge of which he recognises the value so well

When the Association met in Oxford in 1832, KEBLE and others were horrified that honorary degrees should be conferred on some of the famous men who came to the meeting When the Museum was built 70 years ago, it was not with the unanimous approval of everyone But this feeling of antagonism, this strain toning down to uneasiness, has now gone or almost gone, and in few universities is natural science viewed more sympathetically and reasonably than in Oxford, indeed, it seems sometimes as if the humanities understood science better than science understood the humanities This reconciliation has not been brought about by these aspects of scientific work which are the main theme of the PRINCE's speech, the complement of which may be found in Dean INGE's Fison Memorial Lecture at Guy's Hospital Harmony has come not by realising that science enables us to fly to Amsterdam for afternoon tea, to listen to the opera on the sofa, to have a tolerably perfect apple to eat on any day of the year, but by perceiving that in its larger movements it has all the æsthetic, cultural, and spiritual value of literary studies The Victorian comparative anatomists and the Georgian physicists developed conceptions at the intellectual level, of the educational value, and with the emotional appeal of Greek and Latin literature, philosophy and history Lately philosophers and mathematicians have found that their subject matters actually overlap And natural science has won its recognition not because it is requisite for the body, but because it is necessary for the soul, and equally with the older disciplines helps men to get nearer to their ultimate goal of goodness, truth, and beauty So the dialectics of WILBERFORCE and HUXLEY, which appear to be all that anyone recalls of the second Oxford meeting in 1860, seem to us nowadays rather cheap and wholly beside the point The "*Origin of Species*" has now settled into its place in our mental fabric By the time the fifth Oxford meeting is held people at large may be clever enough to apprehend the revolution of relativity What will the presidential address then be about?

COMBINED ANÆSTHESIA IN ABDOMINAL SURGERY.

THE inter sectional discussion on anæsthesia at the recent meeting of the British Medical Association in Nottingham, reported on another page, was remarkable for the number of surgeons who took a leading part in it Prof FINSTERER, whose masterly review covered in turn the fields of general anæsthesia, of regional anæsthesia, and of combined methods, made good his point that though of much general utility, ether and chloroform have serious defects as routine anæsthetics They both cause a fall in blood pressure, they do not protect the brain efficiently from afferent impulses, they may lead to cellular degeneration in the liver, kidneys, and other parenchymatous organs, and they invite the onset of pulmonary complications From many of these defects nitrous oxide gas is free, and in America especially it has been used on an enormous scale; in Austria its use has been abandoned on account of the expense, and ether is employed by Viennese surgeons when a general anæsthetic is indispensable Recent years have, however, witnessed a remarkable development in regional methods, and these have now reached such perfection in Vienna that practically any operation can be carried out painlessly by their means Prof FINSTERER gave the strength and quantity of the novocaine solution generally employed By their use afferent impulses are so completely blocked that the patient does not suffer from post-operative toxic disturbance When, as in an extensive laparotomy, it is essential for the peritoneum of the posterior wall as well as of the anterior to be anæsthetic, this is effected either by injection of the mesentery, which even under genera

In the Marne district lived a lady who possessed a small but valuable collection of pictures She was driven out of her house by the invasion, but on her return found it intact, but no pictures Eventually she found them behind a curtain, together with the following note, written in French by a lieut -major of Hesse Darmstadt "I congratulate you on your Moreau and sundry other small pictures As an artist myself, I know their value and have put them on one side to preserve them "

The book is one to be read at leisure, and the various deeds therein described are to be wholeheartedly admired

JOURNALS

JOURNAL OF PATHOLOGY AND BACTERIOLOGY Vol XXIX No 3 Pp 225–324 July, 1926 —The Enterococcus, by S V Bagger (Copenhagen) The intestinal streptococcus known to the French as the enterocoque, but little recognised in this country under that name, is defined from a study of 150 strains It differs from other streptococci mainly in its high heat resistance and its ability to grow in bile media —An Epithelial Tumour in the Spleen of a Rabbit, by N D Ball (London). A curious formation of what appears to be intestinal epithelium which presumably represents some developmental misplacement —The Nature of the "Oat-celled Sarcoma" of the Mediastinum, by W G Barnard (London) The tumour is really a carcinoma of lung —Polyarteritis Acuta Nodosa, by J Gray (Aberdeen) A characteristic example of this curious condition, apparently following an obscure infection of the leg —The Receptor Structure of *Vibrio choleræ* (*V. comma*), with Observations on Variations in Cholera and Cholera-like Organisms, by I Balteanu (London) Like the typhoid-paratyphoid group, the cholera vibrio contains two series of antigens, heat-stable and heat-labile, and probably representing the somatic and flagellar parts of the bacillary body The author also describes an aflagellar variant growing in opaque colonies in which the heat-stable antigen was alone present in approximately normal amounts This thorough study should be consulted in detail by those interested in bacterial variation —The Third Agglutinating System in Human Blood, by F W Simson (Sheffield) The observations of Guthrie and Huck and of others on the existence of a third agglutinin and receptor (C) in human blood are fully confirmed Their existence is rarely demonstrable by direct agglutination, but absorption experiments show that either the agglutinin or the agglutinable substance is present in the serum or red corpuscles respectively of a large proportion of persons This third element makes no difference to the ordinary system of grouping, its existence, however, strengthens the conclusion that direct cross-agglutination between the proposed donor and the recipient should be practised in all transfusions —The Nutritive Requirements of Growing Cells, by T B Heaton (Oxford) Up to about the eleventh day of incubation the tissues of chick embryos grow well in a saline medium, older tissues require growth-promoting substances in addition, of which the author distinguishes two—one necessary for fibroblasts and one, abundant in yeast and possibly vitamin B, necessary for epithelia There is, too, another substance, present in yeast and in many adult mammalian organs, which inhibits the growth of fibroblasts —Complement Fixation with Bilharzia, by A. W Turner (Melbourne) Anaphylactic experiments do not confirm Le Bas's suggestion that Fairley's extract for diagnosing bilharzia infection contains protein —Carcinoid Tumour of the Ileum with Metastases, by C E Dukes and P Lockhart-Mummery (London) The basal-celled cancers of the ileo-cæcal region seldom give rise to secondary growths, which in this case were found in the peritoneum, liver, and regional lymph glands —The Influence of Locally Injected Indian Ink on the Intracutaneous Response to Vaccinia and Other Viruses, by J C G Ledingham (London) Occupation of the reticulo-endothelial system by Indian ink much diminishes or prevents the local reaction to vaccinia virus, streptococci, and diphtheria toxin —A Combination of Bismuth and Sodium Sulphite Affording an Enrichment and Selective Medium for the Typhoid-paratyphoid Groups of Bacteria, by W J Wilson and E M M'V Blair (Belfast) Another of Prof Wilson's useful pieces of technique —Proceedings of the Thirty-third Meeting of the Society —Lamb Dysentery, by T Dalling (London) The disease, in places where it generally kills 20–30 per cent of the new-born lambs, may be almost entirely prevented by dosing the lambs with a mixture of *coli* and *welchii* antisera or, more conveniently, by immunising the pregnant ewes with *coli* vaccine and a *welchii* toxin-antitoxin mixture —Aminostyryl Quinoline and Aminoanil Quinoline Compounds, by C H Browning, J B Cohen, S Ellingworth, and R Gulbransen (Glasgow and Leeds) These new trypanocidal agents have a powerful curative effect on mice and rabbits infected with *T brucei;* they are not suitable for intravenous injection —The Different Immunising Values of Vaccines Made with Smooth and Rough Forms of Bacteria, by J A Arkwright (London) The smooth form of paratyphoid A is more virulent and makes a better vaccine than the rough form —The Value of Taurine for Promoting the Growth of the Gonococcus, by J Gordon (Leeds) The effect is attributed to a lowering of surface tension and a concentration of the taurine on the surfaces of the bacilli —Immunity Produced by the Schick Test, by R A O'Brien (London) The minute doses of diphtheria toxin used in Schick tests are capable of rousing an active immunity —The Histological Criteria of Ulcer-Cancer of the Stomach, by M J Stewart (Leeds) The important evidence of chronic ulceration is destruction of the muscular coat, the pitfall in the diagnosis of carcinoma is the misinterpretation of misplaced epithelium which is much more common in the stomach than is supposed Of 260 stomachs removed surgically, 163 showed simple chronic ulcer, 80 cancer only, and 17 both

Reports and Analytical Records.

RYVITA CRISP BREAD (MIXED)

(THE RYVITA CO, 96, SOUTHWARK STREET, S E 1)

THIS crisp bread (Knäckerbrod), imported from Sweden, is prepared from crushed whole rye The crisp bread is made up in the form of perforated rectangular biscuits, 4 in by 2½ in by ⅛ in, which are very palatable, especially if eaten with butter There is more character in the flavour of rye than in wheat, and the food value of the former needs no comment

The crisp bread is sold in two forms, light and dark, the latter presumably being more heavily baked On analysis the following results were obtained —

	Light crisp bread, per cent	Dark crisp bread, per cent
Carbohydrates, altered starch, hemicellulose, &c	74 8	73 6
Protein	11 6	12 6
Moisture	9 0	9 3
Ash	1 8	2 1
Fat	1 3	1 0
Fibre	1 5	1 4
Calorie value per lb	1662	1613

Ryvita crisp bread, which keeps well and does not readily become "slack," is easily masticated and digested, and is a useful and palatable addition to the diet The calorie value shows it to be a concentrated form of food

THE LANCET.

LONDON: SATURDAY, AUGUST 7, 1926

SCIENCE AND THE STATE.

THE PRINCE OF WALES has been up and down the world a good deal and he has kept his eyes open. And as he told the British Association at Oxford in his presidential address on Wednesday evening if a man does that he cannot help picking up a certain amount of information. The tale he tells of his experiences and impressions will vary with his audience but we hardly think that it was merely in compliment to his hearers that he devoted his speech to science progress and the State. Rather we believe that he was glad to have the opportunity of affirming in sympathetic surroundings his conviction of the high importance of scientific method and scientific knowledge to the needs of civilisation to-day. Everywhere he says as an onlooker he has seen the same thing—in factories mines education health agriculture, transport housing, and war—that progress consists in applied science and that it is on the sincere pursuit of knowledge that man must depend to keep and improve his control over his surroundings and so maintain his frail body in a naturally unfriendly environment at the top of the biological hierarchy. If such is the truth—and it can fail to be true only in so far as it does not take into account the whole of human life—the relation of the State to scientific work plainly becomes a matter of as much moment as any of its other organised activities, and the PRINCE traced in a most interesting way the development of this connexion slowly and tentatively during the nineteenth century, quicker in the twentieth, and then with a rush which got the impetus of the war behind it and gave us the Medical Research Council, the Committee for Scientific and Industrial Research, the Development Commission, the National Physical Laboratory, and all the other outward and visible signs of the change in the heart of Whitehall. Such is the present development of the ideas put forward by DAVID BREWSTER when he was President in 1850 and urged again from the chair by the PRINCE CONSORT in 1859. If he had lived we may be sure that PRINCE ALBERT would have given a large share of his life of laboured toil to procuring the diffusion of useful knowledge of which the invention of the 1851 Exhibition was a practical example. We can trust that the present President will not let his interest flag with his year of office and that he will use his influence for the promotion of that natural knowledge of which he recognises the value so well.

When the Association met in Oxford in 1832, KEBLE and others were horrified that honorary degrees should be conferred on some of the famous men who came to the meeting. When the Museum was built 70 years ago, it was not with the unanimous approval of everyone. But this feeling of antagonism, this strain toning down to uneasiness has now gone or almost gone and in few universities is natural science viewed more sympathetically and reasonably than in Oxford; indeed, it seems sometimes as if the humanities understood science better than science understood the humanities. This reconciliation has not been brought about by these aspects of scientific work which are the main theme of the PRINCE'S speech the complement of which may be found in Dean INGE'S Fison Memorial Lecture at Guy's Hospital. Harmony has come not by realising that science enables us to fly to Amsterdam for afternoon tea to listen to the opera on the sofa, to have a tolerably perfect apple to eat on any day of the year but by perceiving that in its larger movements it has all the æsthetic, cultural, and spiritual value of literary studies. The Victorian comparative anatomists and the Georgian physicists developed conceptions at the intellectual level, of the educational value, and with the emotional appeal of Greek and Latin literature philosophy and history. Lately philosophers and mathematicians have found that their subject matters actually overlap. And natural science has won its recognition not because it is requisite for the body, but because it is necessary for the soul and equally with the older disciplines helps men to get nearer to their ultimate goal of goodness, truth and beauty. So the dialectics of WILBERFORCE and HUXLEY, which appear to be all that anyone recalls of the second Oxford meeting in 1860 seem to us nowadays rather cheap and wholly beside the point. The Origin of Species has now settled into its place in our mental fabric. By the time the fifth Oxford meeting is held people at large may be clever enough to apprehend the revolution of relativity. What will the presidential address then be about?

COMBINED ANÆSTHESIA IN ABDOMINAL SURGERY.

THE inter-sectional discussion on anæsthesia at the recent meeting of the British Medical Association in Nottingham, reported on another page, was remarkable for the number of surgeons who took a leading part in it. Prof. FINSTERER, whose masterly review covered in turn the fields of general anæsthesia of regional anæsthesia and of combined methods, made good his point that though of much general utility, ether and chloroform have serious defects as routine anæsthetics. They both cause a fall in blood pressure, they do not protect the brain efficiently from afferent impulses they may lead to cellular degeneration in the liver, kidneys, and other parenchymatous organs, and they invite the onset of pulmonary complications. From many of these defects nitrous oxide gas is free, and in America especially it has been used on an enormous scale; in Austria its use has been abandoned on account of the expense, and ether is employed by Viennese surgeons when a general anæsthetic is indispensable. Recent years have, however witnessed a remarkable development in regional methods and these have now reached such perfection in Vienna that practically any operation can be carried out painlessly by their means. Prof. FINSTERER gave the strength and quantity of the novocaine solution generally employed. By their use afferent impulses are so completely blocked that the patient does not suffer from post-operative toxic disturbance. When as in an extensive laparotomy, it is essential for the peritoneum of the posterior wall as well as of the anterior to be anæsthetic, this is effected either by injection of the mesentery, which even under genera

In the Marne district lived a lady who possessed a small but valuable collection of pictures She was driven out of her house by the invasion, but on her return found it intact, but no pictures Eventually she found them behind a curtain, together with the following note, written in French by a lieut -major of Hesse Darmstadt "I congratulate you on your Moreau and sundry other small pictures As an artist myself, I know their value and have put them on one side to preserve them "

The book is one to be read at leisure, and the various deeds therein described are to be wholeheartedly admired

JOURNALS

JOURNAL OF PATHOLOGY AND BACTERIOLOGY Vol XXIX No 3 Pp 225-324 July, 1926 — The Enterococcus, by S V Bagger (Copenhagen) The intestinal streptococcus known to the French as the enterocoque, but little recognised in this country under that name, is defined from a study of 150 strains It differs from other streptococci mainly in its high heat resistance and its ability to grow in bile media —An Epithelial Tumour in the Spleen of a Rabbit, by N D. Ball (London) A curious formation of what appears to be intestinal epithelium which presumably represents some developmental misplacement —The Nature of the "Oat-celled Sarcoma" of the Mediastinum, by W G Barnard (London). The tumour is really a carcinoma of lung —Polyarteritis Acuta Nodosa, by J Gray (Aberdeen) A characteristic example of this curious condition, apparently following an obscure infection of the leg —The Receptor Structure of *Vibrio choleræ* (*V. comma*), with Observations on Variations in Cholera and Cholera-like Organisms, by I Balteanu (London) Like the typhoid-paratyphoid group, the cholera vibrio contains two series of antigens, heat-stable and heat-labile, and probably representing the somatic and flagellar parts of the bacillary body. The author also describes an aflagellar variant growing in opaque colonies in which the heat-stable antigen was alone present in approximately normal amounts This thorough study should be consulted in detail by those interested in bacterial variation —The Third Agglutinating System in Human Blood, by F W Simson (Sheffield) The observations of Guthrie and Huck and of others on the existence of a third agglutinin and receptor (C) in human blood are fully confirmed Their existence is rarely demonstrable by direct agglutination, but absorption experiments show that either the agglutinin or the agglutinable substance is present in the serum or red corpuscles respectively of a large proportion of persons This third element makes no difference to the ordinary system of grouping; its existence, however, strengthens the conclusion that direct cross-agglutination between the proposed donor and the recipient should be practised in all transfusions —The Nutritive Requirements of Growing Cells, by T B Heaton (Oxford) Up to about the eleventh day of incubation the tissues of chick embryos grow well in a saline medium: older tissues require growth-promoting substances in addition, of which the author distinguishes two—one necessary for fibroblasts and one, abundant in yeast and possibly vitamin B, necessary for epithelia There is, too, another substance, present in yeast and in many adult mammalian organs, which inhibits the growth of fibroblasts — Complement Fixation with Bilharzia, by A. W Turner (Melbourne) Anaphylactic experiments do not confirm Le Bas's suggestion that Fairley's extract for diagnosing bilharzia infection contains protein — Carcinoid Tumour of the Ileum with Metastases by C E Dukes and P. Lockhart-Mummery (London) The basal-celled cancers of the ileo-cæcal region seldom give rise to secondary growths which in this case were found in the peritoneum, liver, and regional lymph glands —The Influence of Locally Injected Indian Ink on the Intracutaneous Response to Vaccinia and Other Viruses, by J C G Ledingham (London). Occupation of the reticulo-endothelial system by Indian ink much diminishes or prevents the local reaction to vaccinia virus, streptococci, and diphtheria toxin —A Combination of Bismuth and Sodium Sulphite Affording an Enrichment and Selective Medium for the Typhoid-paratyphoid Groups of Bacteria, by W J Wilson and E M M'V Blair (Belfast) Another of Prof Wilson's useful pieces of technique —Proceedings of the Thirty-third Meeting of the Society —Lamb Dysentery, by T Dalling (London) The disease, in places where it generally kills 20–30 per cent of the new-born lambs, may be almost entirely prevented by dosing the lambs with a mixture of *coli* and *welchii* antisera or, more conveniently, by immunising the pregnant ewes with *coli* vaccine and a *welchii* toxin-antitoxin mixture — Aminostyryl Quinoline and Aminoanil Quinoline Compounds, by C H Browning, J B Cohen, S Ellingworth, and R Gulbransen (Glasgow and Leeds) These new trypanocidal agents have a powerful curative effect on mice and rabbits infected with *T brucei*, they are not suitable for intravenous injection —The Different Immunising Values of Vaccines Made with Smooth and Rough Forms of Bacteria, by J A Arkwright (London) The smooth form of paratyphoid A is more virulent and makes a better vaccine than the rough form —The Value of Taurine for Promoting the Growth of the Gonococcus, by J Gordon (Leeds) The effect is attributed to a lowering of surface tension and a concentration of the taurine on the surfaces of the bacilli —Immunity Produced by the Schick Test, by R A O'Brien (London) The minute doses of diphtheria toxin used in Schick tests are capable of rousing an active immunity.—The Histological Criteria of Ulcer-Cancer of the Stomach, by M J Stewart (Leeds) The important evidence of chronic ulceration is destruction of the muscular coat, the pitfall in the diagnosis of carcinoma is the misinterpretation of misplaced epithelium which is much more common in the stomach than is supposed Of 260 stomachs removed surgically, 163 showed simple chronic ulcer, 80 cancer only, and 17 both

Reports and Analytical Records.

RYVITA CRISP BREAD (MIXED)

(THE RYVITA CO, 96, SOUTHWARK-STREET, S E 1)

THIS crisp bread (Knäckerbrod), imported from Sweden, is prepared from crushed whole rye The perforated crisp bread is made up in the form of rectangular biscuits, 4 in by 2½ in by ⅛ in, which are very palatable, especially if eaten with butter There is more character in the flavour of rye than in wheat, and the food value of the former needs no comment

The crisp bread is sold in two forms, light and dark, the latter presumably being more heavily baked On analysis the following results were obtained —

	Light crisp bread, per cent.	Dark crisp bread, per cent
Carbohydrates, altered starch, hemicellulose, &c	74 8	73 6
Protein	11 6	12 6
Moisture	9 0	9 3
Ash	1 8	2 1
Fat	1 3	1 0
Fibre	1 5	1 4
Calorie value per lb	1662	1613

Ryvita crisp bread, which keeps well and does not readily become 'slack,' is easily masticated and digested, and is a useful and palatable addition to the diet. The calorie value shows it to be a concentrated form of food

Annotations.

"Ne quid nimis"

SCHOOL-BOY DIET

THE science of dietetics, even allowing for the impetus given by the new knowledge of accessory food factors, has not kept pace with recent advance in other branches of medicine Practically all the dietaries in use at institutions and large communal centres no less than in individual homes when feeding is not simply haphazard are based on standards hallowed by custom alone and based on unproven or insufficient data Few observations in the literature of nutrition are comparable in experimental validity with Dr Corry Mann's report just issued[1] by the Medical Research Council While the importance of milk as an item in the diet of children has long been widely recognised, it is nevertheless startling to learn that the addition of one pint of milk a day to a diet which by itself satisfied the appetite of growing boys could convert an average annual gain of weight of 3 85 lb per boy into one of 6 98 lb per boy, and an average increase of height from 1 84 inches per boy to 2 63 inches per boy, and that coincident with this striking increase in weight and height the boys were obviously more fit than those in the other groups" The investigation was carried out during the four years beginning December, 1921, at a colony of some 500 boys housed in a model settlement of the villa type, with 30 to 35 boys in each house The conditions for a controlled experiment were ideal The institution is situated in a healthy spot some eleven miles from London Sleeping and living accommodation are excellent, as well as the control and discipline of the boys Three weeks' leave of absence are allowed in August and 10 days at Christmas, but only a few of the boys availed themselves of it, so that for the most part there was no break in the observations upon nutrition and growth during a considerable period of the school age, amounting in some cases to a continuous residence of four years without any disturbing social or environmental factor The boys, who are all of foundling type from the South of England were examined to exclude the possibility of latent or active disease and were graded A1 to B3, equal numbers of the same age and grade being assigned as far as possible to the various houses A preliminary observation from December, 1921, till March, 1922, was maintained upon the boys in order to demonstrate that, among other things, the basic diet was of adequate physiological value, which is defined in the report as "one which provides the necessary energy for basal metabolism and excretion loss besides additional calories for the minimum requirements of growth and activity"

The report sets out in its entirety the daily basal diet of the boys with the daily and seasonal variations, the calorie value of each ingredient and each portion, and the relative proportions of proteins and fats (animal and vegetable) and carbohydrates The average number of calories per day per boy was 1916, each boy receiving protein, fat, and carbohydrate in the proportion of 13 18 68 Dr Mann suggests that while this distribution compares favourably with the dietary of working-class homes, a better proportion would be 15 35 50, Control of the basic diet was maintained by weighing maximum and minimum samples at the table, disregarding the total amounts issued from store The samples taken were then subjected to skilled analysis Sixty-one boys who received only the basic diet of the village gained an average of 3 85 lb per boy and grew an average of 1 84 inches per boy during 12 months, and these average increments were maintained in 38 boys who remained under observation for two years Mere increase in weight and height was not considered enough to establish the existence of good general health, but full clinical examinations were systematically made on each boy On these findings the basic diet appeared to be of adequate calorie value for the control of the diet was intimate, individual idiosyncrasy becoming negligible when dealing with such numbers, and the length of the investigation levelling any seasonal variation The object of the research was how to discover whether increase in height and weight could be obtained best by giving extra calories e g by adding sugar or fat, or by giving fat with vitamin, or by giving vitamin alone or whether the biological value of the diet could be readily enhanced by giving an additional ration of animal protein or by giving milk which supplies so many factors in an easily assimilable form Forty-one boys received a ration extra to the basal diet of 1 pint (388 calories) of fresh cow's milk—pasteurised and homogenised, and these boys gained an average of 6 98 lb per boy and grew an average of 2 63 inches per boy in 12 months Twenty-three boys who were under observation for two years gained an average of 13 17 lb per boy and gained in height an average of 5 21 inches per boy It is remarked that these boys could be picked out by a casual visitor as being so obviously more generally fit and there was a complete absence of illness among them during a period when in the other houses there was a higher sick-rate than usual Twenty boys received a daily addition of 3 oz of castor sugar (350 calories), and gained an average of 4 93 lb per boy, and grew an average of 1 91 inches per boy in 12 months Twenty-six boys received an additional ration of 1¾ oz of grass fed New Zealand butter (387 calories)—this butter had a uniformly high vitamin A content as tested on rats by Dr K H Coward in University College, these boys gained an average of 6 30 lb per boy, and grew an average of 2 22 inches per boy in 12 months Sixteen boys received an additional ration of 1¾ oz of vegetable margarine (379 calories)—Dr Coward reports that rats required ten times the amount of this vitamin deficient margarine to produce results comparable with New Zealand butter, these boys gained an average of 5 21 lb per boy, and grew an average of 1 84 inches per boy in 12 months Thirty boys received ¾ oz of edible casein (65 calories) as an additional ration—this approximately doubled the amount of animal protein in the basic diet—they gained an average of 4 01 lb per boy, and grew an average of 1 76 inches per boy Twenty-six boys received in addition to the basic diet ¾ oz of fresh watercress, they gained an average of 5 42 lb per boy and grew an average of 1 70 inches per boy in 12 months

Dr M Greenwood and Miss E M Newbold have statistically analysed these results and they state that "the general concordance of the results in the different groups inspires confidence in their stability in spite of the small numbers in some of the subgroups" They conclude that "the milk and butter groups both show definite excess increase in weight over the basic group, and of the same order but slightly higher for the milk group . the milk group shows a definite excess growth in height over the basic group the excess growth of the butter group over the basic is not significant and is only one-third that of the milk group" This eminently practical research clearly shows that an accepted diet was deficient in full biological value The striking result obtained was not due to the relatively small increase in calorie value, but to the specific qualities of milk as a food, and while we can await with patience the decision as to what precise factors caused this result, the immediate lesson to be drawn from the report is the necessity for finding trustworthy standards of growth and nutrition anæsthesia may be found advisable for the sake of diminishing operative shock, or by means of splanchnic anæsthesia In this the region of the semilunar ganglia is infiltrated with novocaine before operation from behind by the method of Kappis, or after the abdomen has been opened by the method of Braun The former, which has obvious advantages, has already been tested by English, French, and American surgeons, whilst in Vienna Prof FINSTERER has an experience of each method in over 800 cases The statistics which he presented were sufficient proof of the brilliant results obtained, including as they did many operations of the first magnitude, carried through without the use of general anæsthesia One complicated gastrectomy occupied five hours, at the end of which time the patient left the theatre carrying on a lively discussion with the surgeon Continuous observation of the blood pressure is a useful criterion by which to determine the continuance of any operation, the pulse-rate being taken into account at the same time, a point which was emphasised in the discussion by Dr C W MOOTS, of Toledo, U S A, who was also a strong advocate of nitrous oxide While the audience was greatly impressed by the Vienna experience, it will take much persuasion to convince surgeons in this country that the final word is not with the combined methods which relieve both patient and surgeon of the anxieties of having a conscious subject, and which abolish at the same time those afferent impulses which CRILE and other workers have shown to play such an important part in the production of surgical shock Nitrous oxide inhalation combined with splanchnic or parasacral injections should enable any abdominal operation to be carried out with safety and convenience, especially if the rectus muscle is infiltrated at the commencement The experience of those who have used the combined methods points to a facility in technique for the operator, a degree of safety for the patient, and an absence of later complications, such as is unknown with the older methods even in the most skilled hands The newer methods, however, involve a coördination between surgeon and anæsthetist, which can only be reached by long practice The Nottingham discussion will do much to make this coördination more common than it is at present

---

[1] H C Corry Mann Report on Diets for Boys during the School Age Medical Research Council Special Report Series, No 105 H M Stationery Office 2s 6d

FOOT-AND-MOUTH DISEASE INFECTION.

A FARMER was fined £15 at Crewe on July 2nd for allowing foreign meat wrappings to come in contact with the live-stock on his farm This was an offence against the Foot-and-Mouth Disease (Packing Materials) Order made last November Clause 2 of the Order enacts that no cloth, wrapping, sacking, or other material which has been used for the wrapping of meat, meat products, offals, or other parts of a carcass shall be brought into contact with any animal in Great Britain unless and until it has been boiled or otherwise thoroughly sterilised after being so used The maximum penalty is a fine of £20 An outbreak of foot-and-mouth disease occurred at the defendant's farm, and an inspector of the Ministry of Agriculture who visited him discovered that the farmer also kept a grocery business in Crewe and had bought large quantities of bacon from Denmark, Poland, and Holland The wrappings from these bales of bacon were taken from his grocery establishment and placed in an open shed on the farm to which his pigs had access He had also mixed imported bacon with the pig's food It was further stated at the police-court that, after the outbreak on the defendant's farm, cattle on an adjoining farm contracted the disease A few days later there was a third outbreak, involving the slaughter of 119 head of cattle, and the defendant admitted he had lent some harness to the farmer who owned these animals

A question about this prosecution was addressed on July 8th to the Minister of Agriculture in the House of Commons, Mr W THORNE asking whether the Minister was aware of the case and whether he would undertake to revise the existing prohibition so as to make it applicable only in reference to bacon imported in wrappings and pigs with hair on Mr GUINNESS, in his reply, explained the object of the Order Foreign meat and bacon may itself be free from disease, but, because it is packed in places where live animals are received, the wrappings may become contaminated after the meat is packed. The Minister went on to say that, if the Order had been obeyed in the Crewe case, it was possible that that particular outbreak would never have occurred He therefore saw no reason to modify the existing prohibition on the entry of fresh carcasses into this country from the continent He added that he intended to give the widest publicity to the Crewe conviction in order to call the attention of stock-owners to the Order, and the course thus pursued is commendable and even necessary when the grave trouble and expense to the community are remembered which follow the occurrence and repression of this pestilence On July 12th Mr THORNE asked the further question whether, before issuing a general embargo against pork imports from the Continent, any inquiry was held as to the possibility of distinguishing between pork as imported for the last three years to the London meat market and pigs unscalded and unscraped, such as were alleged to have caused foot and-mouth disease in Scotland. The Minister replied that scalding and scraping of a pork pig does not destroy the virus; the scraping off of the epidermis which follows the scalding merely makes the disease more difficult to detect

It may be mentioned that the defendant and his wife were also fined £1 for using a public footpath which had been closed in consequence of the outbreak This penalty shows what unusual measures have been required and have been taken in order to restrict the spread of foot-and-mouth disease Under Clause 8 of the Foot-and-Mouth Disease (Infected Areas) Order of 1924 an inspector of the Ministry or of the local authority can prohibit entry into a field, shed, or other place in an "infected area" notwithstanding the existence of any footpath or right of way Doubtless a good deal of publicity will be required in agricultural communities if such regulations are to be observed and enforced

PROFESSOR TEISSIER

WE are happy to correct the error made by one of our Paris correspondents in announcing the death of Prof Teissier, medical chief of the Claude Bernard Hospital in Paris Prof Pierre-Joseph Teissier is, on his own showing, alive and active in his devotion to the study and teaching of the nature of infectious disease The incorrect report was based upon a confusion of his name with that of his late uncle, Prof Louis-Joseph Teissier, of Lyon, and we may express the hope that the distinguished nephew, who is still in the prime of life, has many years before him to continue the bedside demonstrations which form so useful a part in the education of French students of medicine.

come to his notice in Aberdeen and emphasised the difficulty of being sure whether some of the tumours were sarcomata or carcinomata. In the past it has been too readily assumed that the majority at any rate arose from connective tissue, and Mr. W. G. Barnard's examination of a series from University College Hospital communicated to the July issue of the *Journal of Pathology and Bacteriology* noticed in another part of our present issue throws substantial doubt on this assumption. He divides the large tumours of the mediastinum growing in the hilum of the lung and in the bronchial glands into three histological groups: (1) squamous-celled epithelioma; (2) polygonal spheroidal or cubical-celled carcinoma sometimes mucus-secreting; (3) the tumours which have been known as "oat-celled sarcoma." The first group may with experience be distinguished naked eye, but between the second and third there is no constant gross difference. Moreover, if the oat-celled tumours are examined more thoroughly they will be found in places to present a cellular structure suggestive if not demonstrative of an epithelial origin. The bulk is composed of oval cells which would naturally be called sarcoma, but these are sometimes arranged in rows and in parts are distinctly polygonal and may form definite cubical epithelium lining tubules or attempts at tubules. In Mr. Barnard's view therefore these oat-celled tumours are carcinomata; they form the atypical end of a histological series which at the typical end is represented by columnar-celled mucous growths. One is reminded of the very sarcomatous appearance of parts of some of the epithelial tumours which have been produced by tar. The determination that the great majority of these mediastinal tumours arise in the lung rather than in the bronchial glands makes it perhaps more credible that influenza may be a precedent condition, though it has to be recognised that in pneumonia the regional lymphatic glands are probably not much less irritated than the lung itself.

TUBERCULOSIS AND PREGNANCY.

THERE are many old clinical sayings with regard to tuberculosis and pregnancy and, like proverbs, they often contradict each other. One school of the past taking a short view of the case believed that the outlook was improved by pregnancy and encouraged tuberculous girls to marry. Another laid it down in a dictum which has survived to the present day that a tuberculous woman bears the first pregnancy well and the second with difficulty, but that she rarely survives the third. Probably the confusion in thought on this question may be traced to the fact that there are at least three different points of view involved—namely, (1) the effect of pregnancy on tuberculosis, (2) the effect of tuberculosis on pregnancy, and (3) the effect of tuberculosis on the offspring. All these questions have been ventilated recently in different quarters. A discussion on the subject took place at the provincial meeting of the Tuberculosis Society in Cambridge[1] in March. Prof. Calmette's recent monograph[2] on tuberculosis in the new-born has summarised some of the results on the side of the offspring, and Dr. J. C. Litzenberg[3] has collected a number of records dealing with the statistical aspect. Obviously, much depends upon the material on which the reports are compiled. It is important to know whether the cases used for statistical purposes were sputum positive or sputum negative, what was the clinical character of the pulmonary disease before pregnancy took place, and finally data are required as to the environment of the patients and their opportunities for adequate anti-tuberculosis treatment.

With regard to the effect of pregnancy on tuberculosis modern clinical observations seem to show that the tuberculous woman does well during pregnancy, but is exposed to grave risks of relapse immediately after the confinement. In the discussion which took place at Cambridge, several speakers emphasised this view and stated that in their opinion patients who were able to avail themselves of adequate sanatorium treatment passed through the months of pregnancy exceptionally well. The other side of the picture is emphasised by those who have to treat tuberculosis and pregnancy in the out-patient class of woman, who by reason of economic circumstances and family cares are unable to adapt their way of life to the cure of the tuberculosis. The risks of recrudescence of tuberculosis in pregnancy are clearly not due to the mere mechanical factors associated with the enlargement of the uterus, and in the discussion at Cambridge Dr. Geoffrey Marshall suggested that some biochemical factor might well lie at the root of the difficulty. Metabolism is profoundly altered in pregnancy, and tuberculosis cannot but be complicated by the adjustments which the body has to make. As to the effect of tuberculosis on pregnancy, this is often surprisingly slight. In the article quoted above, Dr. Litzenberg states that tuberculosis does not appear to predispose the patient to the risks of abortion, but, nevertheless, his figures show that 7–10 per cent. of babies born of tuberculous mothers are still-born, and that 12–13 per cent. die in the puerperium. In view of the various risks involved the question arises whether or not the pregnancy should be interrupted. In Dr. Litzenberg's experience interruption during the first three months has not given good results and he is in favour of taking the chances of allowing the pregnancy to continue its natural course. He does not, however, discuss the question as to whether interference is necessary at or near the end of the pregnancy. The majority of the speakers at Cambridge stated that in their experience the tuberculous woman passed through the time of confinement exceptionally well and that the fœtus, usually small, gave rise to no mechanical difficulties for the obstetrician. In any case the parents and the physician must face the question as to whether or not the mother should be allowed to take the risks of a second pregnancy and, if not, what measures should be taken to eliminate this risk. Apparently there are wide differences of opinion. On the one hand the view is held that in serious cases pregnancy terminated by Cæsarean section with sterilisation effected at the same operation is the safest course, others adopt the easy practice of 'leaving matters to Nature.' Between these two extremes are various intermediate courses such as sterilisation by means of X rays which is said to last only for some four years, and the more obvious methods of contraception. Probably most physicians would at any rate agree that a second pregnancy should not follow until the tuberculous lesion has remained quiescent for a period of two years. Finally, there is the child to consider. Prof. Calmette has collected a number of sets of statistics dealing with the mortality from tuberculosis amongst infants born of tuberculous mothers. These figures appear to vary within very wide limits in different countries. According to Calmette, Prof. Forssner, of Stockholm, states that 70 out of 100 children born of tuberculous mothers and brought up in their tuberculous environment die before the age of 12 months, while Lissant Cox and MacNalty[4] put the figure at 22 per cent. for one dispensary in Great Britain. In France, Prof. Calmette estimates that 25 per cent. of such children die before they are a year old. It is clear that the risk to the child of having been born of a tuberculous mother is grave and no doubt this risk was in times past the main argument in favour of the hereditary nature of tuberculosis. There is abundant evidence nowadays to show that it is not a question of heredity but of close and intimate contact with an infective focus during the first few months of life.

It would appear to be impossible to lay down any very definite rules as to the treatment of a tuberculous woman who is or may become pregnant. In many cases there would seem to be no reason for terminating

---

[1] Tubercle, May, 1926, p. 403.

[2] Annales de l'Institut Pasteur, February, 1926, p. 89.

[3] Minnesota Medicine, March, 1926, p. 129.

[4] Calmette, A., Loc. cit.

SPINAL AND PERIPHERAL FORMS OF EPIDEMIC ENCEPHALOMYELITIS

SOON after epidemic encephalitis became recognised, the suggestion was put forward that certain cases of myelitis and even of polyneuritis should also be attributed to the same virus. Such cases are not common, however, and when the signs of encephalitis have not been definite the attitude of physicians in this country towards the ætiology has generally been one of cautious agnosticism. Abroad, and particularly in France, a relationship has been more freely acknowledged, and Cruchet and Verger[1] now claim to have encountered in their own experience no less than 39 cases of myelitis, radiculitis, or polyneuritis which they regard as anatomically inferior forms of the same disease. Of these, 28 were cases of myelitis, and the authors divide them into four groups according to whether the symptoms indicated that the spinal infection was anterior, lateral, posterior, or diffuse. The first group closely resembles the commoner acute anterior poliomyelitis, but may be accompanied at the onset by somnolence and diplopia. The spines corresponding to the inflamed segments of the cord may be tender, pain in the affected limbs is the rule, as in poliomyelitis in the adult and muscular atrophy sets in rapidly, the muscular affection may at first be widespread, but there is a tendency to gradual recovery, and after a few months cure of the paralysis may be almost complete, the cerebro-spinal fluid may be normal or may show an increase in its sugar content and a slight lymphocytosis. The lateral or spastic type may for a time resemble amyotrophic lateral sclerosis, but unlike that disease, it has the same tendency to regression as is seen in the anterior group. The posterior type resembles an acute tabes. There are lightning pains, feelings of constriction, sensory changes, sphincter paralysis, and great incoordination in all limbs, but the pupils preserve their reaction to light, the Wassermann reaction is negative and the sugar content of the cerebro-spinal fluid is increased, in some cases transitory diplopia attends the onset, the course is usually towards recovery, but involvement of the bulb may cause death in the acute stage. The diffuse cases share the features of the other three groups and are characterised by remarkable transformation in their symptoms during the evolution of the disease. One case, diagnosed at the beginning as polyneuritis, became spastic nearly a year later and finally recovered, in the cerebro-spinal fluid the sugar was increased, the Wassermann reaction was negative, and there were 2–3 lymphocytes per c.mm. Other cases resemble the better-known forms of transverse myelitis, but have a greater tendency to recovery; the symptoms, even when there is complete flaccid paraplegia, may completely disappear after six months or more. The cases diagnosed as nerve-root inflammation or radiculitis numbered six. They were characterised by persistent dull shooting pains brought on by effort, or by coughing, sneezing and the like, and usually believed to be caused by muscular rheumatism. The symptoms ceased after six or eight weeks. In spite of vague ocular disturbances at the beginning in a few, the evidence of encephalitic infection in these cases is extremely slender. Five cases of polyneuritis were ascribed to the same infection, but Cruchet and Verger themselves admit that it is very questionable whether the virus of encephalitis ever causes inflammation of the peripheral nerves, while sparing the central nervous system. In regard to polyneuritis and radiculitis the report does not carry conviction, in regard to myelitis, more might have been said of the evidence on which the supposition of identity of infection depends. A case of myelitis in which there is no clear evidence of another cause may be regarded as due to the infective agent of epidemic encephalitis if it occurs at a time when that disease is rife and if it is accompanied at the onset by somnolence and diplopia or has been recently preceded by these symptoms, the assumption is strengthened if the clinical picture produced differs materially from the usual pictures of acute anterior poliomyelitis and of transverse myelitis.

JOURNEES MÉDICALES DE PARIS

Journées Médicales are gatherings of doctors which differ from ordinary congresses in that they are for instruction rather than dispute. The idea originated in Belgium under Réné Beckers, and in Brussels 16 of these functions have taken place already, and their popularity is steadily increasing. In France they are also an established institution and Journées Médicales were held at Toulouse in 1924 and 1925, as well as at Tunis and Casablanca. They have always been well attended, and it is not surprising that the idea has now been taken up in Paris, where there are immense resources of hospitality and where a large staff of teachers, both official and private, is available. The meeting held from July 15th to 19th, of which a brief account appears on page 303, was the first of its kind in the capital, and was opened by the President of the Republic in the presence of the Ministers of Education and Commerce and diplomatic representatives of many foreign powers. Its purpose was definitely utilitarian and practical, as was indicated by Prof. Widal, President of the Congress, in his opening address. The object of the Journees Médicales, he said, was to enable medical men to meet together from time to time and to gain as quickly as possible the teaching needed to bring their medical knowledge up to date. The progress of the last few years had been so rapid that only with difficulty could the practitioner keep himself in touch with the methods of investigation and of treatment which were continually transforming medical and surgical practice. Certainly the doctor had his books, he could read articles in the medical journals, and he could attend the discussions of learned societies, but how could he judge the value of so many different methods, and how could he recognise immediately the advantage to be drawn from them? This is a fair statement of the case for post-graduate education, and the Journées Médicales differ only from British post-graduate courses in the scale on which they are arranged. Conferences and demonstrations were held in many Parisian hospitals and laboratories in such a way as not to clash with one another in the time-table and as a complement to these lessons and lectures there was an exhibition at the Grand Palais where the practitioner might revise his knowledge of medical and surgical apparatus. Very many French doctors attended, but the gathering was especially remarkable for the large number of foreign medical men, some of whom took part in the demonstrations. Official delegates were sent from all parts of North and South America, and Spain, Italy, Portugal, Greece, Turkey, and China, as well as the Scandinavian countries and Holland, were well represented. The success of this memorable occasion will certainly encourage the medical faculty of Paris to repeat the undertaking.

MEDIASTINAL TUMOURS

MEDIASTINAL tumours are often difficult to diagnose during life and the pathologist may be equally in doubt about their precise nature later on. During the last two or three years a remarkable increase in their frequency has been noticed in America, Western Europe, and this country. The cause of this is not clear, if, as has been suggested, it is the influenza epidemic of 1918–19, their prevalence should presently subside to its former level and it will be of much interest to see what happens in the next few years. Meanwhile pathologists have had a much more ample supply of material and the essential character of some of the commoner forms has come under discussion again. At the last meeting of the Pathological Society of Great Britain and Ireland Prof. T. Shennan discussed critically the cases which had come to his notice in Aberdeen and emphasised the difficulty of being sure whether some of the tumours were sarcomata or carcinomata In the past it has been too readily assumed that the majority at any rate arise from connective tissue and Mr W G Barnard's examination of a series from University College Hospital, communicated to the July issue of the *Journal of Pathology and Bacteriology* noticed in another part of our present issue throws substantial doubt on this assumption He divides the large tumours of the mediastinum growing in the hilum of the lung and in the bronchial glands into three histological groups. (1) squamous celled epithelioma. (2) polygonal spheroidal or cubical-celled carcinoma, sometimes mucus secreting. (3) the tumours which have been known as "oat-celled sarcoma" The first group may with experience be distinguished naked eye but between the second and third there is no constant gross difference Moreover, if the oat-celled tumours are examined more thoroughly they will be found in places to present a cellular structure suggestive if not demonstrative of an epithelial origin The bulk is composed of oval cells which would naturally be called sarcoma but these are sometimes arranged in rows and in parts are distinctly polygonal and may form definite cubical epithelium lining tubules or attempts at tubules In Mr Barnard's view, therefore these oat-celled tumours are carcinomata they form the atypical end of a histological series which, at the typical end is represented by columnar-celled mucous growths. One is reminded of the very sarcomatous appearance of parts of some of the epithelial tumours which have been produced by tar The determination that the great majority of these mediastinal tumours arise in the lung rather than in the bronchial glands makes it perhaps more credible that influenza may be a precedent condition though it has to be recognised that in pneumonias the regional lymphatic glands are probably not much less irritated than the lung itself

---

[1] Presse Médicale, June 12th, p. 737.

TUBERCULOSIS AND PREGNANCY

THERE are many old clinical sayings with regard to tuberculosis and pregnancy and, like proverbs they often contradict each other. One school of the past taking a short view of the case believed that the outlook was improved by pregnancy and encouraged tuberculous girls to marry. Another laid it down in a dictum which has survived to the present day that a tuberculous woman bears the first pregnancy well and the second with difficulty, but that she rarely survives the third. Probably the confusion in thought on this question may be traced to the fact that there are at least three different points of view involved—namely (1) the effect of pregnancy on tuberculosis (2) the effect of tuberculosis on pregnancy, and (3) the effect of tuberculosis on the offspring All these questions have been ventilated recently in different quarters A discussion on the subject took place at the provincial meeting of the Tuberculosis Society in Cambridge[1] in March. Prof. Calmette's recent monograph[2] on tuberculosis in the new-born has summarised some of the results on the side of the offspring, and Dr. J C. Litzenberg[3] has collected a number of records dealing with the statistical aspect. Obviously, much depends upon the material on which the reports are compiled It is important to know whether the cases used for statistical purposes were sputum positive or sputum negative, what was the clinical character of the pulmonary disease before pregnancy took place, and finally data are required as to the environment of the patients and their opportunities for adequate anti-tuberculosis treatment.

With regard to the effect of pregnancy on tuberculosis modern clinical observations seem to show that the tuberculous woman does well during pregnancy but is exposed to grave risks of relapse immediately after the confinement In the discussion which took place at Cambridge, several speakers emphasised this view and stated that in their opinion patients who were able to avail themselves of adequate sanatorium treatment passed through the months of pregnancy exceptionally well The other side of the picture is emphasised by those who have to treat tuberculosis and pregnancy in the out-patient class of woman who by reason of economic circumstances and family cares are unable to adapt their way of life to the cure of the tuberculosis The risks of recrudescence of tuberculosis in pregnancy are clearly not due to the mere mechanical factors associated with the enlargement of the uterus and in the discussion at Cambridge Dr Geoffrey Marshall suggested that some biochemical factor might well lie at the root of the difficulty. Metabolism is profoundly altered in pregnancy, and tuberculosis cannot but be complicated by the adjustments which the body has to make As to the effect of tuberculosis on pregnancy, this is often surprisingly slight In the article quoted above, Dr. Litzenberg states that tuberculosis does not appear to predispose the patient to the risks of abortion but nevertheless his figures show that 7–10 per cent. of babies born of tuberculous mothers are still-born, and that 12–15 per cent. die in the puerperium In view of the various risks involved the question arises whether or not the pregnancy should be interrupted In Dr. Litzenberg's experience interruption during the first three months has not given good results and he is in favour of taking the chances of allowing the pregnancy to continue its natural course. He does not, however, discuss the question as to whether interference is necessary at or near the end of the pregnancy The majority of the speakers at Cambridge stated that in their experience the tuberculous woman passed through the time of confinement exceptionally well and that the fœtus usually small, gave rise to no mechanical difficulties for the obstetrician. In any case, the parents and the physician must face the question as to whether or not the mother should be allowed to take the risks of a second pregnancy and, if not what measures should be taken to eliminate this risk. Apparently there are wide differences of opinion On the one hand the view is held that in serious cases pregnancy terminated by Cæsarean section with sterilisation effected at the same operation is the safest course, others adopt the easy practice of 'leaving matters to Nature.' Between these two extremes are various intermediate courses, such as sterilisation by means of X rays which is said to last only for some four years, and the more obvious methods of contraception Probably most physicians would at any rate agree that a second pregnancy should not follow until the tuberculous lesion has remained quiescent for a period of two years. Finally, there is the child to consider. Prof Calmette has collected a number of sets of statistics dealing with the mortality from tuberculosis amongst infants born of tuberculous mothers. These figures appear to vary within very wide limits in different countries. According to Calmette, Prof. Forssner, of Stockholm, states that 70 out of 100 children born of tuberculous mothers and brought up in their tuberculous environment die before the age of 12 months while Lissant Cox and MacNalty[4] put the figure at 22 per cent for one dispensary in Great Britain In France, Prof. Calmette estimates that 25 per cent of such children die before they are a year old It is clear that the risk to the child of having been born of a tuberculous mother is grave and no doubt this risk was in times past the main argument in favour of the hereditary nature of tuberculosis. There is abundant evidence nowadays to show that it is not a question of heredity but of close and intimate contact with an infective focus during the first few months of life.

It would appear to be impossible to lay down any very definite rules as to the treatment of a tuberculous woman who is or may become, pregnant In many cases there would seem to be no reason for terminating

---

[1] Tubercle May 1926 p 403

[2] Annales de l'Institut Pasteur February, 1926 p 89

[3] Minnesota Medicine, March, 1926, p 129

[4] Calmette, A. Loc cit.

SPINAL AND PERIPHERAL FORMS OF EPIDEMIC ENCEPHALOMYELITIS

Soon after epidemic encephalitis became recognised, the suggestion was put forward that certain cases of myelitis and even of polyneuritis should also be attributed to the same virus Such cases are not common, however, and when the signs of encephalitis have not been definite the attitude of physicians in this country towards the ætiology has generally been one of cautious agnosticism Abroad, and particularly in France, a relationship has been more freely acknowledged, and Cruchet and Verger[1] now claim to have encountered in their own experience no less than 39 cases of myelitis, radiculitis, or polyneuritis which they regard as anatomically inferior forms of the same disease Of these, 28 were cases of myelitis, and the authors divide them into four groups according to whether the symptoms indicated that the spinal infection was anterior, lateral, posterior, or diffuse The first group closely resembles the commoner acute anterior poliomyelitis, but may be accompanied at the onset by somnolence and diplopia The spines corresponding to the inflamed segments of the cord may be tender, pain in the affected limbs is the rule, as in poliomyelitis in the adult and muscular atrophy sets in rapidly, the muscular affection may at first be widespread, but there is a tendency to gradual recovery, and after a few months cure of the paralysis may be almost complete, the cerebro-spinal fluid may be normal or may show an increase in its sugar content and a slight lymphocytosis The lateral or spastic type may for a time resemble amyotrophic lateral sclerosis, but unlike that disease, it has the same tendency to regression as is seen in the anterior group The posterior type resembles an acute tabes There are lightning pains, feelings of constriction, sensory changes, sphincter paralysis, and great incoordination in all limbs, but the pupils preserve their reaction to light, the Wassermann reaction is negative and the sugar content of the cerebro-spinal fluid is increased, in some cases transitory diplopia attends the onset, the course is usually towards recovery, but involvement of the bulb may cause death in the acute stage The diffuse cases share the features of the other three groups and are characterised by remarkable transformation in their symptoms during the evolution of the disease One case, diagnosed at the beginning as polyneuritis, became spastic nearly a year later and finally recovered, in the cerebro-spinal fluid the sugar was increased, the Wassermann reaction was negative, and there were 2–3 lymphocytes per c mm Other cases resemble the better-known forms of transverse myelitis, but have a greater tendency to recovery, the symptoms, even when there is complete flaccid paraplegia, may completely disappear after six months or more The cases diagnosed as nerve-root inflammation or radiculitis numbered six. They were characterised by persistent dull shooting pains brought on by effort, or by coughing, sneezing and the like, and usually believed to be caused by muscular rheumatism The symptoms ceased after six or eight weeks In spite of vague ocular disturbances at the beginning in a few, the evidence of encephalitic infection in these cases is extremely slender Five cases of polyneuritis were ascribed to the same infection, but Cruchet and Verger themselves admit that it is very questionable whether the virus of encephalitis ever causes inflammation of the peripheral nerves, while sparing the central nervous system In regard to polyneuritis and radiculitis, the report does not carry conviction, in regard to myelitis, more might have been said of the evidence on which the supposition of identity of infection depends A case of myelitis in which there is no clear evidence of another cause may be regarded as due to the infective agent of epidemic encephalitis if it occurs at a time when that disease is rife and if it is accompanied at the onset by somnolence and diplopia or has been recently preceded by these symptoms, the assumption is strengthened if the clinical picture produced differs materially from the usual pictures of acute anterior poliomyelitis and of transverse myelitis

JOURNÉES MÉDICALES DE PARIS

Journées Médicales are gatherings of doctors which differ from ordinary congresses in that they are for instruction rather than dispute The idea originated in Belgium under Réné Beckers, and in Brussels 16 of these functions have taken place already, and their popularity is steadily increasing In France they are also an established institution and Journées Médicales were held at Toulouse in 1924 and 1925, as well as at Tunis and Casablanca They have always been well attended, and it is not surprising that the idea has now been taken up in Paris, where there are immense resources of hospitality and where a large staff of teachers, both official and private, is available The meeting held from July 15th to 19th, of which a brief account appears on page 303, was the first of its kind in the capital, and was opened by the President of the Republic in the presence of the Ministers of Education and Commerce and diplomatic representatives of many foreign powers Its purpose was definitely utilitarian and practical, as was indicated by Prof. Widal, President of the Congress, in his opening address The object of the Journées Médicales, he said, was to enable medical men to meet together from time to time and to gain as quickly as possible the teaching needed to bring their medical knowledge up to date The progress of the last few years had been so rapid that only with difficulty could the practitioner keep himself in touch with the methods of investigation and of treatment which were continually transforming medical and surgical practice Certainly the doctor had his books, he could read articles in the medical journals, and he could attend the discussions of learned societies, but how could he judge the value of so many different methods, and how could he recognise immediately the advantage to be drawn from them ? This is a fair statement of the case for post-graduate education, and the Journées Médicales differ only from British post-graduate courses in the scale on which they are arranged Conferences and demonstrations were held in many Parisian hospitals and laboratories in such a way as not to clash with one another in the time-table, and as a complement to these lessons and lectures there was an exhibition at the Grand Palais where the practitioner might revise his knowledge of medical and surgical apparatus Very many French doctors attended, but the gathering was especially remarkable for the large number of foreign medical men, some of whom took part in the demonstrations Official delegates were sent from all parts of North and South America, and Spain, Italy, Portugal, Greece. Turkey, and China, as well as the Scandinavian countries and Holland, were well represented The success of this memorable occasion will certainly encourage the medical faculty of Paris to repeat the undertaking

MEDIASTINAL TUMOURS

Mediastinal tumours are often difficult to diagnose during life and the pathologist may be equally in doubt about their precise nature later on During the last two or three years a remarkable increase in their frequency has been noticed in America, Western Europe, and this country The cause of this is not clear, if, as has been suggested, it is the influenza epidemic of 1918–19, their prevalence should presently subside to its former level and it will be of much interest to see what happens in the next few years Meanwhile pathologists have had a much more ample supply of material and the essential character of some of the commoner forms has come under discussion again At the last meeting of the Pathological Society of Great Britain and Ireland Prof T Shennan discussed critically the cases which had come to his notice in Aberdeen and emphasised the difficulty of being sure whether some of the tumours were sarcomata or carcinomata. In the past it has been too readily assumed that the majority of them originate from connective tissue, and Mr W. G. Barnard's examination of a series from University College Hospital communicated to the July issue of the *Journal of Pathology and Bacteriology* (noticed in another part of our present issue) throws substantial doubt on this assumption. He divides the large tumours of the mediastinum growing in the hilum of the lung and in the bronchial glands into three histological groups: (1) squamous-celled epithelioma; (2) polygonal spheroidal or cubical-celled carcinoma sometimes mucus secreting; (3) the tumours which have been known as "oat-celled sarcoma." The first group may with experience be distinguished naked eye, but between the second and third there is no constant gross difference. Moreover if the oat-celled tumours are examined more thoroughly they will be found in places to present a cellular structure suggestive if not demonstrative of an epithelial origin. The bulk is composed of oval cells which would naturally be called sarcoma but these are sometimes arranged in rows and in parts are distinctly polygonal and may form definite cubical epithelium lining tubules or attempts at tubules. In Mr Barnard's view, therefore these oat-celled tumours are carcinomata; they form the atypical end of a histological series which at the typical end is represented by columnar-celled mucous growths. One is reminded of the very sarcomatous appearance of parts of some of the epithelial tumours which have been produced by tar. The determination that the great majority of these mediastinal tumours arise in the lung rather than in the bronchial glands makes it, perhaps, more credible that influenza may be a precedent condition, though it has to be recognised that in pneumonias the regional lymphatic glands are probably not much less irritated than the lung itself.

---

[1] Presse Médicale, June 12th, p 737

TUBERCULOSIS AND PREGNANCY.

THERE are many old clinical sayings with regard to tuberculosis and pregnancy and, like proverbs, they often contradict each other. One school of the past taking a short view of the case believed that the outlook was improved by pregnancy and encouraged tuberculous girls to marry. Another laid it down in a dictum which has survived to the present day that a tuberculous woman bears the first pregnancy well and the second with difficulty, but that she rarely survives the third. Probably the confusion in thought on this question may be traced to the fact that there are at least three different points of view involved—namely, (1) the effect of pregnancy on tuberculosis, (2) the effect of tuberculosis on pregnancy, and (3) the effect of tuberculosis on the offspring. All these questions have been ventilated recently in different quarters. A discussion on the subject took place at the provincial meeting of the Tuberculosis Society in Cambridge[1] in March. Prof. Calmette's recent monograph[2] on tuberculosis in the new-born has summarised some of the results on the side of the offspring and Dr. J. C. Litzenberg[3] has collected a number of records dealing with the statistical aspect. Obviously, much depends upon the material on which the reports are compiled. It is important to know whether the cases used for statistical purposes were sputum positive or sputum negative, what was the clinical character of the pulmonary disease before pregnancy took place, and finally data are required as to the environment of the patients and their opportunities for adequate anti-tuberculosis treatment.

With regard to the effect of pregnancy on tuberculosis, modern clinical observations seem to show that the tuberculous woman does well during pregnancy, but is exposed to grave risks of relapse immediately after the confinement. In the discussion which took place at Cambridge, several speakers emphasised this view and stated that in their opinion patients who were able to avail themselves of adequate sanatorium treatment passed through the months of pregnancy exceptionally well. The other side of the picture is emphasised by those who have to treat tuberculosis and pregnancy in the out-patient class of woman, who by reason of economic circumstances and family cares are unable to adapt their way of life to the cure of the tuberculosis. The risks of recrudescence of tuberculosis in pregnancy are clearly not due to the mere mechanical factors associated with the enlargement of the uterus and in the discussion at Cambridge Dr. Geoffrey Marshall suggested that some biochemical factor might well lie at the root of the difficulty. Metabolism is profoundly altered in pregnancy, and tuberculosis cannot but be complicated by the adjustments which the body has to make. As to the effect of tuberculosis on pregnancy, this is often surprisingly slight. In the article quoted above, Dr. Litzenberg states that tuberculosis does not appear to predispose the patient to the risks of abortion but, nevertheless, his figures show that 7–10 per cent. of babies born of tuberculous mothers are still-born, and that 12–15 per cent. die in the puerperium. In view of the various risks involved the question arises whether or not the pregnancy should be interrupted. In Dr. Litzenberg's experience interruption during the first three months has not given good results and he is in favour of taking the chances of allowing the pregnancy to continue its natural course. He does not, however, discuss the question as to whether interference is necessary at or near the end of the pregnancy. The majority of the speakers at Cambridge stated that in their experience the tuberculous woman passed through the time of confinement exceptionally well and that the fœtus, usually small, gave rise to no mechanical difficulties for the obstetrician. In any case, the parents and the physician must face the question as to whether or not the mother should be allowed to take the risks of a second pregnancy and, if not, what measures should be taken to eliminate this risk. Apparently there are wide differences of opinion. On the one hand, the view is held that in serious cases pregnancy terminated by Cæsarean section with sterilisation effected at the same operation is the safest course; others adopt the easy practice of "leaving matters to Nature." Between these two extremes are various intermediate courses such as sterilisation by means of X rays which is said to last only for some four years, and the more obvious methods of contraception. Probably most physicians would at any rate agree that a second pregnancy should not follow until the tuberculous lesion has remained quiescent for a period of two years. Finally, there is the child to consider. Prof. Calmette has collected a number of sets of statistics dealing with the mortality from tuberculosis amongst infants born of tuberculous mothers. These figures appear to vary within very wide limits in different countries. According to Calmette, Prof. Forssner, of Stockholm, states that 70 out of 100 children born of tuberculous mothers and brought up in their tuberculous environment die before the age of 12 months, while Lissant Cox and MacNalty[4] put the figure at 22 per cent. for one dispensary in Great Britain. In France, Prof. Calmette estimates that 25 per cent. of such children die before they are a year old. It is clear that the risk to the child of having been born of a tuberculous mother is grave, and no doubt this risk was in times past the main argument in favour of the hereditary nature of tuberculosis. There is abundant evidence nowadays to show that it is not a question of heredity but of close and intimate contact with an infective focus during the first few months of life.

It would appear to be impossible to lay down any very definite rules as to the treatment of a tuberculous woman who is, or may become, pregnant. In many cases there would seem to be no reason for terminating

---

[1] Tubercle, May 1926, p. 403.
[2] Annales de l'Institut Pasteur, February, 1926, p. 89.
[3] Minnesota Medicine, March, 1926, p. 129.
[4] Calmette, A. Loc. cit.

SPINAL AND PERIPHERAL FORMS OF EPIDEMIC ENCEPHALOMYELITIS

SOON after epidemic encephalitis became recognised, the suggestion was put forward that certain cases of myelitis and even of polyneuritis should also be attributed to the same virus Such cases are not common, however, and when the signs of encephalitis have not been definite the attitude of physicians in this country towards the ætiology has generally been one of cautious agnosticism Abroad, and particularly in France, a relationship has been more freely acknowledged, and Cruchet and Verger[1] now claim to have encountered in their own experience no less than 39 cases of myelitis, radiculitis, or polyneuritis which they regard as anatomically inferior forms of the same disease Of these, 28 were cases of myelitis, and the authors divide them into four groups according to whether the symptoms indicated that the spinal infection was anterior, lateral, posterior, or diffuse The first group closely resembles the commoner acute anterior poliomyelitis, but may be accompanied at the onset by somnolence and diplopia The spines corresponding to the inflamed segments of the cord may be tender, pain in the affected limbs is the rule, as in poliomyelitis in the adult and muscular atrophy sets in rapidly; the muscular affection may at first be widespread, but there is a tendency to gradual recovery, and after a few months cure of the paralysis may be almost complete, the cerebro-spinal fluid may be normal or may show an increase in its sugar content and a slight lymphocytosis The lateral or spastic type may for a time resemble amyotrophic lateral sclerosis, but unlike that disease, it has the same tendency to regression as is seen in the anterior group The posterior type resembles an acute tabes There are lightning pains, feelings of constriction, sensory changes, sphincter paralysis, and great incoordination in all limbs, but the pupils preserve their reaction to light, the Wassermann reaction is negative and the sugar content of the cerebro-spinal fluid is increased, in some cases transitory diplopia attends the onset, the course is usually towards recovery, but involvement of the bulb may cause death in the acute stage The diffuse cases share the features of the other three groups and are characterised by remarkable transformation in their symptoms during the evolution of the disease One case, diagnosed at the beginning as polyneuritis, became spastic nearly a year later and finally recovered, in the cerebro-spinal fluid the sugar was increased, the Wassermann reaction was negative, and there were 2–3 lymphocytes per c mm Other cases resemble the better-known forms of transverse myelitis, but have a greater tendency to recovery, the symptoms, even when there is complete flaccid paraplegia, may completely disappear after six months or more The cases diagnosed as nerve-root inflammation or radiculitis numbered six They were characterised by persistent dull shooting pains brought on by effort, or by coughing, sneezing and the like, and usually believed to be caused by muscular rheumatism The symptoms ceased after six or eight weeks In spite of vague ocular disturbances at the beginning in a few, the evidence of encephalitic infection in these cases is extremely slender Five cases of polyneuritis were ascribed to the same infection, but Cruchet and Verger themselves admit that it is very questionable whether the virus of encephalitis ever causes inflammation of the peripheral nerves, while sparing the central nervous system In regard to polyneuritis and radiculitis, the report does not carry conviction, in regard to myelitis, more might have been said of the evidence on which the supposition of identity of infection depends A case of myelitis in which there is no clear evidence of another cause may be regarded as due to the infective agent of epidemic encephalitis if it occurs at a time when that disease is rife and if it is accompanied at the onset by somnolence and diplopia or has been recently preceded by these symptoms, the assumption is strengthened if the clinical picture produced differs materially from the usual pictures of acute anterior poliomyelitis and of transverse myelitis

---

[1] Presse Médicale, June 12th, p 737

JOURNÉES MÉDICALES DE PARIS

Journees Médicales are gatherings of doctors which differ from ordinary congresses in that they are for instruction rather than dispute The idea originated in Belgium under Réné Beckers, and in Brussels 16 of these functions have taken place already, and their popularity is steadily increasing In France they are also an established institution and Journées Medicales were held at Toulouse in 1924 and 1925, as well as at Tunis and Casablanca They have always been well attended, and it is not surprising that the idea has now been taken up in Paris, where there are immense resources of hospitality and where a large staff of teachers, both official and private, is available The meeting held from July 15th to 19th, of which a brief account appears on page 303, was the first of its kind in the capital, and was opened by the President of the Republic in the presence of the Ministers of Education and Commerce and diplomatic representatives of many foreign powers Its purpose was definitely utilitarian and practical, as was indicated by Prof. Widal, President of the Congress, in his opening address The object of the Journées Médicales, he said, was to enable medical men to meet together from time to time and to gain as quickly as possible the teaching needed to bring their medical knowledge up to date The progress of the last few years had been so rapid that only with difficulty could the practitioner keep himself in touch with the methods of investigation and of treatment which were continually transforming medical and surgical practice Certainly the doctor had his books, he could read articles in the medical journals, and he could attend the discussions of learned societies, but how could he judge the value of so many different methods, and how could he recognise immediately the advantage to be drawn from them? This is a fair statement of the case for post-graduate education, and the Journées Médicales differ only from British post-graduate courses in the scale on which they are arranged Conferences and demonstrations were held in many Parisian hospitals and laboratories in such a way as not to clash with one another in the time-table, and as a complement to these lessons and lectures there was an exhibition at the Grand Palais where the practitioner might revise his knowledge of medical and surgical apparatus Very many French doctors attended, but the gathering was especially remarkable for the large number of foreign medical men, some of whom took part in the demonstrations Official delegates were sent from all parts of North and South America, and Spain, Italy, Portugal, Greece, Turkey, and China, as well as the Scandinavian countries and Holland, were well represented The success of this memorable occasion will certainly encourage the medical faculty of Paris to repeat the undertaking

MEDIASTINAL TUMOURS

MEDIASTINAL tumours are often difficult to diagnose during life and the pathologist may be equally in doubt about their precise nature later on During the last two or three years a remarkable increase in their frequency has been noticed in America, Western Europe, and this country The cause of this is not clear, if, as has been suggested, it is the influenza epidemic of 1918–19, their prevalence should presently subside to its former level and it will be of much interest to see what happens in the next few years Meanwhile pathologists have had a much more ample supply of material and the essential character of some of the commoner forms has come under discussion again At the last meeting of the Pathological Society of Great Britain and Ireland Prof T Shennan discussed critically the cases which had come to his notice in Aberdeen and emphasised the difficulty of being sure whether some of the tumours were sarcomata or carcinomata. In the past it has been too readily assumed that the majority at any rate arise from connective tissue, and Mr W. G. Barnard's examination of a series from University College Hospital communicated to the July issue of the *Journal of Pathology and Bacteriology* noticed in another part of our present issue throws substantial doubt on this assumption. He divides the large tumours of the mediastinum growing in the hilum of the lung and in the bronchial glands into three histological groups: (1) squamous-celled epithelioma; (2) polygonal spheroidal or cubical-celled carcinoma, sometimes mucus secreting; (3) the tumours which have been known as "oat-celled sarcoma." The first group may with experience be distinguished naked eye, but between the second and third there is no constant gross difference. Moreover, if the oat-celled tumours are examined more thoroughly they will be found in places to present a cellular structure suggestive if not demonstrative of an epithelial origin. The bulk is composed of oval cells which would naturally be called sarcoma, but these are sometimes arranged in rows and in parts are distinctly polygonal and may form definite cubical epithelium lining tubules or attempts at tubules. In Mr Barnard's view, therefore, these oat-celled tumours are carcinomata; they form the atypical end of a histological series which at the typical end is represented by columnar-celled mucous growths. One is reminded of the very sarcomatous appearance of parts of some of the epithelial tumours which have been produced by tar. The determination that the great majority of these mediastinal tumours arise in the lung rather than in the bronchial glands makes it perhaps more credible that influenza may be a precedent condition, though it has to be recognised that in pneumonias the regional lymphatic glands are probably not much less irritated than the lung itself.

TUBERCULOSIS AND PREGNANCY.

THERE are many old clinical sayings with regard to tuberculosis and pregnancy and, like proverbs, they often contradict each other. One school of the past, taking a short view of the case, believed that the outlook was improved by pregnancy and encouraged tuberculous girls to marry. Another laid it down in a dictum which has survived to the present day that a tuberculous woman bears the first pregnancy well and the second with difficulty, but that she rarely survives the third. Probably the confusion in thought on this question may be traced to the fact that there are at least three different points of view involved—namely, (1) the effect of pregnancy on tuberculosis, (2) the effect of tuberculosis on pregnancy, and (3) the effect of tuberculosis on the offspring. All these questions have been ventilated recently in different quarters. A discussion on the subject took place at the provincial meeting of the Tuberculosis Society in Cambridge[1] in March. Prof. Calmette's recent monograph[2] on tuberculosis in the new-born has summarised some of the results on the side of the offspring, and Dr J. C. Litzenberg[3] has collected a number of records dealing with the statistical aspect. Obviously, much depends upon the material on which the reports are compiled. It is important to know whether the cases used for statistical purposes were sputum positive or sputum negative, what was the clinical character of the pulmonary disease before pregnancy took place, and finally data are required as to the environment of the patients and their opportunities for adequate anti-tuberculosis treatment.

With regard to the effect of pregnancy on tuberculosis, modern clinical observations seem to show that the tuberculous woman does well during pregnancy, but is exposed to grave risks of relapse immediately after the confinement. In the discussion which took place at Cambridge, several speakers emphasised this view and stated that in their opinion patients who were able to avail themselves of adequate sanatorium treatment passed through the months of pregnancy exceptionally well. The other side of the picture is emphasised by those who have to treat tuberculosis and pregnancy in the out-patient class of woman who by reason of economic circumstances and family cares are unable to adapt their way of life to the cure of the tuberculosis. The risks of recrudescence of tuberculosis in pregnancy are clearly not due to the mere mechanical factors associated with the enlargement of the uterus, and in the discussion at Cambridge Dr Geoffrey Marshall suggested that some biochemical factor might well lie at the root of the difficulty. Metabolism is profoundly altered in pregnancy, and tuberculosis cannot but be complicated by the adjustments which the body has to make. As to the effect of tuberculosis on pregnancy, this is often surprisingly slight. In the article quoted above, Dr Litzenberg states that tuberculosis does not appear to predispose the patient to the risks of abortion, but *nevertheless, his figures* show that 7–10 per cent. of babies born of tuberculous mothers are still-born, and that 12–15 per cent. die in the puerperium. In view of the various risks involved the question arises whether or not the pregnancy should be *interrupted*. In Dr Litzenberg's experience interruption during the first three months has not given good results and he is in favour of taking the chances of allowing the pregnancy to continue its natural course. He does not, however, discuss the question as to whether *interference* is necessary at or near the end of the pregnancy. The majority of the speakers at Cambridge stated that in their experience the tuberculous woman passed through the time of confinement exceptionally well and that the fœtus, usually small, gave rise to no mechanical difficulties for the obstetrician. In any case, the parents and the physician must face the question as to whether or not the mother should be allowed to take the risks of a second pregnancy and if not what measures should be taken to eliminate this risk. Apparently there are wide differences of opinion. On the one hand the view is held that in serious cases pregnancy terminated by *Cæsarean section* with sterilisation effected at the same operation is the safest course; others adopt the easy practice of 'leaving matters to Nature.' Between these two extremes are various intermediate courses such as sterilisation by means of X rays, which is said to last only for some four years, and the more obvious methods of contraception. Probably most physicians would at any rate agree that a second pregnancy should not follow until the tuberculous lesion has remained quiescent for a period of two years. Finally, there is the child to consider. Prof. Calmette has collected a number of sets of statistics dealing with the mortality from tuberculosis amongst infants born of tuberculous mothers. These figures appear to vary within very wide limits in different countries. According to Calmette, Prof. Forssner of Stockholm, states that 70 out of 100 children born of tuberculous mothers and brought up in their tuberculous environment die before the age of 12 months, while Lissant Cox and MacNalty[4] put the figure at 22 per cent. for one dispensary in Great Britain. In France Prof. Calmette estimates that 25 per cent. of such children die before they are a year old. It is clear that the risk to the child of having been born of a tuberculous mother is grave, and no doubt this risk was in times past the main argument in favour of the hereditary nature of tuberculosis. There is abundant evidence nowadays to show that it is not a question of heredity but of close and intimate contact with an infective focus during the first few months of life.

It would appear to be impossible to lay down any very definite rules as to the treatment of a tuberculous woman who is or may become pregnant. In many cases there would seem to be no reason for terminating the pregnancy until near the end of the nine months if at all, since the obstetric difficulties are usually no greater than in healthy women. The tuberculous woman, however, runs great risks of exacerbation of the tuberculous process all through the period of pregnancy and a still greater risk in the few months after the confinement is over, if the tuberculosis be not adequately treated. These risks can be greatly minimised by sanatorium régime and this institutional care would appear to be the obvious course of action in all patients whose circumstances will permit of it. The risks of second pregnancies must depend largely on the good sense of the parents and the wisdom of the physician in handling a difficult situation. For the infant the prospect is not a hopeful one. There is evidently a considerable risk of the infant dying of tuberculosis during the first year. This risk can no doubt be mitigated, if not entirely eliminated, in better-class homes where good nursing and adequate precautions against infection can be adopted. The treatment of tuberculosis is largely a financial question. Amongst the hospital classes pregnancy supervening upon tuberculosis is a grave danger and the outlook is gloomy. In the wealthier classes, where sanatorium treatment can be kept up for a long period and where the mother is not compelled to live in close contact with the infant from the moment of its birth, the outlook for both mother and child is obviously brighter.

---

[1] Tubercle, May, 1926, p. 403.
[2] Annales de l'Institut Pasteur, February, 1926, p. 89.
[3] Minnesota Medicine, March, 1926, p. 129.
[4] Calmette, A. Loc. cit.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

THE Museum of the Royal College of Surgeons is at present closed and will remain so for two months while Rooms I and II are being repainted. The Museum has not often been closed since access to it was made easy some years ago. It has not been in the decorators' hands for more than 20 years, when it was shut to the public, not having apparently been so closed since 1890 when the new Museum buildings were erected. We are so accustomed to the idea of the priceless Hunterian collection being accessible to all interested in its contents that it is at first not easy to realise the long periods in its early development when it was a kind of Bluebeard's chamber unknown to the general public and to many of our medical predecessors. A century ago the Museum was closed during at least eight months of the year, and visits thereto during the remaining four were often effected only by private arrangement with the conservator. It was an indefatigable member of the staff of THE LANCET, James Wardrop, of aneurysm fame, who first agitated in the cause of museum reform, though the conservator, William Clift, had already begun to conduct parties of visitors round the collection twice a day, a practice kept up by him to the end of his tenure of office. At the thirteenth meeting of a committee of members of the College, held at Freemasons' Tavern on July 7th, 1826, Wardrop presided and read to the assembled reformers the terms and conditions on which the Hunterian collection had been delivered to the College by Parliament. It was unanimously decided that the curators had not opened the Museum in the hours specified by the grant, while they had not prepared the catalogue in accordance with directions. It was thereupon proposed at the meeting, in view of the default of the authorities, that the Museum should be open for four hours every day (Sundays excepted) in the winter months and six hours in summer months, that it should be accessible to all suitable visitors, and that a catalogue should be compiled. The Museum Board of the College replied to this suggestion or rather stricture, by deciding that the Museum should be open two days a week for four hours at a time during the whole year. The movement for reform was therefore immediately successful up to a point, but it was not till 1865 that the collection came to be open at about the same times and hours as now. The accusation of neglect in providing a catalogue led to a full statement of excuses being presented to the Hunterian trustees apparently by Clift, the conservator, who had found John Hunter's collection in a state of chaos and had laboured for years to reduce it to order and to describe and identify particular specimens. The interesting history of the various printed editions of the catalogue will be found in the prefaces to Paget, Goodhart and Doran's "Descriptive Catalogue of the Pathological Specimens contained in the Museum of the Royal College of Surgeons," Edit. 2, 1882. These prefaces are an abundant justification of the old generation of conservators and a fine record of scientific progress. There is no doubt that the attitude of the Council of the College towards the members dictated a quite unreasonable and even illegal restriction of the members' rights in respect of the Hunterian Museum, but it is easy to see that the impossibility of an immediate preparation of a catalogue was not appreciated. The task was a very difficult one, and a misleading catalogue would have been worse than no catalogue at all.

FLUORESCENCE

IN the course of a series of articles[1] on the Pathological Action of Light upon the Eye, Dr. W. S. Duke-Elder stated that the wave length of fluorescent light was generally longer, but sometimes shorter than that of the exciting light. An annotation in our issue of July 3rd calling our readers' attention to the valuable way in which Dr. Duke-Elder had marshalled his facts for the benefit of the phototherapist contained the broad assertion that the wave-length of fluorescent light is never shorter than that of the exciting light. This is not strictly the case, for there is a very small group of bodies which under the excitation of light gives out radiation which is actually of shorter wave-length than that which excites it. These bodies constitute exceptions to Stokes's famous law, a law which has such wide application, not only in the luminous spectrum, but in the ultra-violet and X ray regions. While we gladly express our regret to Dr. Duke-Elder for having apparently controverted his perfectly correct statement, we would remind our readers that the bodies in question are at present puzzling exceptions to a law of wide validity. Full information about them is available in an article by Nichols and Merritt in the *Physical Review* (vols. xviii and xix.).

URETERAL AND TRIGONAL STRICTURE

MUCH of our knowledge of ureteral strictures has been derived from American observers, and A. H. Peacock and R. F. Hain have contributed further to this subject in the July number of *Surgery, Gynecology, and Obstetrics*. Their contribution consists of a study of 76 cases of ureteral stricture. In the ætiology of the condition the two chief factors are infection and trauma, of which the former is the more important, for out of 76 cases 63 gave a history of infection, either acute or chronic. The infection was not necessarily of the urinary tract; influenza, scarlet fever, diphtheria, pneumonia, puerperal fever, otitis media, and dental infection all led later to infection of the ureter. No preference was shown for either side, but the favourite site of the stricture was found to be the lower third, and in the case of women, more especially that portion of the ureter directly in relation to the broad ligament. The patients came under observation for a great variety of symptoms, many of them having been regarded as cases of neurasthenia. An interesting finding was the number of operations to which some of these patients had been subjected in order to obtain relief of their symptoms. One case, that of a woman of 28, who complained of frequency of micturition and tenesmus, and had once passed a small quantity of blood, had undergone two operations on the left hip, appendicectomy, salpingectomy, a partial oophorectomy, tonsillectomy an operation for intestinal adhesions, and a therapeutic abortion at the fifth month. The real source of her trouble was a ureteral stricture. In the majority of cases nothing beyond dilatation of the stricture by the passage of a ureteral bougie was found to be necessary.

---

[1] THE LANCET, June 12th, 19th, 26th, and July 3rd, 1926.

To the same journal Frank Hinman and Miley B. Wesson contribute an interesting article on the trigone of the bladder as a factor in urinary obstruction. It is, of course, well known that changes in the trigone occur in cases of urinary obstruction and infection. The authors lay emphasis on the fact that an hypertrophied interureteral ridge may from its form and position lead at times to obstructed urination. When this occurs surgical treatment may become necessary. This may take the form of incision of the ridge with suture and ligature of the incised ledges in order to control hæmorrhage or of resection of the ridge, and where necessary of the supratrigonal pouch so as to restore the base of the bladder to its normal form. The authors instance three cases under their care of urinary obstruction and infection in which the associated changes in the trigone were so marked that operative treatment was rendered necessary. In operating on a hypertrophied interureteral ridge care must be taken to avoid resecting so much of the trigonal muscle as to endanger its functional activity. Special precaution must also be taken against hæmorrhage, and for this reason Young's punch operation which otherwise might be regarded as suitable, should not be carried out. The article discusses the anatomy, physiology, and pathology of the trigone, of which our knowledge still remains meagre.

DE MOTU CORDIS

IT is the intention of the Royal College of Physicians of London to celebrate in 1928 the tercentenary of Harvey's publication of the famous treatise "*Exercitatio de Motu Cordis et Sanguinis*." It may be prophesied safely that the anniversary of Harvey's formal announcement of his grand discovery will be a marked date in all philosophical associations throughout the ages. That is a large prophecy, but the explanation of the circulation of the blood is, and always will be, recognised as the greatest physiological exploit the world has known. Harvey taught medicine to step in one gigantic stride from the tenets of the Alexandrian School to the medicine of the sixteenth century, behind which date we now need never look for the foundations of medical science. The poetical and classical allusions to the circulation of the blood were merely fanciful, even when their words may appear to imply exact knowledge. Galen's assistance in the final revelation should not be overlooked, for he pointed out that the arteries did contain blood as well as air, though he insisted that the septum between the right and left ventricles was permeable. Vesalius, three-quarters of a century before Harvey, demonstrated, though he did not assert, the complete separation of the ventricles, while just previously Sylvius had described the valves in the veins. The combined significance of the two researches was, however, missed, particularly as the valves were believed to act as brakes to the flow of blood from the heart. Servetus a little later, had a conception of the mass of the blood passing through the pulmonary artery and the lungs, but did not appreciate this lesser circuit as a part of a grand circulation of the whole. Harvey's treatise demonstrated the heart as the motor starting point of the blood placed the liver in its proper relations, and arrived at one general solution of the various problems in an incontrovertible manner, the only gap in his theory as it was first set out cannot be held as a reproach to him for the non-recognition of the capillary connexion between the arteries and the veins was due to his work being done without the assistance of the microscope. Malpighi completed the story of the circulation of the blood by the use of the newly invented microscope shortly after Harvey's death but Harvey's work had made Malpighi's addition a logical inference. The discovery was made and was promulgated in a faultless way. Before Harvey was ready with the exact demonstration he taught publicly in accordance with his theories, and although so radical a rearrangement of all physiology was not and could not be expected to be accepted universally and immediately, he had on his side throughout some of the greatest thinkers while others became rapid converts to his views. As is well known, there are competitors for the honour of discovering the circulation of the blood, but no one really familiar with the literature of the grounds upon which the claims are made can fail to see that William Harvey was the one and only revealer of the whole drama—the first man, indeed, who knew the plot.

A DIPLOMA IN NURSING

THE University of London has followed the University of Leeds in instituting a diploma in nursing and the first examinations will probably be held next year. The diploma is intended for those registered nurses who have undertaken further study and training so as to qualify for responsible posts, and it will generally be taken after a nurse has been qualified for at least two years, one of which must have been spent in a hospital or public health department. Before entering for the diploma the nurse will have to produce evidence of having attained to "a suitable standard of general education." The examination then required will be in two parts. The first may be taken at any time after registration or after the time at which the nurse becomes eligible to sit for the State examination, and for this part the candidate will have to show knowledge of the scientific basis and general principles of nursing, including elementary psychology, and of the history of nursing. When she has satisfied the examiners in this part the candidate may proceed to the second part, provided that for not less than two years she has been eligible to sit for the examination admitting to the general part of the Register of Nurses. In this part she need only offer one of the following alternative subjects: the nursing of children; mental nursing, including psychology, fever nursing and epidemiology, obstetric and gynæcological nursing; general nursing; or elementary economics, sociology and hygiene in relation to the duties of public health nurses or hospital administration. Those who enter for the first three of these subjects must for two years have been eligible to sit for the examination admitting to the appropriate supplementary part of the Register of Nurses. Those who take obstetrics and gynæcological nursing as their special subject must hold the certificate of the Central Midwives Board, whilst those who take elementary economics, sociology and hygiene must hold a health visitor's certificate. The examinations for the diploma will be held in October and November of each year and an elaborate syllabus is being published, together with a list of the books recommended to candidates. Registered nurses would be well advised to apply to the University of London for this syllabus and to the College of Nursing for information about existing post-graduate lectures. As a new objective the diploma will undoubtedly stimulate keen students, and its scope suggests that its effect on candidates will be educational as well as instructive.

INDEX TO "THE LANCET," VOL. I, 1926

THE Index and Title-page to Vol. I, 1926 which was completed with the issue of June 26th, is now ready. A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET 1, Bedford-street Strand, W.C. 2. Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now.

the pregnancy until near the end of the nine months if at all, since the obstetric difficulties are usually no greater than in healthy women The tuberculous woman, however, runs great risks of exacerbation of the tuberculous process all through the period of pregnancy and a still greater risk in the few months after the confinement is over, if the tuberculosis be not adequately treated These risks can be greatly minimised by sanatorium régime, and this institutional care would appear to be the obvious course of action in all patients whose circumstances will permit of it The risks of second pregnancies must depend largely on the good sense of the parents and the wisdom of the physician in handling a difficult situation For the infant the prospect is not a hopeful one There is evidently a considerable risk of the infant dying of tuberculosis during the first year This risk can no doubt be mitigated, if not entirely eliminated, in better-class homes where good nursing and adequate precautions against infection can be adopted The treatment of tuberculosis is largely a financial question Amongst the hospital classes pregnancy supervening upon tuberculosis is a grave danger and the outlook is gloomy In the wealthier classes, where sanatorium treatment can be kept up for a long period and where the mother is not compelled to live in close contact with the infant from the moment of its birth, the outlook for both mother and child is obviously brighter

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

The Museum of the Royal College of Surgeons is at present closed and will remain so for two months while Rooms I and II are being repainted The Museum has not often been closed since access to it was made easy some years ago It has not been in the decorators' hands for more than 20 years, when it was shut to the public, not having apparently been so closed since 1890 when the new Museum buildings were erected We are so accustomed to the idea of the priceless Hunterian collection being accessible to all interested in its contents that it is at first not easy to realise the long periods in its early development when it was a kind of Bluebeard's chamber unknown to the general public and to many of our medical predecessors A century ago the Museum was closed during at least eight months of the year, and visits thereto during the remaining four were often effected only by private arrangement with the conservator It was an indefatigable member of the staff of The Lancet, James Wardrop, of aneurysm fame, who first agitated in the cause of museum reform, though the conservator, William Clift, had already begun to conduct parties of visitors round the collection twice a day, a practice kept up by him to the end of his tenure of office At the thirteenth meeting of a committee of members of the College, held at Freemasons' Tavern on July 7th, 1826, Wardrop presided and read to the assembled reformers the terms and conditions on which the Hunterian collection had been delivered to the College by Parliament It was unanimously decided that the curators had not opened the Museum in the hours specified by the grant, while they had not prepared the catalogue in accordance with directions It was thereupon proposed at the meeting, in view of the default of the authorities, that the Museum should be open for four hours every day (Sundays excepted) in the winter months and six hours in summer months, that it should be accessible to all suitable visitors, and that a catalogue should be compiled The Museum Board of the College replied to this suggestion or rather stricture, by deciding that the Museum should be open two days a week for four hours at a time during the whole year The movement for reform was therefore immediately successful up to a point, but it was not till 1865 that the collection came to be open at about the same times and hours as now The accusation of neglect in providing a catalogue led to a full statement of excuses being presented to the Hunterian trustees apparently by Clift, the conservator, who had found John Hunter's collection in a state of chaos and had laboured for years to reduce it to order and to describe and identify particular specimens The interesting history of the various printed editions of the catalogue will be found in the prefaces to Paget, Goodhart and Doran's "Descriptive Catalogue of the Pathological Specimens contained in the Museum of the Royal College of Surgeons," Edit 2, 1882 These prefaces are an abundant justification of the old generation of conservators and a fine record of scientific progress There is no doubt that the attitude of the Council of the College towards the members dictated a quite unreasonable and even illegal restriction of the members' rights in respect of the Hunterian Museum, but it is easy to see that the impossibility of an immediate preparation of a catalogue was not appreciated The task was a very difficult one, and a misleading catalogue would have been worse than no catalogue at all

FLUORESCENCE

In the course of a series of articles[1] on the Pathological Action of Light upon the Eye, Dr W S Duke-Elder stated that the wave length of fluorescent light was generally longer, but sometimes shorter than that of the exciting light An annotation in our issue of July 3rd calling our readers' attention to the valuable way in which Dr Duke-Elder had marshalled his facts for the benefit of the phototherapist contained the broad assertion that the wave-length of fluorescent light is never shorter than that of the exciting light This is not strictly the case, for there is a very small group of bodies which under the excitation of light gives out radiation which is actually of shorter wave-length than that which excites it These bodies constitute exceptions to Stokes's famous law, a law which has such wide application, not only in the luminous spectrum, but in the ultra-violet and X ray regions While we gladly express our regret to Dr Duke-Elder for having apparently controverted his perfectly correct statement, we would remind our readers that the bodies in question are at present puzzling exceptions to a law of wide validity Full information about them is available in an article by Nichols and Merritt in the *Physical Review* (vols xviii and xix)

URETERAL AND TRIGONAL STRICTURE

Much of our knowledge of ureteral strictures has been derived from American observers, and A. H Peacock and R F Hain have contributed further to this subject in the July number of *Surgery, Gynecology, and Obstetrics* Their contribution consists of a study of 76 cases of ureteral stricture In the ætiology of the condition the two chief factors are infection and trauma, of which the former is the more important, for out of 76 cases 63 gave a history of infection, either acute or chronic The infection was not necessarily of the urinary tract; influenza, scarlet fever, diphtheria, pneumonia, puerperal fever, otitis media, and dental infection all led later to infection of the ureter No preference was shown for either side, but the favourite site of the stricture was found to be the lower third, and, in the case of women, more especially that portion of the ureter directly in relation to the broad ligament The patients came under observation for a great variety of symptoms, many of them having been regarded as cases of neurasthenia An interesting finding was the number of operations to which some of these patients had been subjected in order to obtain relief of their symptoms One case, that of a woman of 28, who complained of frequency of micturition and tenesmus, and had once passed a small quantity of blood, had undergone two operations on the left hip, appendicectomy, salpingectomy, a partial oöphorectomy, tonsillectomy an operation for intestinal adhesions, and a therapeutic abortion at the fifth month The real source of her trouble was a ureteral stricture In the majority of cases nothing beyond dilatation of the stricture by the passage of a ureteral bougie was found to be necessary

---

[1] The Lancet, June 12th, 19th, 26th, and July 3rd, 1926

To the same journal Frank Hinman and Miley B Wesson contribute an interesting article on the trigone of the bladder as a factor in urinary obstruction It is of course, well known that changes in the trigone occur in cases of urinary obstruction and infection The authors lay emphasis on the fact that an hypertrophied interureteral ridge may from its form and position lead at times to obstructed urination When this occurs surgical treatment may become necessary This may take the form of incision of the ridge with suture and ligature of the incised ledges in order to control hæmorrhage or of resection of the ridge and where necessary of the supratrigonal pouch so as to restore the base of the bladder to its normal form The authors instance three cases under their care of urinary obstruction and infection in which the associated changes in the trigone were so marked that operative treatment was rendered necessary In operating on a hypertrophied interureteral ridge care must be taken to avoid resecting so much of the trigonal muscle as to endanger its functional activity Special precaution must also be taken against hæmorrhage, and for this reason Young's punch operation, which otherwise might be regarded as suitable, should not be carried out The article discusses the anatomy, physiology, and pathology of the trigone, of which our knowledge still remains meagre

DE MOTU CORDIS

IT is the intention of the Royal College of Physicians of London to celebrate in 1928 the tercentenary of Harvey's publication of the famous treatise “ *Exercitatio de Motu Cordis et Sanguinis* ” It may be prophesied safely that the anniversary of Harvey's formal announcement of his grand discovery will be a marked date in all philosophical associations throughout the ages That is a large prophecy, but the explanation of the circulation of the blood is, and always will be recognised as the greatest physiological exploit the world has known Harvey taught medicine to step in one gigantic stride from the tenets of the Alexandrian School to the medicine of the sixteenth century behind which date we now need never look for the foundations of medical science The poetical and classical allusions to the circulation of the blood were merely fanciful even when their words may appear to imply exact knowledge Galen's assistance in the final revelation should not be overlooked, for he pointed out that the arteries did contain blood as well as air though he insisted that the septum between the right and left ventricles was permeable Vesalius, three-quarters of a century before Harvey, demonstrated though he did not assert the complete separation of the ventricles, while just previously Sylvius had described the valves in the veins The combined significance of the two researches was however missed particularly as the valves were believed to act as brakes to the flow of blood from the heart Servetus a little later, had a conception of the mass of the blood passing through the pulmonary artery and the lungs but did not appreciate this lesser circuit as a part of a grand circulation of the whole Harvey's treatise demonstrated the heart as the motor starting point of the blood, placed the liver in its proper relations and arrived at one general solution of the various problems in an incontrovertible manner, the only gap in his theory as it was first set out cannot be held as a reproach to him for the non-recognition of the capillary connexion between the arteries and the veins was due to his work being done without the assistance of the microscope Malpighi completed the story of the circulation of the blood by the use of the newly invented microscope shortly after Harvey's death but Harvey's work had made Malpighi's addition a logical inference The discovery was made and was promulgated in a faultless way Before Harvey was ready with the exact demonstration he taught publicly in accordance with his theories and although so radical a rearrangement of all physiology was not and could not be expected to be accepted universally and immediately, he had on his side throughout some of the greatest thinkers while others became rapid converts to his views As is well known there are competitors for the honour of discovering the circulation of the blood but no one really familiar with the literature of the grounds upon which the claims are made can fail to see that William Harvey was the one and only revealer of the whole drama—the first man, indeed who knew the plot

A DIPLOMA IN NURSING

THE University of London has followed the University of Leeds in instituting a diploma in nursing and the first examinations will probably be held next year. The diploma is intended for those registered nurses who have undertaken further study and training so as to qualify for responsible posts, and it will generally be taken after a nurse has been qualified for at least two years, one of which must have been spent in a hospital or public health department Before entering for the diploma the nurse will have to produce evidence of having attained to “ a suitable standard of general education ” The examination then required will be in two parts. The first may be taken at any time after registration or after the time at which the nurse becomes eligible to sit for the State examination, and for this part the candidate will have to show knowledge of the scientific basis and general principles of nursing, including elementary psychology, and of the history of nursing. When she has satisfied the examiners in this part the candidate may proceed to the second part provided that for not less than two years she has been eligible to sit for the examination admitting to the general part of the Register of Nurses. In this part she need only offer one of the following alternative subjects: the nursing of children; mental nursing, including psychology, fever nursing and epidemiology; obstetric and gynæcological nursing; general nursing; or elementary economics, sociology and hygiene in relation to the duties of public health nurses or hospital administration Those who enter for the first three of these subjects must for two years have been eligible to sit for the examination admitting to the appropriate supplementary part of the Register of Nurses Those who take obstetrics and gynæcological nursing as their special subject must hold the certificate of the Central Midwives Board, whilst those who take elementary economics sociology and hygiene must hold a health visitor's certificate The examinations for the diploma will be held in October and November of each year, and an elaborate syllabus is being published, together with a list of the books recommended to candidates. Registered nurses would be well advised to apply to the University of London for this syllabus and to the College of Nursing for information about existing post-graduate lectures As a new objective the diploma will undoubtedly stimulate keen students, and its scope suggests that its effect on candidates will be educational as well as instructive.

INDEX TO ‘ THE LANCET,” VOL. I 1926

THE Index and Title-page to Vol I 1926 which was completed with the issue of June 26th is now ready A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET 1, Bedford-street Strand, W C 2 Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CLXXXIV

THE TREATMENT OF INFECTION AT THE APICES OF TEETH

INFECTION at the apex of a tooth may be brought to notice in several ways, commonly as an acute alveolar abscess or as a chronic abscess discharging into the mouth by an obvious sinus It is not proposed here to discuss either of these conditions, but to confine attention to that form of apical infection which commonly occurs with no obvious signs or symptoms, and is only disclosed when a radiogram shows an area of rarefied bone immediately round the apex of a tooth or the apices of several teeth Such apical rarefaction ordinarily only occurs in "dead" teeth and nearly always in teeth the pulps of which have become exposed by the advance of dental caries and infected by organisms from the mouth and have died Those "dead" teeth in which the tooth pulp has been purposely devitalised by the dental surgeon should if his technique has been correct, be sterile at the apical portion of the pulp canal from the start, and so never show these rarefied areas, and in such teeth this is the rule

The importance of these otherwise signless and symptomless apical infections lies in the fact that they are usually found in the mouths of people who are seeking medical advice for general symptoms of a wide variety, for which no immediate cause can be found, and it is in the medical man's careful search for some source of focal infection that radiograms of the jaws frequently give the first intimation that such infections exist Moreover, these infections are more frequently found in people who take every care of their teeth, there is every reason why this should be so, because they occur far more commonly in filled dead teeth than in teeth with dead pulps which are left untreated, though they do occur in these latter also

Routine Treatment of an Infected "Dead" Tooth

A "dead" tooth with an infected pulp canal may or may not give an abnormal response to percussion (periodontitis) but the contents of the pulp chamber and canals will always be extremely foul Except at some three or four educational centres in various parts of the world where during the past few years other means have been tried, the ordinary routine treatment given by the dental surgeon preparatory to the insertion of a permanent filling in such a tooth is as follows —

The infected contents of the pulp canals are removed by mechanical means and the (attempted) sterilisation of these canals is carried out by means of sealing into the canals a dressing of a mixture of as powerful and penetrating antiseptics as one dare use consistent with non-injury to adjacent soft parts, particularly by leakage through the apical foramen of the tooth Usually such dressings are repeated several times, and occasionally many times

But the *only* signs that the tooth is ready to be filled—i e, that the root canal has been rendered sterile—which are available to the dental surgeon are these —

(1) The cessation of the clinical signs of periodontitis (which may never have been present at all)

(2) The sense of sight, that there are no obvious particles of matter left in the canals

3 The sense of smell, that the foulness has disappeared

These tests for sterility appear to me to be but feeble at the outset, particularly the third, our sense of smell is a poor sense, and with the powerful odours of the drugs which are used for antiseptic dressings about the sense of smell is of no value whatever, even to detect gross infection by gas-producing organisms—added to which is the fact, not sufficiently recognised by dental surgeons, that many infective organisms produce no smell at all on culture

After these precautions have been taken the root canals of these teeth are usually filled permanently with some such material as gutta-percha with or without the addition of antiseptic drugs, and the restoration of the tooth by one of the usual forms of filling is completed

Let it not be thought that the dental surgeon is careless in his treatment of such dead and infected teeth, because he certainly is not, the treatment and conservation of such teeth are invariably an anxiety to him Moreover, in the past the results of such treatment has been entirely justified, as many otherwise unsavable and offensive teeth have been rendered painless, comfortable, and fully functional for many years if not for the whole life of the individual However, it will be fairly obvious from the above remarks that the treatment of dead teeth is in an unsatisfactory state, and indeed this is so, for there is no proof that the root canal of the tooth, and still more the soft tissues beyond it, are really sterile Indeed, in my view, but few teeth which have become infected in the manner described are ever rendered sterile by the dental surgeon, but the inhibitory effect of the powerful drugs used on any micro-organisms present is such as usually to keep them in check Radiograms, however, too frequently show us that though teeth so treated may be entirely comfortable and function well, they have never really been sterilised, and that infection still persists and gives rise to the ordinary appearance of a rarefied periapical area

Can Infected Teeth be Sterilised?

In order to test out whether such infected teeth could be rendered sterile I induced several students interested in this matter to make some culture experiments and microscope slide films from such treated teeth *after they were thought to be clinically sterile.*

The drugs usually used for the dressing of such teeth are —

(1) A mixture of 40 per cent formalin 1 part, tricresol 1 part absolute alcohol 3 parts with the addition of a few minims of some essential oil to act as an analgesic

(2) Dichloramine T—used mainly in America

(3) Silver precipitated in situ from an antiseptic silver salt

(4) Many proprietary articles sold for this purpose, some of which are very efficient, and other mixtures

The antiseptic mixture (1) was used mostly and occasionally a proprietary article Precipitated silver was not used, because though I believe and am informed that the tooth itself really is sterilised when this is used, the soft tissues beyond are not, moreover, the tooth tissue is stained an unsightly colour, so the method is not available for anterior teeth

The routine for the experimental treatment of dead teeth with infected pulp canals was on the following lines —

First visit—Apply rubber dam. Empty pulp *chamber* thoroughly (not using any pressure towards apices) Fill chamber with a pledget of cotton-wool saturated with tricresol-formalin-alcohol solution, cover over with metal pulp cap *Seal* in with calxine Leave for 48 hours

Second visit—Apply rubber dam Remove contents of pulp canals thoroughly by mechanical means Wash out with 10 vol H_2O_2, follow with absolute alcohol Dry with hot air Fill root canals and pulp-chamber loosely with cotton-wool saturated with tricresol-formalin-alcohol solution Cover over and seal in as at first visit Leave for 48 hours

Third visit—Apply rubber dam and remove dressings If clinical appearances now indicate that tooth is ready to be filled permanently, wash out thoroughly with absolute alcohol, dry with hot air, place sterile paper point in root canal, cover and seal as before, leave for seven days (approximately)

Fourth visit—Apply rubber dam and remove dressings If clinical appearances still indicate that tooth is ready to be filled permanently, take two cultures for incubation and make two micro slide films (these last two operations under supervision) using the paper point removed from the root canal, and then redress as at second visit. If tooth is clinically not ready to fill, redress as at second visit and leave for 48 hours, and make cultures and films when apparently sterile, and so on, till the microscope tests are negative when the restoration may be completed.

The results of these experiments, as far as they went were not reassuring—indeed were very disappointing. Some 5 or 6 teeth were dressed and tested frequently over a period of six months and still were not sterile. A few others gave a similar result over rather longer periods, and one (fortunately owned by a bacteriologist) gave a sterile microscope test when weekly dressings had been continued for a year. Two others only gave positive sterile tests each after about six weeks' treatment. The tests were begun on some 30 teeth but patients (all but two being hospital patients) could not spare the time for the frequent and numerous visits needed and so only very few were really followed out. The matter is thus in urgent need of further research.

Conclusion

How, then, are we for the future to regard these dead teeth with infected pulp canals from the point of view of conservative dentistry? Let it be granted that when tested by cultures and films they can usually after prolonged treatment be rendered sterile. Then I think, we may say —

1. That for single-rooted teeth with straight pulp canals conservative treatment may be justified, but that the prolonged treatment, time occupied and necessary expense involved, will militate against such a course.
2. That for multi-rooted teeth (not so easy of access) or teeth with small and tortuous pulp canals extraction should be recommended.

Such is to my mind the only rational course—i e. teeth must either be proved sterile by culture or film, or extracted.

Many patients will object to such treatment as being too drastic, and many dental surgeons will object on account of the comfort and restoration of function which they can afford to such teeth in other ways. It must also be borne in mind that many people are walking about with many (up to eight or nine or more) such rarefactions at the apices of teeth in their mouths and no general or local symptoms whatever. On the other hand, the removal of one or two such infections in one mouth has in several cases known to me been followed almost immediately by the disappearance of the general symptoms complained of, for which no other cause could be found.

It would seem that until we have some more certain means of sterilising such teeth their conservation ought not lightly to be undertaken; till that time I would not take the responsibility of advising anyone to retain such infected areas in their mouths even if they were giving rise to no symptoms nor would I retain one myself. If conservative treatment is decided on the patient should be informed beforehand of the possible result.

EVELYN SPRAWSON, *M C*, M R C S Eng,
L R C P Lond, L D S R C S Eng
Director of Dental Studies and Lecturer on Dental Surgery and Pathology, London Hospital

---

INTERNATIONAL CONGRESS FOR LIFE-SAVING AND FIRST-AID.—The Third International Congress for Life-saving will be held at Amsterdam from Sept 6th to 11th under the presidency of Prince Henry of the Netherlands. Many different countries will be represented both officially and unofficially and national committees have been established all over the world in preparation for the Congress. Besides general sessions there will be meetings of the 11 sections, and more than 100 lectures have been arranged; there are also to be demonstrations of ambulance work and of saving the shipwrecked. The first international competition in first-aid will be a feature of the Congress, and visits will be paid to The Hague, Rotterdam and other interesting places; the municipalities of Amsterdam and Rotterdam are arranging to hold receptions. Members of the Congress will be able to get a Dutch visa for their passports without difficulty and accommodation in hotels or lodgings will be arranged as far as possible. The executive committee asks all those who wish to attend to send word without delay to the Secretary-General, Dr C J Mynlieff, Keizersgracht 131, Amsterdam.

Special Articles.

INCAPACITY FOR WORK

The New Memorandum of the Ministry of Health.

A FEW weeks ago[1] the Scottish Board of Health called the attention of insurance practitioners in Scotland to the sudden increase in the certification of claims for sickness and disablement benefit. The Minister of Health has now expressed his concern at the abnormal increase during the last two months in the number of insured persons in England and Wales receiving sickness and disablement benefit and the resulting heavy expenditure incurred by many approved societies. Information available from other sources does not indicate the prevalence of any marked epidemic or exceptional outbreak of sickness which would account for this increase in the number of cases of certified incapacity and it is significant that the ratio of expansion is not uniform throughout the country and that its geographical distribution corresponds closely with the incidence of unemployment due to the dispute in the coal trade. The memorandum upon the subject addressed to insurance practitioners runs as follows —

> The results of the examination of a large number of cases referred to referees, and in particular the high proportion of claimants who sign off in preference to presenting themselves for examination, suggest strongly that large numbers of insured persons have succeeded in obtaining or continuing to obtain medical certificates although they were not in fact incapable of work. The Minister cannot escape the conclusion that many practitioners in the industrial areas mainly affected have failed to appreciate the danger that in times of acute unemployment there is inevitably a tendency to magnify minor ailments and to claim sickness benefit in circumstances in which, under ordinary conditions no claim would be made. Normally the difference between sickness benefit and average earnings is sufficient to afford the employed person a substantial inducement not to leave work or to return to it as soon as he is able to do so; and doctors have, no doubt, in the past proceeded on the assumption that in cases in which there were no definite physical signs, the patient's account of his subjective symptoms might, in general, be accepted in the absence of any indication to the contrary. But in many areas this economic safeguard against ill-founded claims no longer exists, and the Minister fears that practitioners have not sufficiently realised that an increase in the number of claims in itself necessitates more than ordinary care in considering whether the statutory conditions for the receipt of sickness and disablement benefit have been fulfilled.
>
> He therefore desires to remind practitioners that the statutory test of title to these benefits is that the insured person has been rendered incapable of work by some specific disease or bodily or mental disablement and that strict regard must be had to this criterion in considering all cases coming before them. No practitioner is justified in allowing the economic position of the applicant for a certificate to lead him to adopt a less stringent standard than the Acts require; it should be remembered that any laxity in the issue of certificates, whether unconscious or deliberate, is extremely unfair to those doctors who have continued to take a strict view of their obligations under the Terms of Service. Moreover it must not be forgotten that excessive indulgence to individual members of approved societies must thereby deprive members in general of sums which might otherwise have been used in providing additional benefits in the future.

The Earlier Memorandum.

The opportunity has been taken to reissue simultaneously the memorandum prepared by the Ministry four years ago for the guidance of practitioners in interpreting the term "incapable of work." This memorandum made no claim to laying down legal definitions being content to summarise accepted views. The significant passages in it are the following:

> It has not been held to be necessary for the purpose of establishing a title to sickness or disablement benefit, that the insured person should be found to be incapable of work in the sense of being completely unable to carry out the

---

[1] THE LANCET July 10th p 97.

physical or mental processes which constitute "work." An insured person has been regarded as "incapable of work" when in such a condition, through some specific disease or bodily or mental disablement, that an attempt to work would be seriously prejudicial to his health

Secondly, though the fact that an insured person is unable to follow his ordinary occupation is not in itself sufficient to justify his being regarded as incapable of work, yet he would properly be so regarded if, as will ordinarily be the case, it appears probable that he will soon be able to resume his former work, and that it would therefore be unreasonable to expect him to undertake any other form of work in the meantime This is the criterion which doctors are ordinarily disposed to apply, and it suffices, no doubt, for the ordinary case of a short illness

There is, however, a group of cases which, though a minority, are yet considerable in number and of great importance in their potential effect on the sickness and disablement benefit funds, and in which other conditions need to be taken into account It is with regard to these that in the past there has been most misunderstanding by medical practitioners of the position as regards title to benefit At varying stages in the course of different diseases, or after the occurrence of particular injuries, it will become clear that there is no reasonable prospect of the patient again becoming able to resume his former occupation This may be apparent in some cases almost from the outset—for example, where a person whose work requires some particular manipulation has sustained an injury which immediately renders him permanently incapable of carrying out that manipulation, or where a person has become blind When this condition of permanent incapacity to resume the previous occupation has supervened, a different criterion from that of fitness for ordinary occupation must, it has been held, be applied, and the patient should not be certified as "incapable of work" unless in the doctor's opinion he is physically unable to perform any other suitable kind of remunerative work, whether at once or after a short course of training

A Difficult Situation

A close association has often been noted between sickness claims and social conditions, thus when wages fell and unemployment began to affect the mining industry from 1920 onwards, the incidence of reported accidents rose, while the occurrence of fatal accidents showed no such rise In a similar way the present industrial position is being associated with an abnormal increase in the number of persons receiving sickness and disablement benefit, an increase which the Ministry of Health point out in a recently published memorandum is not uniform throughout the country, but is distributed in close correspondence with the incidence of unemployment due to the dispute in the coal trade. It is an obvious presumption that the increase in applicants for certificates in respect of sickness and disablement benefit—in other words, of incapacity for work—represents a tendency to magnify minor ailments, so as to claim benefit, for which normally no claim would be made. Control of this tendency must always be difficult, especially as is pointed out in our correspondence columns when an insured person is free to change the doctor whose certification does not please him, but the Ministry rightly stress the point that the economic position of an applicant for a certificate under the Insurance Act should not affect the practitioner's judgment, and that the standard of disability—i e., of incapacity for work—should be maintained For this purpose the memorandum published some four years ago, and explaining the meaning of the term "incapable of work," is being simultaneously re-circulated to insurance practitioners It is useful that practitioners should be reminded in this way of their legal responsibilities when issuing certificates, but the medical profession can hardly resist the influence of removal of the great economic safeguard against poorly-founded claims, for it is a normal safeguard in this direction since by establishing a claim of disability the working income is reduced Moreover the absence of occupation in itself tends to introspection which may make manifest conditions, whether really latent or merely imaginary The cure for the abnormal rise in claims lies fundamentally not in an appeal to the medical profession to be exceptionally alive to malingering, but in resumption of the normal incentives to remunerative activity The new memorandum does not, we are sure, desire to reprove medicine for what medicine is in no way responsible, and if this impression were received publicly the position would be unfair to the profession Moreover the standard of ill-being in the nation, though improving, is low, it might more than occasionally justify certification for incapacity of persons who disregard their ills to the final detriment of their well-being.

REPORT OF THE LUNACY COMMISSION.

SOME CRITICAL VIEWS

THE Report of the Royal Commission on Lunacy and Mental Disorder, of which the main provisions were summarised in our last issue,[1] has, in many respects, received warm commendation from those interested in the prevention and early treatment of mental disorder It is generally agreed that the work of the Commission has been done in a thorough manner, that the Report is well-written, and that it contains a great deal of valuable information It seems probable, too, that a report so little controversial may lead to speedy legislation, which will be all to the good in so far as the long overdue permission is granted to local bodies to provide early treatment The view, however, is expressed that the public, and the medical public in particular, will need to scrutinise very closely the results of permissive legislation, a general and constant demand that the problem shall receive full and adequate handling must be maintained, in order to achieve results in the prevention of chronic mental disorder with its heavy burden to the community

Treatment without Certification

Some of those now engaged in the treatment of mental cases without certification may very naturally feel that the constructive proposals leave something to be desired No one will expect that, in the present time of economic stress, and under a Government pledged to economy, legislation of a very far-reaching nature involving much present expenditure and the initiation of a new service of preventive medicine is likely to be even proposed, much less passed by Parliament But a Royal Commission might surely put forward an ideal, and leave it for the practical politician to do the paring that may for the moment be necessary They do, indeed, point out that present expenditure on early cases may be productive of future saving—it may obviate the maintenance for life of cases coming under treatment too late for cure But the important part of their work—the consideration of provision for early treatment without certification—appears lacking in constructive ideals and imaginative foresight Very scant attention is paid to the actual provisions for care of the patient, the greater part of the report being concerned with (1) legal provisions long overdue, for treatment under a provisional order of those unable to cooperate and under a voluntary system for those who are able and willing to do so, and (2) the various local and central authorities responsible for such treatment The implication throughout is that the existing arrangements and institutions simply need extension, and it is not clearly and definitely stated how urgently separate and new institutions are necessary if the early treatment is to apply in fact to the mass of patients at present neglected. The Report suggests general hospitals, nursing homes, and mental hospitals and special clinics associated with any of these, but it merely advises that "it should be open to the local authority to provide such clinics" It does not put forward the difficulties and complications involved, nor even urge that any pressure should be brought to bear on the local authorities to make effective provision, without which little will materialise. General hospitals will not burden themselves with the procedure required by the Board of Control, nor gladly cooperate in the supervision which is necessary; nor again will they readily make suitable provision of specially trained nursing and medical staffs. It is well known that one mental patient of quite a mild type will arouse such fear and antagonism in a general hospital that the whole staff press for his immediate removal, while the neurotic is at present apt to be regarded there as a tiresome person having nothing the matter with him. Moreover, the accommodation at present in most general hospitals is unsuitable, and special buildings with gardens, open-air sleeping quarters, occupations and amusements and sound-proof, detached blocks for emergency treatment of transient noisy attacks, are essential for satisfactory early treatment. The out-patient clinic, however, may best be here.

---

[1] THE LANCET, July 31st, p 239

The provision of suitable admission blocks or villa colonies attached to, but well apart from the existing mental hospitals, may be the best solution for certain districts, but again the Commission has failed to emphasise that greatly increased medical and nursing staffs are absolutely essential for these. Further, it is only a limited proportion of the patients needing early treatment who will accept it when even the slightest association with the mental hospital is involved, and in practice it will be chiefly the cooperative section of the present mental hospital patients who apply for treatment there. Those neurotics who do not realise that their disorder is one of the mind will remain, as at present, untreated.

Special clinics can, and should, be provided; in London one exists already for such patients as have a claim on the London rates; when other local authorities are empowered, as the Commission suggests, to spend money for this purpose, it should not be impossible to arrange for a number of local bodies to cooperate in providing such accommodation as they need, or to take over existing convalescent and nursing homes and equip them suitably. It may be regretted that the Report has not put more forcibly the importance of devising such arrangements, since without them the result in practice may merely be a slight extension of treatment without certification in existing mental hospitals at the cheapest possible rate; this implies failure of a great opportunity for a far-sighted handling of the problem of relieving the community of its present burden of neurosis and psychosis.

Treatment with Certification.

From the point of view of those who have the care of private patients of the well-to-do classes, the recommendations concerning the unwilling patient are seen to have their drawbacks, especially when regarded from the point of view of the private patient. Two courses are to be made available, appearing to depend on the prognosis of the case. If the physician considers the case likely to recover within six months a provisional treatment order may be obtained. This is to necessitate a petition by a responsible relative, on which some disclosure of the patient's property is to be made. The petition is to be accompanied by one medical certificate of the usual kind, which must conclude by a statement that the condition of the patient is such that he should be detained under care and treatment. The petition and certificate are to be forwarded to a magistrate, specially appointed for the purpose, who is to see the patient, and if satisfied, give the provisional order. This order will only last for one month, at the end of which time the judicial authority must again visit the patient, and on a medical recommendation that the patient's illness is likely to terminate in the statutory time, may sign an extension of the provisional order for a further five months. At the end of this time the patient may have recovered or be sufficiently well to become a voluntary boarder. But if little or no progress towards recovery has taken place, then the usual reception order will be required, involving two medical certificates, and a further magisterial visit. In short, a year's illness may entail three medical certificates and three judicial examinations. This provisional treatment order is termed treatment without certification. Is it likely to be so regarded by the public? If it becomes law it may be found to be as objectionable to the private class of patient as the existing procedure. In fact, it is probable, writes one critic, that it will obtain, and deserve, the "stigma" that is so objectionable in the present form of certification. It is certain that many patients will be distressed by the double judicial examination in the first four weeks of illness.

It is true that the provisional order is to be used for those cases which are likely to recover in six months, the usual reception order being used for cases which are less favourable. But what physician will care to give a bad prognosis? In a mental case, what physician however experienced, can rightly give an unfavourable prognosis at the beginning of a mental illness? The obvious inference is that most cases will be admitted to care under a provisional order, and that the reception order, with two certificates, will have to be made at the end of six months in those cases which run an unfavourable course.

In view of the objection that many patients of the private class have to judicial visits, it is to be hoped that some modification of the suggested provisional order may be made.

JOURNÉES MÉDICALES DE PARIS

(BY OUR PARIS CORRESPONDENT.)

LARGE numbers of French and foreign doctors attended the Journees Medicales held at Paris from July 15th to 19th, when recognised authorities gave post-graduate lectures on medical and surgical methods or technique. The Congress was intended to refresh the knowledge of practitioners and to make them familiar with important modern advances, and it gave those present a chance of hearing some of the opinions now orthodox in France.

Amongst those who attended from abroad was Prof. E. A. Graham, of St. Louis, U.S.A., who gave an account of his work on the radiographic examination of the gall-bladder. He claims that cholecystography, the method which he devised in 1923, permits of early and accurate diagnosis of lesions of the gall-bladder which may otherwise present great difficulty.

An interesting demonstration was given by Dr. P. Ravaut, of the Hôpital St. Louis, who showed a series of 27 cases of lupus treated by diathermy coagulation. An early lesion, he said, can be effectively destroyed by this treatment at a single sitting, leaving the least possible scar, and it is thus a method of prophylaxis. Early diagnosis is very desirable, but even very extensive lupus can be dealt with if the treatment be repeated on several occasions.

Recto-sigmoidoscopy.

A session at the Grand Palais was devoted to the advantages of recto-sigmoidoscopy. This procedure, it was suggested, is far too seldom practised—partly because it is supposed to be difficult and partly because medical men are unaware of its many uses. Dr. Bensaude, of the Hôpital St. Antoine, laid stress on its value from two points of view, the diagnostic and the therapeutic. It ought, he said, to be the prevailing means of diagnosing cancer of the rectum, which is characterised on examination by its shape, its bright red colour, its friability, and its consistency, and by the obstruction which it causes to the passage of the rectoscope. Hæmorrhoids may either simulate or mask it. Sigmoidoscopy, said Dr. Bensaude, is necessary in cases of dysentery or dysenteric colitis, even if examination for parasites or bacteria prove positive, since cancer may complicate a case of dysentery or may occur in patients who are carriers of amœbæ. Some neoplasms look like benign polyps and their malignant nature can only be recognised at operation; villous tumours on the other hand, are frequently mistaken for cancer. Therapeutic endoscopy, he stated is used for three main purposes —in the treatment of piles, of polyps, and of rectal stricture In piles the use of sclerosing injections is giving remarkably satisfactory results and there are never any serious complications arising from them In all the benign new growths of the rectum electro-coagulation is the treatment of choice, and for rectal strictures the success of diathermy contrasts favourably with the failure of surgical intervention as hitherto practised

Peptone Therapy.

Dr Pasteur Vallery-Radot (Paris) gave a demonstration of the technique of skin reactions and the results to be got in cases of asthma, hay fever, urticaria, and other anaphylactic conditions A positive reaction, he said, should be regarded as an indication for specific treatment, but often, unfortunately, it is impossible to protect the patient from the protein which upsets him, and in these cases desensitisation is required In dealing with digestive anaphylaxis desensitisation may sometimes be brought about by giving increasing quantities of the harmful protein by the mouth over a period of several weeks, or the patient may be given, an hour after the food which affects him, an infinitesimal quantity of the very same food According to Dr Vallery-Radot, where the patient is troubled with respiratory anaphylaxis the desensitising protein should be given subcutaneously, or, better still, cutaneously This last method is without danger and simply consists in producing repeated skin reactions with the specific antigen over a period of several weeks It must be recognised, however, that though diagnostic skin reactions sometimes reveal the particular protein to blame for the patient's symptoms, nevertheless, more often than not, they are negative and throw no light on the culprit. In these circumstances non-specific desensitisation is needed In alimentary anaphylaxis a small dose of peptone—preferably polyvalent—should be given by mouth one hour after meals three times a day Eating between the three meals should be forbidden For asthma the peptone should be given by strictly intradermic injection, daily for about three weeks A 50 per cent solution of Witte's peptone may be used in doses of 0 1 to 0 3 c cm The treatment acts by producing a local reaction which determines a general shock; after a series of these shocks more or less permanent desensitisation may be hoped for.

Treatment and Prophylaxis of Diphtheria

The research done during the last few years on diphtheria—and especially the discoveries of Ramon of the Pasteur Institute—have improved the treatment and prophylaxis of diphtheria In a conference at the Hôpital des Enfants Malades, Dr Pierre Lereboullet said that early, intensive, and prolonged serotherapy should be the rule in treating diphtheritic sore-throat The doses, whilst varying with the duration and the gravity of the disease, ought to be much higher than is generally believed In an ordinary angina the least that should be injected is from 150 to 200 c cm, and the total dose, which ought never to be less than 500 c cm, could and should reach or even exceed 800 or 1000 c cm Thanks to these doses malignant diphtheria shows 80 per cent of cures Moreover, the massive and systematic use of serum hinders the appearance of paralysis For malignant diphtheria serotherapy should be associated with the administration of adrenalin subcutaneously and of suprarenal extract by the mouth Accidents with serum have been much diminished by the use of Ramon's purified serum, and diphtheria can also be prevented by lasting and harmless vaccination Two or three subcutaneous injections of Ramon's anatoxin are made at intervals of three weeks to bring about this protection, and the results are much more satisfactory than those of serum prophylaxis, whether in hospitals or communities or amongst families and contacts

Cancer of the Colon

The Société des Chirurgiens of Paris held on July 15th a special sitting in connexion with the Journées Medicales Among the more important communications was one by Dr Victor Pauchet who has come to the conclusion that operation is desirable in all cases where cancer of the intestine is so much as suspected Laparotomy is without risk, whereas delay may cost the patient his life The prognosis depends on the time of intervention as well as on the technique of the surgeon Diagnosis is difficult at first and Dr Pauchet advises exploratory laparotomy when any of the following symptoms are present—abdominal tumour, constipation with diarrhœa, pain accompanied by colic and rumbling, blood or mucus in the stools, obstruction or lacunæ seen with the X rays, or visible peristalsis He is not content with rectocolic endoscopy since it only shows tumours in the lower sigmoid

Lavage of the Vesiculæ Seminales

At the same session Dr Georges Luys demonstrated his technique for lavage of the seminal vesicles, which he has carried out more than 150 times The operation, he said, is very simple, although it may appear rather delicate The object is to get rid of those organisms which ordinary methods, such as massage of the vesiculæ or urethral dilatations, cannot touch An incision, 2 cm long, is made at the level of the root of the scrotum, the vas deferens is isolated carefully and 10 to 15 c cm of collargol are injected into its lumen with a trocar The patient is kept in bed on a sedative régime for four days The collargol remains in the vesiculæ seminales for some time—for at least four days and sometimes as long as three weeks The immediate and remote results of this method make it very satisfactory for the treatment of infected vesiculæ seminales

---

ROYAL MEDICAL BENEVOLENT FUND

At the last meeting of the Committee 35 cases were considered and £388 10*s* voted to 25 applicants The following is a summary of some of the cases relieved:—

Son, aged 15, of M D who died in 1922 Found living in undesirable surroundings A reputable firm gave him a job as telephone boy, but he was found quite incapable of doing the work The Fund has been asked to help with maintenance, as a home has been found for the lad where he will have every care and attention Arrangements have been made for private tuition, as his educational attainments are below those of a National schoolboy It is suggested that two years' rudimentary education should be given in his spare time It is hoped that other assistance will be forthcoming as the boy has the address and manners of a gentleman's son, though his education has been totally neglected Fund voted £26 in four quarterly instalments towards his maintenance

Widow, aged 60, of M R C S Eng who practised in London and died in 1908 Dependent on daughter, aged 36, who teaches French in Paris Mother and daughter live in one room at a cost of Fr 1115 and the latter receives Fr 700 a month She has been ill and the Fund has been approached to help in their distress Voted £12 in 12 monthly instalments of £1 each and a special grant of £5 Previous relief since 1913 amounted to £106

Widow, aged 71, of M R C S Eng who practised in London and died in 1913 Has a small cottage outside London and supplements her small income of £30 per annum by letting, from which she has received £41 during the last twelve months A friend has given £20 and she has been able to pay her way but asks for assistance for repairs as the rooms are in a bad condition for letting Voted £15 Previous relief since 1916 amounts to £28

Daughter, aged 76 of M R C S who was in the R.A M C and died in 1891 A condition of residence in a home is an income of £40 per annum and the applicant received only £32 per annum from the War Office Fund voted £20 in four quarterly instalments Previous relief since 1921 amounts to £70

Subscriptions may be sent to the Hon Treasurer, Sir Charters Symonds, at 11, Chandos-street, London, W 1

New Nurses' Home at West Derby —An extension of the nurses' home has been opened at the Alder Hey Hospital, Knotty Ash This hospital was built in 1914 and has nearly 1000 beds, chiefly used for the treatment of tuberculous and deformed children The nursing staff of 200 includes 100 pupils in training and the new extension, which almost doubles the accommodation, has cost about £17,000

Correspondence.

"Audi alteram partem."

THE EX-BABY.

To the Editor of THE LANCET.

SIR,—I was much interested in reading your annotation in THE LANCET of July 24th, and at once referred to the report of the Westminster Maternity and Child Welfare Conference in your issue of July 17th. My special interest refers to the gap in medical supervision between infancy and school entrance pointed out by Dame Janet Campbell. This gap I have myself drawn attention to more than once in connexion especially with squint. The subject of squint seems to have been mentioned but not enlarged upon at the Welfare Conference. Yet squint and its underlying principal ætiological factor, the refraction error, are together of such importance to the visual efficiency of the nation that I would ask you, Sir, by way of emphasising the importance of the "ex-baby," to allow me to quote from two recent communications of my own. At the Ophthalmological Congress at Oxford in 1924, in my opening paper upon the treatment of squint,[1] I said:—

> "May I put theory on one side and say that taking juvenile squints all over, everyone will agree that the earlier we can establish a meticulous optical correction after the appearance of the squint the greater will be the number of cases which improve in visual acuity and ultimately recover? Nevertheless, our object and ideal should be the correction of the refraction error before the squint occurs. This ideal seems at the present moment impossible to reach on account of the obvious difficulty of examining children of pre-school age."

Again, at the 1926 Congress of the Ophthalmological Society, U.K., when dealing with Birth Injuries of the Eye, the following will be found (when the Transactions for 1926 are published) in my opening paper:—

> "At this point I would like to express my conviction of the value which could be obtained from a link record of each individual from birth to school age. School medical statistics are capable of providing a record back to 5 or 6 years of age of any child. If only we could have the medical history from birth to school age I feel convinced we should be able to obtain light on a variety of subjects."

A letter to the Editor is not the place in which to enlarge upon a subject of this kind, yet my very considerable experience of children's eye diseases as ophthalmic surgeon to a large education authority impels me to encroach upon your space in order to support Dame Janet Campbell's plea for the filling of the gap in general medical control of the child to which she has referred.—I am, Sir, yours faithfully,

Stirling, July 27th, 1926. ERNEST THOMSON.

To the Editor of THE LANCET.

SIR,—The gap in our organisation for the care of the child of pre-school age, to which attention has been drawn by Dame Janet Campbell, and on which you comment in your issue of July 24th, does not exist everywhere, and would not have existed anywhere if, in 1918 the Government had made the Maternity and Child Welfare Act compulsory in place of optional, and if the powers which this Act gives were faithfully carried out by local authorities. In many of the areas where the Act has been adopted—and certainly in this city—there is no gap. Children are supervised by the maternity and child welfare officials from their antenatal period to the end of the fourth year, and while it cannot be contended that the supervision is anything like complete, it may justly be claimed that there is no gap. The first centre day in every month at each of the 11 centres in Newcastle is devoted exclusively to children aged from 1½ to 5 years, and in 1925 2000 of these children attended our centres 16,000 times.—I am, Sir, yours faithfully,

A. F. G. SPINKS,
Maternity and Child Welfare Medical Officer, Newcastle upon Tyne.

July 29th, 1926.

---

[1] Trans. Ophth. Soc., U.K., 1924.

CERTIFICATION OF INCAPACITY FOR WORK

To the Editor of THE LANCET.

SIR,—A memorandum has just been issued to insurance practitioners by the Minister of Health on the above subject. It is a surprise to me that it has not been forthcoming at an earlier date. Under the present regulations an insured person is free to change his doctor whenever he likes, the obvious result being that if his doctor will not certify him unfit he at once changes to one who will. As long as the panel doctor is subject to a threat of changing doctors if he does not carry out his patient's wishes the increase in certification is bound to take place. It is obvious to any right-thinking person that a constant change of doctor at will in a Government medical service (and the panel service is obviously one) is subversive to any form of discipline. It is a mystery to me why the British Medical Association was so keen on it. Why not suggest it also for Navy, Army and Air Force? The result is that in order to be a successful panel doctor the most important thing is to offer a certificate of incapacity to all who ask for it, whether they are sick or not; a knowledge of one's job is a secondary consideration. I know from personal experience that if one tries to do one's job conscientiously it is disastrous to one's pocket, and I strongly advise young men entering practice to avoid the panel as the devil would holy water. The panel service ought to be made a whole-time one at fixed salaries and pensions and discipline for patients, or else scrapped; at present it is a heartbreaking and degrading service for a doctor who wants to do his job conscientiously.

I am, Sir, yours faithfully,

Exeter, July 24th, 1926. CHARLES H. CARROLL.

THE DEFINITION OF DRUNKENNESS

To the Editor of THE LANCET.

SIR,—An account has appeared in local newspapers of the trial and acquittal of a motorist alleged to be drunk, which occurred here recently.

As I am told that this is the first case of the kind to be tried at Quarter Sessions it may well be of national importance. According to the police evidence the accused could not stand or walk alone on admission to the police station. He called his own doctor who examined him, but who was not called by the defence. Presumably, therefore, this doctor's evidence would not have been in favour of the prisoner. I saw the man shortly after the other doctor—that is, more than one hour after his admission to the cells. He was then familiar, jocular, flushed, and acted foolishly, as described in the paper, but he could walk all right and all his movements were fairly well coördinated. He came before the magistrates but elected to be tried at Quarter Sessions. At the latter court I gave evidence, and when asked if he were drunk when I saw him I said "Yes." Other witnesses, however, did not use this term, but simply said that he was, in their opinion, "under the influence of drink."

As this case may create a precedent it is very important to have an authoritative definition of the term "drunk." The jury apparently did not consider that a man who was "under the influence of drink" and whose judgment and discretion were obviously gone, was necessarily "drunk."

The man who is "drunk and incapable" is no danger to the public as he cannot drive a car. The man who is a real danger is one who is less inebriated but who is self-confident and reckless, but who, if the above precedent be followed, will never be convicted.

The result of this trial will be to discourage the police from taking any action in such cases until some accident has occurred. In the Mental Deficiency Act, which deals with somewhat similar points as regards responsibility, definitions of what is meant by the terms 'imbecile," "a feeble-minded person" &c., are given, and it is surely possible and quite

Correspondence.

"Audi alteram partem."

THE EX-BABY.

To the Editor of THE LANCET

SIR,—I was much interested in reading your annotation in THE LANCET of July 24th, and at once referred to the report of the Westminster Maternity and Child Welfare Conference in your issue of July 17th My special interest refers to the gap in medical supervision between infancy and school entrance pointed out by Dame Janet Campbell This gap I have myself drawn attention to more than once in connexion especially with squint The subject of squint seems to have been mentioned but not enlarged upon at the Welfare Conference Yet squint and its underlying principal ætiological factor, the refraction error, are together of such importance to the visual efficiency of the nation that I would ask you, Sir, by way of emphasising the importance of the "ex-baby," to allow me to quote from two recent communications of my own At the Ophthalmological Congress at Oxford in 1924, in my opening paper upon the treatment of squint,[1] I said —

> "May I put theory on one side and say that taking juvenile squints all over, everyone will agree that the earlier we can establish a meticulous optical correction after the appearance of the squint the greater will be the number of cases which improve in visual acuity and ultimately recover ? Nevertheless, our object and ideal should be the correction of the refraction error before the squint occurs This ideal seems at the present moment impossible to reach on account of the obvious difficulty of examining children of pre-school age."

Again, at the 1926 Congress of the Ophthalmological Society, U K , when dealing with Birth Injuries of the Eye, the following will be found (when the Transactions for 1926 are published) in my opening paper —

> "At this point I would like to express my conviction of the value which could be obtained from a link record of each individual from birth to school age School medical statistics are capable of providing a record back to 5 or 6 years of age of any child. If only we could have the medical history from birth to school age I feel convinced we should be able to obtain light on a variety of subjects "

A letter to the Editor is not the place in which to enlarge upon a subject of this kind, yet my very considerable experience of children's eye diseases as ophthalmic surgeon to a large education authority impels me to encroach upon your space in order to support Dame Janet Campbell's plea for the filling of the gap in general medical control of the child to which she has referred —I am, Sir, yours faithfully,

Stirling, July 27th, 1926 ERNEST THOMSON

To the Editor of THE LANCET

SIR,—The gap in our organisation for the care of the child of pre-school age, to which attention has been drawn by Dame Janet Campbell, and on which you comment in your issue of July 24th, does not exist everywhere, and would not have existed anywhere if, in 1918 the Government had made the Maternity and Child Welfare Act compulsory in place of optional, and if the powers which this Act gives were faithfully carried out by local authorities In many of the areas where the Act has been adopted—and certainly in this city—there is no gap Children are supervised by the maternity and child welfare officials from their antenatal period to the end of the fourth year, and while it cannot be contended that the supervision is anything like complete, it may justly be claimed that there is no gap The first centre day in every month at each of the 11 centres in Newcastle is devoted exclusively to children aged from 1½ to 5 years, and in 1925 2000 of these children attended our centres 16,000 times —I am, Sir, yours faithfully,

A. F G. SPINKS,
Maternity and Child Welfare Medical
Officer, Newcastle upon-Tyne

July 29th, 1926

---

[1] Trans Ophth Soc , U K , 1924

CERTIFICATION OF INCAPACITY FOR WORK

To the Editor of THE LANCET

SIR,—A memorandum has just been issued to insurance practitioners by the Minister of Health on the above subject It is a surprise to me that it has not been forthcoming at an earlier date Under the present regulations an insured person is free to change his doctor whenever he likes, the obvious result being that if his doctor will not certify him unfit he at once changes to one who will As long as the panel doctor is subject to a threat of changing doctors if he does not carry out his patient's wishes, the increase in certification is bound to take place It is obvious to any right-thinking person that a constant change of doctor at will in a Government medical service (and the panel service is obviously one) is subversive to any form of discipline It is a mystery to me why the British Medical Association was so keen on it Why not suggest it also for Navy, Army, and Air Force ? The result is that in order to be a successful panel doctor the most important thing is to offer a certificate of incapacity to all who ask for it, whether they are sick or not , a knowledge of one's job is a secondary consideration I know from personal experience that if one tries to do one's job conscientiously it is disastrous to one's pocket, and I strongly advise young men entering practice to avoid the panel as the devil would holy water The panel service ought to be made a whole-time one at fixed salaries and pensions and discipline for patients, or else scrapped ; at present it is a heartbreaking and degrading service for a doctor who wants to do his job conscientiously

I am, Sir, yours faithfully,

Exeter, July 24th, 1926 CHARLES H CARROLL.

THE DEFINITION OF DRUNKENNESS.

To the Editor of THE LANCET

SIR,—An account has appeared in local newspapers of the trial and acquittal of a motorist alleged to be drunk, which occurred here recently

As I am told that this is the first case of the kind to be tried at Quarter Sessions it may well be of national importance According to the police evidence the accused could not stand or walk alone on admission to the police station He called his own doctor, who examined him, but who was not called by the defence Presumably, therefore, this doctor's evidence would not have been in favour of the prisoner I saw the man shortly after the other doctor—that is, more than one hour after his admission to the cells He was then familiar, jocular, flushed, and acted foolishly, as described in the paper ; but he could walk all right and all his movements were fairly well coordinated He came before the magistrates, but elected to be tried at Quarter Sessions At the latter court I gave evidence, and when asked if he were drunk when I saw him, I said "Yes." Other witnesses, however, did not use this term, but simply said that he was, in their opinion, "under the influence of drink "

As this case may create a precedent it is very important to have an authoritative definition of the term "drunk." The jury apparently did not consider that a man who was "under the influence of drink," and whose judgment and discretion were obviously gone, was necessarily "drunk."

The man who is "drunk and incapable" is no danger to the public as he cannot drive a car The man who is a real danger is one who is less inebriated, but who is self-confident and reckless, but who, if the above precedent be followed, will never be convicted

The result of this trial will be to discourage the police from taking any action in such cases until some accident has occurred In the Mental Deficiency Act, which deals with somewhat similar points as regards responsibility, definitions of what is meant by the terms "imbecile" "a feeble-minded person" &c , are given, and it is surely possible and quite endoscopy, he stated is used for three main purposes—in the treatment of piles of polyps, and of rectal stricture In piles the use of sclerosing injections is giving remarkably satisfactory results and there are never any serious complications arising from them In all the benign new growths of the rectum electrocoagulation is the treatment of choice, and for rectal strictures the success of diathermy contrasts favourably with the failure of surgical intervention as hitherto practised

Peptone Therapy

Dr Pasteur Vallery-Radot (Paris) gave a demonstration of the technique of skin reactions and the results to be got in cases of asthma, hay fever, urticaria, and other anaphylactic conditions A positive reaction, he said, should be regarded as an indication for specific treatment, but often, unfortunately, it is impossible to protect the patient from the protein which upsets him, and in these cases desensitisation is required In dealing with digestive anaphylaxis desensitisation may sometimes be brought about by giving increasing quantities of the harmful protein by the mouth over a period of several weeks, or the patient may be given, an hour after the food which affects him, an infinitesimal quantity of the very same food According to Dr Vallery-Radot, where the patient is troubled with respiratory anaphylaxis the desensitising protein should be given subcutaneously, or, better still, cutaneously This last method is without danger and simply consists in producing repeated skin reactions with the specific antigen over a period of several weeks It must be recognised, however, that though diagnostic skin reactions sometimes reveal the particular protein to blame for the patient's symptoms, nevertheless, more often than not, they are negative and throw no light on the culprit In these circumstances non-specific desensitisation is needed In alimentary anaphylaxis a small dose of peptone—preferably polyvalent—should be given by mouth one hour after meals three times a day Eating between the three meals should be forbidden For asthma the peptone should be given by strictly intradermic injection, daily for about three weeks A 50 per cent solution of Witte's peptone may be used in doses of 0 1 to 0 3 c cm The treatment acts by producing a local reaction which determines a general shock, after a series of these shocks more or less permanent desensitisation may be hoped for

Treatment and Prophylaxis of Diphtheria

The research done during the last few years on diphtheria—and especially the discoveries of Ramon of the Pasteur Institute—have improved the treatment and prophylaxis of diphtheria In a conference at the Hôpital des Enfants Malades, Dr Pierre Lereboullet said that early, intensive, and prolonged serotherapy should be the rule in treating diphtheritic sore-throat The doses, whilst varying with the duration and the gravity of the disease, ought to be much higher than is generally believed In an ordinary angina the least that should be injected is from 150 to 200 c cm, and the total dose, which ought never to be less than 500 c cm, could and should reach or even exceed 800 or 1000 c cm Thanks to these doses malignant diphtheria shows 80 per cent of cures Moreover, the massive and systematic use of serum hinders the appearance of paralysis For malignant diphtheria serotherapy should be associated with the administration of adrenalin subcutaneously and of suprarenal extract by the mouth Accidents with serum have been much diminished by the use of Ramon's purified serum, and diphtheria can also be prevented by lasting and harmless vaccination Two or three subcutaneous injections of Ramon's anatoxin are made at intervals of three weeks to bring about this protection, and the results are much more satisfactory than those of serum prophylaxis, whether in families and hospitals or communities or amongst contacts

Cancer of the Colon

The Société des Chirurgiens of Paris held on July 15th a special sitting in connexion with the Journees Médicales Among the more important communications was one by Dr Victor Pauchet who has come to the conclusion that operation is desirable in all cases where cancer of the intestine is so much as suspected Laparotomy is without risk, whereas delay may cost the patient his life The prognosis depends on the time of intervention as well as on the technique of the surgeon Diagnosis is difficult at first and Dr Pauchet advises exploratory laparotomy when any of the following symptoms are present—abdominal tumour, constipation with diarrhœa, pain accompanied by colic and rumbling, blood or mucus in the stools, obstruction or lacunæ seen with the X rays, or visible peristalsis He is not content with rectocolic endoscopy since it only shows tumours in the lower sigmoid

Lavage of the Vesiculæ Seminales

At the same session Dr Georges Luys demonstrated his technique for lavage of the seminal vesicles, which he has carried out more than 150 times The operation, he said, is very simple, although it may appear rather delicate The object is to get rid of those organisms which ordinary methods, such as massage of the vesiculæ or urethral dilatations, cannot touch An incision, 2 cm long, is made at the level of the root of the scrotum; the vas deferens is isolated carefully and 10 to 15 c cm of collargol are injected into its lumen with a trocar. The patient is kept in bed on a sedative régime for four days The collargol remains in the vesiculæ seminales for some time—for at least four days and sometimes as long as three weeks The immediate and remote results of this method make it very satisfactory for the treatment of infected vesiculæ seminales

ROYAL MEDICAL BENEVOLENT FUND

AT the last meeting of the Committee 35 cases were considered and £388 10s voted to 25 applicants The following is a summary of some of the cases relieved —

Son, aged 15, of M D who died in 1922 Found living in undesirable surroundings A reputable firm gave him a job as telephone boy, but he was found quite incapable of doing the work The Fund has been asked to help with maintenance, as a home has been found for the lad where he will have every care and attention Arrangements have been made for private tuition, as his educational attainments are below those of a National schoolboy It is suggested that two years' rudimentary education should be given in his spare time It is hoped that other assistance will be forthcoming as the boy has the address and manners of a gentleman's son, though his education has been totally neglected Fund voted £26 in four quarterly instalments towards his maintenance

Widow, aged 60, of M R C S Eng who practised in London and died in 1908 Dependent on daughter, aged 36, who teaches French in Paris Mother and daughter live in one room at a cost of Fr 1115 and the latter receives Fr 700 a month She has been ill and the Fund has been approached to help in their distress Voted £12 in 12 monthly instalments of £1 each, and a special grant of £5 Previous relief since 1913 amounted to £106

Widow, aged 71, of M R C S Eng who practised in London and died in 1913 Has a small cottage outside London and supplements her small income of £30 per annum by letting, from which she has received £41 during the last twelve months A friend has given £20 and she has been able to pay her way, but asks for assistance for repairs as the rooms are in a bad condition for letting Voted £15 Previous relief since 1916 amounts to £28

Daughter, aged 76 of M R C S who was in the R A M C and died in 1891 A condition of residence in a home is an income of £40 per annum and the applicant received only £32 per annum from the War Office Fund voted £20 in four quarterly instalments Previous relief since 1921 amounts to £70

Subscriptions may be sent to the Hon Treasurer, Sir Charters Symonds, at 11, Chandos street, London, W 1

NEW NURSES' HOME AT WEST DERBY —An extension of the nurses' home has been opened at the Alder Hey Hospital, Knotty Ash This hospital was built in 1914 and has nearly 1000 beds, chiefly used for the treatment of tuberculous and deformed children The nursing staff of 200 includes 160 pupils in training, and the new extension, which almost doubles the accommodation, has cost about £17,000

Correspondence.

"Audi alteram partem."

THE EX-BABY.

To the Editor of THE LANCET

SIR,—I was much interested in reading your annotation in THE LANCET of July 24th, and at once referred to the report of the Westminster Maternity and Child Welfare Conference in your issue of July 17th. My special interest refers to the gap in medical supervision between infancy and school entrance pointed out by Dame Janet Campbell. This gap I have myself drawn attention to more than once in connexion especially with squint. The subject of squint seems to have been mentioned but not enlarged upon at the Welfare Conference. Yet squint and its underlying principal ætiological factor, the refraction error, are together of such importance to the visual efficiency of the nation that I would ask you, Sir, by way of emphasising the importance of the "ex-baby," to allow me to quote from two recent communications of my own. At the Ophthalmological Congress at Oxford in 1924, in my opening paper upon the treatment of squint,[1] I said:—

> "May I put theory on one side and say that taking juvenile squints all over everyone will agree that the earlier we can establish a meticulous optical correction after the appearance of the squint the greater will be the number of cases which improve in visual acuity and ultimately recover? Nevertheless, our object and ideal should be the correction of the refraction error before the squint occurs. This ideal seems at the present moment impossible to reach on account of the obvious difficulty of examining children of pre-school age."

Again, at the 1926 Congress of the Ophthalmological Society, U.K., when dealing with Birth Injuries of the Eye, the following will be found (when the Transactions for 1926 are published) in my opening paper:—

> "At this point I would like to express my conviction of the value which could be obtained from a link record of each individual from birth to school age. School medical statistics are capable of providing a record back to 5 or 6 years of age of any child. If only we could have the medical history from birth to school age I feel convinced we should be able to obtain light on a variety of subjects."

A letter to the Editor is not the place in which to enlarge upon a subject of this kind, yet my very considerable experience of children's eye diseases as ophthalmic surgeon to a large education authority impels me to encroach upon your space in order to support Dame Janet Campbell's plea for the filling of the gap in general medical control of the child to which she has referred.—I am, Sir, yours faithfully,

Stirling, July 27th, 1926. ERNEST THOMSON.

To the Editor of THE LANCET

SIR,—The gap in our organisation for the care of the child of pre-school age, to which attention has been drawn by Dame Janet Campbell, and on which you comment in your issue of July 24th, does not exist everywhere, and would not have existed anywhere if, in 1918, the Government had made the Maternity and Child Welfare Act compulsory in place of optional, and if the powers which this Act gives were faithfully carried out by local authorities. In many of the areas where the Act has been adopted—and certainly in this city—there is no gap. Children are supervised by the maternity and child welfare officials from their antenatal period to the end of the fourth year, and while it cannot be contended that the supervision is anything like complete, it may justly be claimed that there is no gap. The first centre day in every month at each of the 11 centres in Newcastle is devoted exclusively to children aged from 1½ to 5 years, and in 1925 2000 of these children attended our centres 16,000 times.—I am, Sir, yours faithfully,

A. F. G. SPINKS,
Maternity and Child Welfare Medical
July 29th, 1926. Officer, Newcastle upon Tyne.

---

[1] Trans. Ophth. Soc., U.K., 1924.

CERTIFICATION OF INCAPACITY FOR WORK.

To the Editor of THE LANCET.

SIR,—A memorandum has just been issued to insurance practitioners by the Minister of Health on the above subject. It is a surprise to me that it has not been forthcoming at an earlier date. Under the present regulations an insured person is free to change his doctor whenever he likes, the obvious result being that if his doctor will not certify him unfit he at once changes to one who will. As long as the panel doctor is subject to a threat of changing doctors if he does not carry out his patient's wishes the increase in certification is bound to take place. It is obvious to any right-thinking person that a constant change of doctor at will in a Government medical service (and the panel service is obviously one) is subversive to any form of discipline. It is a mystery to me why the British Medical Association was so keen on it. Why not suggest it also for Navy, Army, and Air Force? The result is that in order to be a successful panel doctor the most important thing is to offer a certificate of incapacity to all who ask for it, whether they are sick or not; a knowledge of one's job is a secondary consideration. I know from personal experience that if one tries to do one's job conscientiously it is disastrous to one's pocket, and I strongly advise young men entering practice to avoid the panel as the devil would holy water. The panel service ought to be made a whole-time one at fixed salaries and pensions and discipline for patients, or else scrapped: at present it is a heartbreaking and degrading service for a doctor who wants to do his job conscientiously.

I am, Sir, yours faithfully,

Exeter, July 24th, 1926. CHARLES H. CARROLL.

THE DEFINITION OF DRUNKENNESS

To the Editor of THE LANCET

SIR,—An account has appeared in local newspapers of the trial and acquittal of a motorist alleged to be drunk, which occurred here recently.

As I am told that this is the first case of the kind to be tried at Quarter Sessions it may well be of national importance. According to the police evidence the accused could not stand or walk alone on admission to the police station. He called his own doctor who examined him, but who was not called by the defence. Presumably, therefore, this doctor's evidence would not have been in favour of the prisoner. I saw the man shortly after the other doctor—that is, more than one hour after his admission to the cells. He was then familiar, jocular, flushed, and acted foolishly as described in the paper, but he could walk all right and all his movements were fairly well coordinated. He came before the magistrates, but elected to be tried at Quarter Sessions. At the latter court I gave evidence, and when asked if he were drunk when I saw him, I said "Yes." Other witnesses, however, did not use this term, but simply said that he was, in their opinion, "under the influence of drink."

As this case may create a precedent it is very important to have an authoritative definition of the term "drunk." The jury apparently did not consider that a man who was "under the influence of drink" and whose judgment and discretion were obviously gone was necessarily "drunk."

The man who is "drunk and incapable" is no danger to the public as he cannot drive a car. The man who is a real danger is one who is less inebriated, but who is self-confident and reckless, but who, if the above precedent be followed, will never be convicted.

The result of this trial will be to discourage the police from taking any action in such cases until some accident has occurred. In the Mental Deficiency Act, which deals with somewhat similar points as regards responsibility, definitions of what is meant by the terms "imbecile," "a feeble-minded person," &c., are given, and it is surely possible and quite as important to define what is meant by the term "drunk" *as used in this recent Act* This appears to be a point which might well be raised by the medical members in Parliament, or taken up more vigorously and without delay by the B M A

I am, Sir, yours faithfully,

N I SPRIGGS, M D, F R C S,
Leicester City Police Surgeon, Member of
Executive Committee, Leicester and
Rutland Division of B M A

July 29th, 1926

Obituary.

JOHN CHRISTIE McVAIL, M D, C M ST AND AND GLASG, LL D, F R F P S G, D P H CAMB,

DEPUTY CHAIRMAN, NATIONAL INSURANCE, SCOTLAND

WE regret to announce the death of John Christie McVail, who died on Thursday, July 29th, at the age of 77

Born at Kilmarnock, he was the son of the late James McVail of that city, and was educated at the Universities of St Andrews and Glasgow He graduated in medicine at the former University in 1873, proceeding to the doctorate two years later, and was one of the first to take the newly-instituted Diploma of Public Health at the University of Cambridge He practised in Kilmarnock for nearly 20 years, until he was appointed medical officer of health in 1891 for the combined counties of Stirling and Dumbarton, and we owe to Sir Leslie MacKenzie the following appreciation of McVail alike as a practitioner and as an official

"My first meeting with Dr John C McVail was in 1891 He had been appointed medical officer of health for the combined counties of Stirling and Dumbarton He was just winding-up his practice in Kilmarnock I spent two days with him, and I began to understand the strength of intellect and will that enabled him to conduct a heavy private practice and yet to find time and energy for the general studies embodied in 'Vaccination Vindicated' and many other productions of those 18 years A man of McVail's ambitions and brains would find new problems in any profession, but his interest in vaccination was a reaction to a great epidemic of small-pox He could not be satisfied until he had gone into the whole problem It is only a few years ago that, in a course of public lectures, he gave his estimate of the later developments He was also in those days keenly interested in antiseptic surgery He was a student when Lister taught, but he retained to the end a certain critical attitude about the data on which the Listerian propositions and practices were founded He used to joke about the 'statistical conscience' and the way it operated in suppressing or 'explaining' unfavourable cases But even in his practice in Kilmarnock the public health interest became manifest, and we may say that McVail passed into the health service because he had seen how much could be done if the organisation for prevention were once properly developed Meanwhile his work on small-pox made him one with the chief medical officers of the English Local Government Board—Buchanan, Power, and others When the Vaccination Commission was formed, McVail was, of course, a leading witness and adviser

"The counties of Stirling and Dumbarton gave scope for his superabundant energies For McVail was a big, strong man mentally as well as physically He was by nature a man of power He 'carried weight' and, in the 'nineties of last century, when county health organisation was a blank, McVail was just the kind of personality to do in his counties what men like Gairdner and Burn Russell (two much-admired seniors) had done in the city of Glasgow He himself was senior to most of us He rejoiced in argument He could give and take hard hits, but always and everywhere he impressed men with his earnestness And there was always at the end even of the warmest encounters the gracious laugh of the serious man whose imagination was on fire with great social movements

"When the great Poor-law Commission was instituted, Dr McVail was appointed a special commissioner to investigate certain phases of English Poor-law The report he produced is among the best of the documents published by that Commission It still repays study, for it contained many carefully-worded descriptions of actual conditions It was not a sheaf of statistics, it was a thing of flesh and blood Documents like these become permanent 'sources' for the research of the next generation His main recommendation (the extension of the provident dispensary conception) did not impress me, but it reflected McVail's strongly 'voluntaristic' attitude

"He had an immense belief in 'voluntaristic' methods of medical administration, and it was his strong bias in this respect that made him enthusiastic over the National Health Insurance Act of 1911 When that Act was passed, he was already 62—that is, within three years of the normal civil service superannuation age, but so keen was he to see the working of the great experiment from within that he asked and obtained the office of Medical Commissioner of the Scottish Insurance Commission I wrote of him then that, though he was 62 years old he had the working brain of 42

"I could give many details of that landslide in the medical world All I need say is that McVail at 62 had his greatest fight before him At first he was acutely disappointed at the medical reception of the Act, but, as years went on, he grew more at ease in his feelings, and from his double experience first in practice, then in administration, he probably helped to prepare the way for the larger developments now emerging in health administration He certainly did a great deal to emphasise the preventive aspects of medicine This was the note of all his public utterances for his ten years of Government service

"Incidentally, when the Scottish Board of Health was formed, McVail became a member of it by transference, and thus a friendly cooperation begun when we were medical officers of health continued between colleagues in the same department of the civil service

"Like all distinguished medical officers of health, McVail had his full share of Parliamentary and Commission work He was a strenuous advocate, and never failed to impress committees and commissions as a man of grasp and sincerity It would take me too long to tell of his work in housing, lecturing, and propaganda It is enough to say that he never became indifferent to new movements He kept touch with the younger generation of medical men

"It was in October, 1925, that I met him for the last time at the annual meeting of the London School of Hygiene It was his seventy-fifth birthday He looked as bright and keen as that evening when I was his guest at THE LANCET centenary dinner But, knowing the truth, I could see in his face little lines that told me their story But he kept in the fighting line as long as physical strength permitted him As late as November last year he took the chair at a meeting of the Epidemiological, and sent me a message to come His mind remained young and active to the end It was a profound gratification to talk with him We always wandered into the larger questions of politics and social evolution, sometimes exchanging much argument on the more subtle questions of philosophy He belonged to a generation of men that included Gairdner, the two Cairds, Kelvin, Lister, Burn Russell, and to all of these, as to McVail, it was part of their religion to look at life as a whole and not to let any section of it draw the mind into mere specialism or the character into mere fanaticism McVail was a big man, and I am glad to have known him for five-and-thirty years"

In 1908 McVail became a Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow and from the University he later received the hon degree of LL D, and his numerous appointments speak of the public esteem in which he was held He was at the time of his death President of the Epidemiological Section of the Royal Society of Medicine. he was an ex-president of the Society of Medical Officers of Health, and was for ten years Crown Member for Scotland upon the General Medical Council, succeeding his brother Sir David McVail In 1906 he was Lane lecturer of the Cooper Medical College San Francisco a foundation which has always attracted from England the famous exponents of our science in every direction In 1919 he delivered the Milroy lectures for the Royal College of Physicians of London taking as his subject "Half a Century of Small-pox and Vaccination"

He was a prominent member of the British Medical Association where he held many offices, and from the Royal Society he received the Jenner Medal In Scotland he acted as an examiner of medical jurisprudence and also in public health at all the four Universities of St Andrews, Edinburgh Glasgow. and Aberdeen, while he was also on the examining body of the Scottish Conjoint Board.

McVail was a clear and fearless writer as he showed nearly 40 years ago in "Vaccination Vindicated" to which reference has already been made He returned to this subject treating vaccination as a branch of preventive medicine in a contribution to Allbutt and Rolleston's "System of Medicine' and a little later wrote for the Transactions of the Epidemiological Society a summary of the work of the Royal Commission on Vaccination with a review of the statement of dissentient statements The results of his work as medical investigator to the Royal Commission on Poor-law made up a large section of that report, while to the Transactions of the Sanitary Institute and in the *British Medical Journal* and THE LANCET he made many important contributions Much of the work which he did for THE LANCET was editorial in nature, and throughout many years we found in McVail a wise counsellor on all questions of public health, especially where public rights and professional privileges appeared to make imperfect contact

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED JULY 24TH, 1926

Notifications—The following cases of infectious disease were notified during the week—Small-pox 91 (last week 157), scarlet fever, 1274, diphtheria, 895, enteric fever, 86, pneumonia 436 puerperal fever, 44 cerebro-spinal fever, 7, acute poliomyelitis, 16. acute polio-encephalitis, 3, encephalitis lethargica, 39, dysentery, 6, ophthalmia neonatorum, 113 There were no cases of cholera, plague, or typhus fever notified during the week.

Deaths—In the aggregate of great towns, including London there were no deaths from small-pox, none from enteric fever, 14 (3) from measles 3 (0) from scarlet fever, 31 (3) from whooping-cough, 25 (10) from diphtheria, 68 (12) from diarrhœa and enteritis under two years of age, and 20 (2) from influenza The figures in parentheses are those for London itself

WORK OF HOSPITAL SATURDAY FUNDS—Birmingham Hospital Saturday Fund is about to enlarge Tyn-y-Coed, the Fund's convalescent home for men at Llanrhos, which claims to have been the first convalescent home of its kind in the world Since 1892 when Tyn-y-Coed was opened, more than 107,000 patients have passed through the Fund's five homes, and there are 252 cases waiting for admission at Llanrhos Last year the Birmingham Hospital Saturday Fund exceeded £62,000, and there is now only one large firm in the city which stands outside it—The Leicester and County Saturday Hospital Society is about to build at a cost of between £25,000 and £30 000, a convalescent home for children at Woodhouse Eaves, on the edge of Charnwood Forest During the 23 years of the society's existence it has raised £156 000 for the Leicester Royal Infirmary and convalescent homes and more than 25,000 patients have received free convalescent treatment

Medical News.

UNIVERSITY OF CAMBRIDGE—At a congregation held on July 29th the following degrees were conferred:—

M D—J Rickman and *F A. Barker
M B and B Ch—J W Hope Simpson, K G Salmon P E. Bardsley R. S Starkey, J D M. Stewart, and D P Marks
M.B—F W Roques
B Ch—*L. G Higgins, T F Fox, G G Holmes, F G Winterton A. W Spence, *B C Tate, V B Wigglesworth, and J H Hannan.

* By proxy

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND—Diplomas of L R C.P and M R C S have been conferred on 177 candidates (138 men and 39 women) who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board and have complied with the by-laws of the Colleges The following are the names and medical schools of the successful candidates —

R M Ainsworth, Liverpool; C E H Anson, King's Coll, J R. Armstrong Edinburgh Cambridge, and St Bart's, H Y Awad, St Thomas's, W Baker, Leeds· B Barling, Univ Coll J T Barr King's Coll. A K. Basilios, Cairo and Birmingham Florence I Beech, Birmingham, W F D Benton St Bart's P Berry, Guy's, W Blood, London, Hilda M. P Bond, St Mary's, Mabel C. Booysen, Charing Cross M D Bower, Oxford and St Thomas's, Ellen W M Bridge, Liverpool and Manchester R C Brock, Guy's R D W Butler, Cambridge and Birmingham, P J L. Capon, St Thomas's, Rose A. Carter, Royal Free *Alison M. Clark, Royal Free and St Mary's, E V Claydon London, A. P L. Cogswell, King's Coll., *A. H F Cole Durham, R. G Cooke, Liverpool, Constance M. Corbett, Westminster F R. Corfe, St Bart's Annie A. Corp, Punjab and Royal Free, J. B Crabtree, St Bart's A. T Curnow, Guy's, P J Curran, National Univ, Ireland and London K J J Cursetji, Bombay and St Bart's, W W Darley, St Bart's, E. A. Darukhanawalla, Bombay and Middlesex, *L Dass, Punjab and Middlesex, J R A Davies, Cambridge and St Bart.'s, Mirabel G Davis, King's Coll. C A. Day, St Bart.'s H I Deitch, Middlesex H A H D'Silva, Madras and King's Coll C W L de Souza, St Bart's, Sheila Dewar, Cambridge and London G Dignam, Manchester Irene Dixon, Charing Cross Jean M. Dollar, Royal Free, M. H C Dyson Univ Coll, J P Evans and R. Evans, Guy's, S N Evans Singapore and Guy's, G L. Feneley, Bristol, C Fernando Ceylon, R. F Fidler, Middlesex, G W S Foster St Bart's, E. O Fox, Cambridge and London Elsa C A Fristedt, Royal Free, R. Gallimore, Cambridge and London R C Germond Lausanne and London, F Goldby King's Coll., B W Goldstone, St Mary's, E. D Y Grasby, Guy's, W P Greenwood, St Bart.'s J L Groom Cambridge and Guy's, R. G Hall, Charing Cross, Kathleen M Halloran, Calcutta and Charing Cross T J Hargest, Cardiff and Middlesex, C. H Harper, St Thomas's S T Harris, Charing Cross, J C Hawksley, Univ Coll, G G Hill, Oxford and London, W S Hinton, St Bart's, A S Hollins Cambridge and King's Coll, M F Hope, King's Coll. W G S Hopkirk and Nancy G Howell, Univ Coll., J H Humphris, Cambridge and St Bart.'s W T Hunt, St Mary's, D H Isaac, Cardiff, Mary R. Isaac, Madras and Royal Free, R. Jarman, Guy's, B S Jarvis, Liverpool B C Jennings Birmingham, Mary Jennings, Royal Free, J D F Johnstone, Cape and Univ Coll, A. N Jones, Liverpool, E D Jones, Cardiff and St Bart's, J P Jones, St Mary's, B Kaplan, Cape and Guy's, Gladys Kay, Royal Free, W A. Kerr, Cape and King's Coll., H Kesselson, Charing Cross, W R. Kirkpatrick, Madras and Guy's, J H. Kitson, Manchester, Olive C Knight, Charing Cross, S C H Lane, Guy's W. Leslie, Cape and Guy's Isabella L H Livingstone, King's Coll., A L St A. McClosky, St Mary's R. G MacGregor, Oxford and St George's R M B Mackenna, Cambridge and St. Thomas's, C W Mackenzie, Oxford and London· E. H. Mackenzie, St Thomas's J H. Marshall, Birmingham; W N Mascall Cambridge and St Thomas's A. J M. Melly, Oxford and St Bart's Bertha L Meyer, Royal Free, Anna P. Montgomery Charing Cross, A. W. J. Morgan, London J Morris, Cambridge and St. Thomas's, Margaret E Morton, Royal Free, L. Moss London· I. Muende, Charing Cross Kathleen A. Muir Cambridge and King's Coll, Dorothy L Neate, Royal Free, E. J Newman, London, Norah M A. Niall, Charing Cross; H P. O'Keeffe, London. M N Oster, Westminster, C L. Owen Cambridge and Univ Coll J G Paley St Bart's; F Parker Cardiff and St Bart's Isabel D Patterson, London, R. A. M Pennington, Liverpool, G H Pereira, St George's D Perkoff, London R. K. Phillips, Bristol, M M. Posel, St Bart's, E. I Puddy, St. Mary's, E. J Pye Smith Cambridge and Guy's, W F H Ray Oxford and Manchester W. D B Pead Oxford and Guy's Violet M. H Rendall St Mary's Doris Reynolds, Royal Free. J R. W Richardson Guy's F T. Ridley, Birmingham Bertine M. Rix, St. Mary's, Phyllis Routledge, Durham E. S Ruduzky, Guy's, S E. Saint, London A. Y M Salama, St Thomas's W Samarasinghe Ceylon and Middlesex, W. E. Savage Manchester H N Seymour-Isaacs St Bart's A Signalewsky, Guy's, R. W A Simmons Oxford and St. Thomas's H Sissons Manchester E. W. Skipper, London, Peggie P Slater, Cardiff and

Westminster, S Smith, St Bart 's, J R C Spicer, Guy's, J B Stauffer, London, K R Stokes, St Bart 's, Stella C. C Stuart, Royal Free, R. D Summers, London, M M Suzman, Durham, B C Tate, Cambridge and Birmingham, E D Thomas, Middlesex, L H Thomas, Oxford and St Thomas's, Mary Thomas, Univ Coll, R Thomason, Birmingham, S R Trick and J M Turner, Guy's, Dorothy I Valentine, Liverpool, Nora A Vane-Percy, Allahabad and Charing Cross, G F Vincent, St Thomas's, J E Wallace, Liverpool, S H D Wallis, Guy's, Kathleen M Ward, Liverpool, R. F Ward, London, T H Wehlburg, St Bart 's, A. G. Welker, Westminster, D F Whitaker, Univ Coll, E G Williams, Leeds, H P Williams, King's Coll, Jane C Williams, St Mary's, Elizabeth E Wintringham, Royal Free and St Mary's, H L C Wood, King's Coll, and R. E Yule, St Thomas's

* M R C S diploma previously conferred

The undermentioned diplomas have also been conferred —

Diploma in Public Health

E G Anthonisz, C M Brown, Lily C Butler, C K Cullen, P. P. Daruvala, E F Duck, E James, J V Landau, Janet M. MacKay, Catherine J Maclaren, R. C Mahajan, J A Struthers, T Tennent, W D R Thompson, Cicely Weatherall, and M J Whelton.

Diploma in Ophthalmic Medicine and Surgery

R A de C Basto, S N Chau, G S Chowdhary, W J L Duncan, K Eweida, S Fraser, D Hardie, S H G Humfrey, R Lang, E H Lim, A M. MacGillivray, A McGlashan, E G Mackie, M S Mahmood, M C Mason, H B Owen, T G W Parry, W L Peacock, T Pearson, H Rai, P R S Rao, G P N Richardson, F W Robertson, Nina L D Robertson, W J Roche, K G W Saunders, H Singh S G Sorabji, T C Taik, H K Tucker, M L Watts, and L E J Werner

Diploma in Psychological Medicine.

G W J MacKay, J R A Madgwick, J T H Madill, A R Martin, L Minski, and A C Sinclair

Diploma in Laryngology and Otology

T A. Clarke, A L Clowes, A O Davy, J D Dhruv, P Garson, W J Macdonald, C S C Prance, M J Quraishi, B T Rao, B D Uberoi, and J R Wheeler,

Royal College of Physicians of London —An ordinary quarterly Comitia of the College was held on July 29th, the President, Sir John Rose Bradford, being in the chair —Dr D R Paterson, Dr G E C Pritchard, and Sir George Buchanan were admitted to the Fellowship The following having passed the required examinations and satisfied the Censors' Board were elected Members, and all but Dr Simpson were admitted —

Janet K Aitken, Julia Bell, Shankar S Bhatnagar, Harold G Bird, Edward R. Boland, William Brockbank, Norman F C Burgess, Vincent M Coates, Daniel T Davies, Durga R. Dhar, Victor W Dix, Helen W Duncan, Chester K Dunstan, Iris M Harmer, Kenneth E Harris, Richard A P Hill, Alfred B Hodgson, John Holmes, John A. Innes, Reginald S Johnson, Edmund B Jones, Alexander H Kirker, Louis Lavine, Terence C Morton, Herbert W Pearson, Edward S Phipson, Cyril J Polson, Dewan H Rai, Thomas P Rees, William A Robb, Hugh A Robertson, John D Rolleston, John W Simpson, Sidney Smith, and George H Wickens

Licences to practise medicine were granted to 176 candidates who had passed the recent examinations and a number of diplomas were granted jointly with the Royal College of Surgeons —A report was received from the examiners for the Murchison Memorial Scholarship, and the scholarship was awarded to Dr C E Newman and *proxime accessit* Dr P. B Wilkinson, both of King's College Hospital.

The following officers were appointed for the ensuing year —

Censors —Dr H Morley Fletcher, Dr Walter Carr, Dr Robert Hutchison, and Dr F J Poynton

Emeritus Treasurer —Sir Dyce Duckworth

Treasurer —Dr Sidney P Phillips

Registrar —Dr Raymond Crawfurd

Harveian Librarian —Dr T H Arnold Chaplin

Assistant Registrar —Dr R O Moon

Members of the Library Committee —Dr F Parkes Weber, Dr H C Cameron, Dr W C Bosanquet, and Dr C J Singer

Curators of the Museum —Dr J Mitchell Bruce, Sir Frederick W Andrewes, Sir Seymour J Sharkey, and Dr William Hunter

Finance Committee —Dr A G Phear, Dr John Fawcett, and Dr J H Thursfield.

Examiners —Chemistry Mr R H A Plimmer and Mr W H Hurtley Physics Mr J H Brinkworth and Mr Sidney Russ Practical Pharmacy Dr Nathan Mutch, Dr Hugh Gainsborough, Dr W J Adie, Dr V J Woolley, and Dr Orlando Inchley Physiology Prof B J Collingwood and Prof Swale Vincent Pathology Sir Frederick Andrewes and Dr Charles Bolton Anatomy Prof. G Elliot Smith Medical Anatomy and Principles and Practice of Medicine Sir Percival Horton Smith Hartley, Dr A. G Phear, Dr W C Bosanquet, Dr C R Box, Dr Herbert S French, Dr J A Nixon, Sir John Charlton Briscoe, Prof F S Langmead, Dr C E Lakin, and Dr J A Torrens Midwifery and Diseases peculiar to Women Dr Cuthbert H J Lockyer, Sir Henry J F Simson, Mr Malcolm Donaldson, F R C S, Dr William Gilliatt, and Dr Stanley Dodd

Examiners in Public Health —Dr J H Ryffel and Dr C Porter

Tropical Medicine —Sir P W Bassett Smith and Sir Leonard Rogers

Ophthalmic Medicine and Surgery —Dr J S Collier

Psychological Medicine —Part I Dr E. D Macnamara Part II Dr R P Smith and Dr C M. Hinds Howell

Laryngology and Otology —Dr D R. Paterson

The President announced that he had appointed Sir William Hale-White to deliver the Harveian Oration in 1927, and that he had awarded the Bisset Hawkins Medal, 1926, to Dr A. T Stanton —A committee was appointed to consider the arrangements that should be made by the College duly to celebrate in 1928 the Tercentenary of the first publication of Harvey's "De Motu Cordis"—A communication was received from the Secretary of the Medical Research Council asking the President to nominate two Fellows to confer with that Council on the question of continuing the issue of *Medical Science Abstracts and Reviews* Lord Dawson and Dr Fawcett were nominated —The President reported to the College communications with the Home Office concerning the barbitone group of drugs —The Registrar reported the following acceptances of appointments Sir Donald MacAlister, as delegate to the Conference of the National Association for the Prevention of Tuberculosis at Glasgow, Dr A. J Hall as delegate at the Celebration of the Coming of Age of the University of Sheffield, Dr H R Spencer as FitzPatrick Lecturer for 1927, Sir J Charlton Briscoe as Lumleian Lecturer for 1927, Dr Charles Bolton as Croonian Lecturer for 1928, Dr F R Fraser as Goulstonian Lecturer for 1927, Dr C G Douglas as Oliver Sharpey Lecturer for 1927, Dr P C Varrier-Jones as Mitchell Lecturer for 1927, Dean Inge as Lloyd Roberts Lecturer for 1926, in place of Prof Arthur Thomson (resigned) The date of the lecture has now been changed to Friday, Nov 19th, at 5 P M —Various reports of committees were received and the report of the Departmental Committee on the University of London was discussed —The President then dissolved the Comitia

Royal College of Surgeons of England —At an ordinary meeting of the Council on July 29th, Sir Berkeley Moynihan, the President, in the chair, the President stated that the vacancy in the Court of Examiners occasioned by the resignation of Mr Herbert S Pendlebury would be filled up at the ordinary meeting of the Council on Dec. 9th Sir Anthony Bowlby, Sir D'Arcy Power, and Mr Sampson Handley were elected members of the Executive Committee of the Imperial Cancer Research Fund The President said that, as arranged with Prof von Eiselsberg, the Lister Memorial Lecture would be delivered at the College on Thursday, July 7th, 1927 He proposed that a reception should be held in the Museum before the lecture, and that the annual election of members of Council should be held on the morning of the same day

Licences in Dental Surgery were conferred upon A. S Akehurst and S C Clouts

Society of Apothecaries of London —At recent examinations the following candidates passed in the undermentioned subjects —

Surgery —A C F Barrow, Edinburgh, A Henkamp, Gottingen and Royal Free Hosp, and R. F Middleton, Birmingham

Medicine.—N H Allen, Guy's Hosp, F W Barton, Middlesex Hosp, T M Beattie, Leeds, W O H Evans, St Mary's Hosp and Bristol, J B Lurie, St Thomas's Hosp, R I Richards, St Bart.'s Hosp, and G E Rowan, St. Thomas's Hosp

Forensic Medicine —C S Forrest, Middlesex Hosp, H S Littlepage, Birmingham, J B Lurie, St Thomas's Hosp, R F Middleton, Birmingham T E Moody Jones, St Bart 's Hosp, A K Rama Chandra, Edinburgh, G E Rowan, St Thomas's Hosp, R. S S Smith, St Bart 's Hosp, and M Stinnesbeck, Freiburg and Royal Free Hosp

Midwifery —A C Banerji, Charing Cross Hosp, H J J Fordham, St Mary's Hosp, D Jacobson, St Bart 's Hosp, V K Samy, Dundee, M T Y Selim, Liverpool, R S S Smith, St Bart 's Hosp, and T de L Walker, King's Coll Hosp

The Diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery. W O H Evans, R F Middleton, and G E Rowan.

London (Royal Free Hospital) School of Medicine for Women —The Council has awarded the following scholarships and bursaries for the session 1926–27 Isabel Thorne Scholarship, H M Brown (Trinity Hall, Southport), St Dunstan's Medical Exhibition, E J Adams Clark (St Paul's Girls' School), Sir Owen Roberts Scholarship, R E Chamings (L S M W), Mabel Sharman Crawford Scholarship, P Farncombe (Godolphin School), Alfred Langton Scholarship, P D Towell (L S M W), Flora Murray Bursary, M M Fenn (L.S M.W), Fanny Butler Scholarship, R B Snow (St Mary's Hospital), and Dr Edith Pechey-Phipson Post-graduate Scholarship, G H Newell, M B, B S

POST-GRADUATE MEDICAL COURSES IN BERLIN —International post-graduate medical courses are to be held in Berlin from Oct 4th to 30th They will be organised jointly under the medical faculty of the Berlin University, the organisation of the Empress Friedrich-House, and the assembly of academical lecturers There will be a course on advances in general medicine with due regard to the latest therapeutics from Oct 4th to 16th , a course in urology from Oct 18th to 30th , and courses in the special departments *of medicine from* Oct 18th to 30th and from Oct. 4th to 30th Further particulars may be had from Kaiserin Friedrich-Haus, Berlin, N W 6, Luisenplatz 2–4

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION —A special course in diseases of children is to be given at the Queen's Hospital from August 16th to 28th Both medical and surgical practice will be dealt with by demonstrations, lectures, and operations Tea and a simple lunch will be provided by the staff, and graduates will have access to all parts of the hospital during the course From August 23rd to Sept 4th the Queen Mary's Hospital, Stratford, will give an all-day course for the benefit of those who wish to renew their acquaintance with hospital practice A new pathological department and maternity wards have recently been opened at this hospital Regular courses in obstetrics are now offered at the City of London Maternity Hospital and practical courses in anæsthetics can be arranged on application to the Fellowship In September special courses will be held in diseases of infants, electro-therapy, ophthalmology, orthopædics, and psychological medicine. There will also be an intensive course in medicine, surgery, and the specialties Copies of all syllabuses, of the general course programme, and of the *Post-Graduate Medical Journal* may be had from the Secretary at 1, Wimpole-street, London, W 1

LONDON POST-GRADUATE HOSTEL.—On July 27th Sir William de Courcy Wheeler took the chair at a meeting of the Hostel at the Imperial Hotel, London, when Prof H. Finsterer (Vienna) opened a discussion on operations of the stomach, in which he advocated gastrectomy for all cases of ulcer. It was not altogether fair, he said, to compare the results of gastro-enterostomy with those of gastrectomy, as the former could often be done successfully by any surgeon, whereas gastrectomy should be performed only by experts In their hands it yielded better results than gastro-enterostomy, but if it were universally practised the mortality would increase greatly In his experience the greater the part of the stomach removed the better the ultimate prognosis, he quoted several cases in which success had only been reached after several partial operations, when almost all the organ had been removed. Sir William Wheeler emphasised the importance of the signs as distinct from the complications of carcinoma, and referred to the diagnostic value of a course of arsenic in deciding between carcinoma and anæmia On July 30th Sir George Lenthal Cheatle opened the discussion on the difference between hyperplasia and inflammation, drawing his conclusion from the study of the breast It was possible he said, to have a cell which was potentially malignant yet held in check by the basement membrane , if such a cell were transplanted, rapid malignant growth ensued. Age was important, and what was inflammatory in a tar-worker of 30 was definitely malignant in a man of 50 So-called chronic mastitis was actually hyperplasia of one of the component parts of the gland or its duct He pleaded for systematic examination of all parts of a breast removed for nodular growth owing to the frequent presence of early carcinoma

Details of the next discussion at the hostel will be found in the Medical Diary given in another column.

MILK AND THE PUBLIC HEALTH.—At the annual meeting of the National Veterinary Association of Great Britain and Ireland, held last week in Dublin, there was a discussion on the relations between the milk-supply and the public health. Mr P F Dolan, Chief Veterinary Inspector of Dublin, said that the immediate complete eradication of tuberculosis from milch cows was impracticable on account of the high percentage of animals affected It was possible that by getting rid of the cow with tuberculosis of the udder and of cases of generalised tuberculosis, and by producing the milk under clean conditions, the amount of tubercle bacilli in it would be reduced to a minimum. Mr A. Gofton, Chief Veterinary Officer for Edinburgh said that milk legislation in Great Britain was too drastic and too drastically enforced The tendency to reduce the available supplies and consequently raise the price would have the effect of driving the poorer classes to buy skimmed milk and substitutes that did not contain what children needed. Milk which was to be pasteurised ought to be of good quality Dr M. J Russell, medical officer of health for Dublin, advocated periodical medical inspection of those who handle milk.

AN Order will be issued by the Ministry of Health making notifiable puerperal pyrexia other than that which is already notifiable as puerperal fever.

LONDON HOSPITAL MEDICAL COLLEGE —The entrance Scholarship in Pathology offered to members of the Universities of Oxford and Cambridge has been awarded to Mr G E Lewis, of Christ's College, Cambridge.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE —Dr R M. Morris has been awarded a Lalcaca Medal in addition to that gained by Dr R Crawford, these two students having obtained an equal percentage of marks in the school examinations of 1926

THE offices of the Panel Committee for the County of London were removed on August 3rd from Staple House, 51–52, Chancery-lane, W C 2. to 17–18, Russell-square, W C 1. Pending the installation of a telephone at the new premises, urgent inquiries may be made to Museum 4464

LISTER CENTENARY CELEBRATION —The centenary year of Lord Lister's birth will be celebrated in Edinburgh in July, 1927, during the meeting of the British Medical Association. The committee responsible for the celebration are anxious to interest students and young graduates in the significance of Lister's work, and they offer a prize of a gold medal and £25 for the best essay on the Influence of Lister on the Evolution of Surgery. Registered students and graduates of not more than one year's standing of any medical school of the British Empire are eligible to submit essays, which must be written in English and must not exceed 10 000 words in length. They should be typed on one side of paper only, and must be sent by May 1st, 1927, to Prof. J Fraser, Convener of the Lister Memorial Committee, 32, Moray-place, Edinburgh. The award of the prize will be made at the Lister Celebration Meeting, July, 1927.

POISONS AND PHARMACY ACTS —As already announced in THE LANCET (July 24th, p 208), a committee has been appointed to consider and report whether any modifications are necessary or desirable in the Poisons and Pharmacy Acts (1) In regard to the conditions relating to the sale of poisons (2) in regard to the procedure for the modification or extension of the Schedule of Poisons to which the Acts apply ; (3) in the system of making and enforcing regulations in regard to the keeping, selling, and dispensing of poisons , (4) in regard to the Central Authority for the purposes of the Acts ; and (5) in regard to any other matters to which the attention of the committee may be drawn. Any person, association. or firm wishing to give evidence or place their views before the committee should communicate as soon as possible with Mr M D Perrins (Joint Secretary), Home Office, Whitehall, S W 1 The committee will inquire generally into the existing machinery regulating the sale (retail and wholesale), keeping, distribution, and supply of poisons any consideration of proposals for the inclusion in or exclusion from the Schedule of Poisons of any specific substance is *not* held to fall within the committee's terms of reference

SOCIETY FOR THE PREVENTION OF VENEREAL DISEASE.—The seventh annual general meeting of this Society was held on July 28th, Dr J H. Sequeira being in the chair. A resolution was unanimously carried urging the Government "*to grant facilities to the* Venereal Disease Act, 1917, Amendment Bill in view of the support that it has received from the British Social Hygiene Council and the Society for the Prevention of Venereal Disease and the medical Members of the House of Commons" The Chairman suggested that the society should adopt as its motto Sir George Newman's statement that "The first duty of medicine is not to cure disease but to prevent it." The attention of the meeting was drawn to the lately published report on the Health of the Army for 1924, which records a remarkable fall in the incidence of venereal disease during the last four years—a fall which the report attributes to the advance made in prevention, diagnosis, and treatment and to vigorous propaganda. Mr. H. Wansey Bayly, the hon secretary, gave a detailed resume of the Society's work during the past year and said that " not only in this country, but throughout the civilised world there are indications that there has developed an appreciation of the danger of neglect of the venereal menace and a recognition that education in immediate self-disinfection is one of the important means of meeting this drain on the health, industry, and purse of nations and individuals" Mr Basil Peto M.P , was elected President of the Society, and said that all the medical Members of Parliament with one exception, and many lay Members of all political parties, had promised their support to a Bill to amend the Venereal Disease Act, 1917, so as to permit the sale by chemists of approved disinfectants, accompanied by approved printed instructions as recommended in the report of Lord Trevethin's Committee of Inquiry Mr Harry Machin the hon. treasurer emphasised the need for public financial support of the Society

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Rural Housing Bill

On Wednesday, July 28th, Mr **Neville Chamberlain**, Minister of Health, presented in the House of Commons a Bill "to promote the provision of housing accommodation for agricultural workers and for persons whose economic condition is substantially the same as that of such workers and the improvement of such accommodation by authorising the giving of financial assistance towards the reconstruction and improvement of houses and other buildings" The Bill was read a first time

Factories Bill

Sir W **Joynson-Hicks**, Home Secretary, presented in the House of Commons on Monday, August 2nd, the Factories No 2 Bill, a measure to consolidate with amendments the enactments relating to factories The Bill was read a first time

Midwives and Maternity Homes Bill

On Monday, August 2nd, Sir **Kingsley Wood** (Parliamentary Secretary to the Ministry of Health) moved that the House doth agree with the new clause inserted in the House of Lords giving power to exempt certain institutions from Part II of the Bill The motion was agreed to Subsequent amendments inserted in the Bill by the House of Lords were also agreed to

Vivisection

On Tuesday, August 3rd, Lieut -Commander **Kenworthy** presented a petition signed by 1109 persons in Barrow-in-Furness, 142 in Bromley, 980 in Chiswick, 646 in Eastbourne, 648 in Nottingham, 251 in Rochester, and 400 in Tunbridge Wells praying that the practice of vivisection be prohibited by law

Lead Paint Poisoning

On Tuesday, August 3rd, the House considered the Lead Paint (Protection against Poisoning) Bill, as amended in Standing Committee The Bill was read a third time

---

HOUSE OF COMMONS

Wednesday, July 28th

Public Health in Scotland

On the report of a vote of £3,680,342 for public education in Scotland,

Mr **Westwood** moved to reduce the vote by £100 He said he wished to raise the question of the feeding of children during the coal mining dispute Several education authorities in Scotland refused to feed the children during the holidays, and it was rather regrettable that in some instances the lead in this matter had been taken by ministers of the Gospel There had been some doubt in the minds of the education authorities as to their power to feed children during the holidays At least one local authority and certain parish councils had asked for the opinion of the Dean of the Faculty of Advocates The Dean had given it as his opinion that not only had the authorities such power, but that it was their duty to feed the children during the holidays He believed that there was an earnest desire on the part of the Secretary for Scotland and the Under Secretary to see that there was no unnecessary suffering to the people during this great industrial struggle, but he appealed to them to see that all the authorities in Scotland did their duty in this connexion

The **Lord Advocate** said that he found himself quite unable to agree with the opinion of the Dean of the Faculty of Advocates as to the obligation or power of the education authority to feed necessitous school-children during the holidays The relief which it was the duty of parish councils to provide in respect of a child might not necessarily be the same as the relief in the shape of meals which an education authority was to provide under the Act of 1908 The education authority's duty arose where they found a child was not in a condition owing to lack of food or clothing to take full advantage of the education course It would be seen at once by those who were familiar with the Poor-law that there might be cases in which there was a duty on the parish council to provide relief in respect of a child, although the child would still be perfectly capable of receiving and taking in proper education, and, therefore, the two cases did not necessarily meet It might be that parish councils had not carried out their duty, and then, of course, the education authorities might have discovered a case of a child arriving at school improperly fed, but neglect of administration did not alter the construction of the Statute Of course, circumstances might arise which would alter cases He would demur from the legal point of view to this habit of education authorities passing general resolutions that they were not going to deal with a certain class of case with regard to school feeding It was the duty of the education authority to deal with each case individually, and not to say that they were going to grant relief in this or that class of case That was a misapprehension of their duty

Dr **Shiels** said the Lord Advocate seemed to indicate that the legal position was that parish councils were responsible for feeding the children, and only in the event of their failing to do so should the education authorities take action While that might be the legal position, he thought they ought to reflect that here were two public bodies each having the power of feeding children of school age Personally, he would much prefer that the education authority should feed such children and that the Poor law should be kept out of it altogether, if possible Where communal feeding in the school was given the actual expense to the ratepayers was much less He trusted that whatever the legal position the education authorities would continue to be empowered to feed children of school age

Sir **John Gilmour**, Secretary for Scotland, said there was nothing to prevent coöperation between the education authorities and the parish councils in this matter, and arrangements could very often be made more economically after consultation so that the actual feeding should take place at the school There ought, however, to be no alteration in the carrying out of the law in the terms in which the Lord Advocate had explained it, and the responsibilities of the parish council ought to be fully accepted

The motion to reduce the vote was negatived and the vote was agreed to

On the report of a vote of £1,858,345 for the salaries and expenses of the Scottish Board of Health, expenses of administration under the National Insurance Acts, &c ,

Mr **Johnston** moved the reduction of the vote by £100 He said that the position of housing in Scotland was rendered doubly unsatisfactory because of the hesitancy of the Government in informing the municipalities exactly what form of subsidy they were likely to have in October next Everything was being held up They required 20,000 houses per annum in Scotland, but they were getting less than 8000 In Dundee 11 3 of the population lived more than three persons to one room There were 4000 houses where the people were living more than three to one room They had 4000 persons living in houses which had been officially scheduled as unfit for human habitation, and they had 1000 families living in a share of a room—two or more families for one room—and the Prime Minister himself, when he visited the city, expressed himself as horrified with the conditions which he saw there The medical officer of health had urged a great development in house building If the Government withdrew the subsidy and threw them back on what was falsely called "an economic rent" that meant according to figures worked out by the sanitary inspector in Dundee that this alleged economic rent would be £1 per week for a working-class house Who was to pay this £1 per week ? The wages of many workers were such that they could not possibly pay such a rent. He suggested as a means of getting cheaper houses in Scotland that the municipalities should be encouraged to set up municipal banks and that they should be allowed to set the unemployed to work making building materials By these means the Secretary for Scotland could double the output of houses in Scotland , but he could not do it by stopping the subsidy If he stopped the subsidy he simply sentenced hundreds of thousands of people to an early death

Mr **James Barr** said that in the report of the Scottish Board of Health reference was made to the Hospital Services (Scotland) Committee presided over by Lord Mackenzie That report revealed a very alarming state of things in regard to public health in Scotland and in regard to the inadequacy of hospital services For example, medically the hospital accommodation was exceedingly inadequate That meant for all requiring hospital treatment the prolonging of their suffering, for some it meant that they were obliged to wait until it was much too late for them to have any chance of recovery, and for many it meant that they died before admission to the hospital could be secured He admitted that much had been done in regard to hospital accommodation In 1841 in Glasgow 17 per 1000 of the population were admitted to hospital, but in 1924 the figure had risen to 44 9 But when they examined the waiting lists at these hospitals as revealed in the report they found that there were often more people on the list than there were beds in the hospital If they took the six teaching hospitals, as they were called, in the four principal cities of Scotland they found that they contained 3250 beds and that there was a waiting list of 5854 It was true that the waiting lists had to be sifted, but there still remained the fact that the Committee calculated that there was need for 3600 new beds in Scotland to meet the urgent demands of sick people There was the greatest dearth of hospitals for incurables There were only eight such institutions with 602 beds

The children's hospitals in Glasgow, Edinburgh, and Aberdeen were also declared by the Committee to be inadequate The Poor-law hospitals were in many cases carried on in buildings that were originally constructed not as hospitals but as workhouses or for the housing of the poor While they had in Glasgow some splendid hospitals conducted by the parish council authorities, on the whole they suffered very greatly in equipment and buildings which were inferior in every way

In the Minority Report of the Poor-law Commission in 1909 it was asserted that two-thirds of the sick poor were being tended in what were really workhouses, although they were called hospitals Another important point was the stigma of the Poor-law which attached to the sick poor He was glad that the report recommended the transfer of the Poor-law hospitals to the general system of hospitals and that the very best treatment should be given to the poorest people The hospitals under the local authorities were confined to certain specific diseases, but the list of diseases had been expanded and now amounted to 37 In regard to certain forms of disease, such as pulmonary tuberculosis, the Committee thought that with the schemes which were in view, as well as those which now existed, there was sufficient accommodation for the present In regard to other forms of disease such as non-pulmonary tuberculosis, the Committee believed that there was great inadequacy and great urgency He believed that the whole responsibility should be thrown upon the local authorities in a new way and the whole system broadened out. As to finance the Committee calculated that to provide 3600 beds a sum of £1,800,000 would be required, of which they recommended that half should be met by a State grant It appeared to him to be pathetic that these hospitals should depend upon appeals of a varied character, on street collections, and on appeals to the gambling instinct He hoped that the Government were looking forward to a much more comprehensive scheme by which the very best treatment would be given to all without distinction. Considering the inadequacy of the medical equipment he thought it was remarkable that so much had been done. They found, for example, that last year's death-rate for Scotland was 13 4, or 1 per cent. less than in 1924 The infantile death-rate was 90 5, a figure which had only been twice reached in Scotland—in 1921 and in 1923 The death-rate for boys and girls under 5 years was down to 12, a figure which he thought had only once before been touched in Scotland. The pulmonary tuberculosis rate was down to 76, which he believed was a record not only for Scotland but for the United Kingdom, and the non-pulmonary rate was down to 34 Social reformers could take great heart, hope, and courage from a long-stretched consideration of the way in which the death-rate had been brought down. In 1855, a normal year in Glasgow, the annual death-rate was 32 per 1000 now it was down to 13 25 The infantile death-rate in 1860 a normal year in Glasgow, was 182, and now it was 101, and for the whole of Scotland it was less than one-half of what it was in 1860 in Glasgow But a great deal remained to be done

It was significant to look at the death-rates of other countries although they had to bear in mind certain considerations such as differences of climate and the like, but he thought that it was far more due to advance in sanitary and medical service The death-rate in Sweden was 11 4 Norway 11 14 Canada 9 8, and in New Zealand 8 29 If they took the infantile death-rate, which stood in Scotland at 90 5, they found that in Sweden it was 56 in Norway 50 66, and in New Zealand 40 23 In Glasgow there was an enormous disparity between one ward and another For example the death-rate in Cathcart was 9 33 and in Mile End 17 93 The infantile death-rate was 27 in Langside 31 in Cathcart, and 137 in Mile End Last year in Mile End it was 162 To further the interest of public health they have to seek to equalise the social conditions in a city and thus they would save a multitude from death. Housing reform would be a most effective means of improving health and diminishing the death-rate According to the report of the Royal Commission on the Housing of the Industrial Classes in Scotland 1917, on the basis of the census of 1911 it was found that the death-rate among boys under 5 years in one-roomed houses was 30 56 in two-roomed houses 30 2, in three-roomed houses 17 9 and in houses of four rooms and upwards 10 27 They were advancing because of a new mental attitude towards disease—a recognition that it was not inevitable, and was not a part of a providential system of the world The Labour party desired to see the whole health service made a public service and the best medical skill available to all persons without distinction. The health of a nation was its greatest asset.

Brigadier-General **CHARTERIS** said that Mr Barr had given statistics of progress in meeting health requirements which were highly satisfactory But it seemed to him that however greatly they might try to meet the requirements of an ever-growing population they would fall short of doing all that was necessary unless they could take some steps to restrict unnecessary immigration from other parts of the kingdom into Scotland. The result was that the available housing accommodation was hard pressed and there was an adverse influence on public health. He hoped that the Secretary for Scotland would give this matter the close attention it deserved

Mr T **KENNEDY** raised the question of the future of health insurance administration in Scotland through the local insurance committees The whole of the public health administration on this side, he said, was in the melting-pot, and they were very near important changes and far-reaching developments. The Royal Commission had made reference in its report to the status, work and future of these committees and definitely recommended that the local committees should cease to function at an early date and that their work should be transferred to some appropriate municipal or county committee That proposal was made on the ground that there was need for a concentration of local health administration. The committees were charged with responsibility for the arrangement of health insurance benefit and for inquiries into complaints by insured persons, and they organised health lectures and health propaganda generally. This part of their work would have been even more extensive if the committees had had more funds at their disposal In view of these facts he thought that they should seriously consider before they agreed to abolish these committees The matter was being considered by the Scottish Office and the Ministry of Health, but no indication had been given of what action the Government proposed to take in regard to it. He would be very sorry to see Scotland dragged at the tail of England in this matter Scotland ought to adopt its own policy as it had done on medical matters relating to insurance administration. He believed that the approved societies were almost universally opposed to this new recommendation. If the unification pleaded for by the Royal Commission was to be applied on grounds of administrative economy, and it could be proved that it would lead to more efficient management, he would not be prepared to oppose rigidly a new departure on that line. But if any departure was to be made it should not merely take the form of abolishing the present insurance committees and vesting their powers and duties in a public committee, but they ought to make the health service a completely public service maintained out of public money

Mr **BUCHANAN** said he wished to raise the question of venereal disease and also the treatment of the blind. He wished to urge on the Scottish Office the need for more rapid expansion in the treatment of venereal disease. He understood that medical attention in Glasgow and Edinburgh, for instance, was not sufficient to give sufferers from that disease the treatment which they ought to get In Glasgow it was not uncommon to have between 30 and 40 cases in a night and persons who were not given attention very often did not apply again He hoped that the Secretary for Scotland would spend a little time and money in equipping these hospitals both from the surgical and medical point of view with nurses and doctors and also appliances for the treatment of the disease In connexion with blind persons he would ask if the Secretary for Scotland could not take action on their behalf According to the annual report of the Scottish Board of Health a consultative committee had been set up representing the various interests—the blind societies the local authorities education, and municipal. How often was that committee called together? He had had complaints that it had not met frequently enough during the past year Another complaint he had was that throughout Scotland, with Dundee as a bright exception, there was a long waiting list of blind persons anxious to receive training which they could not get. He hoped that economy would not be allowed to stand in the way of the welfare of the blind

Dr **SHIELS** said he wished to raise the questions of light treatment for tuberculosis and for child welfare and rickets He would be glad if the Scottish Board of Health would encourage local authorities to go in for the installation of artificial sunlight because in regard to surgical tuberculosis rickets, and general debility the results had been very remarkable He quite agreed with the criticism of the Board that this was not to be regarded as a panacea for all ills, but he thought that its scope would be more and more extended, and that it would ultimately become one of the most useful therapeutic agents With regard to the new milk legislation he would like to ask the Under Secretary what he thought of the nomenclature of the present graded milk sold under license from the Board of Health He had found that a great many people thought that Grade A milk was the best standard of milk whereas it was only the third standard, and it was possible for Grade A milk to be actually tuberculous The Certified milk was the first quality and the Grade A Tuberculin-tested the second quality He suggested that simply to describe the qualities as A, B, and C or something of that kind would be very much simpler for the public With regard to the medical inspection of school-children they had practically 50,000 children who had been certified as being insufficiently nourished and about 1300 who were certified as being very much under nourished That was a condition of affairs in Scotland which was very unsatisfactory and ought to make them ashamed He would also draw attention to the large number of children who were suffering from enlargement of tonsils, especially in connexion with the later chapter in the report in regard to rheumatic fever They knew that tonsils in a bad condition were a frequent cause of rheumatic fever—one of the most disabling of diseases and one which was of great economic importance

Major ELLIOT, Under Secretary to the Scottish Board of Health, replying to the debate, said that the difficulties in regard to housing were still great, but there was no doubt that progress was being made He agreed that the future of the local insurance committees could not be settled by the *obiter dictum* of the Royal Commission and that a strong case would have to be made out before the Government consented to the abolition of the committees With regard to the Hospitals Report he would call attention to the very specific declaration made by his right hon friend in the last debate on this vote to the effect that the Board of Health were taking this matter into their closest scrutiny and hoped in course of time to make considerable developments in the direction of providing an increased number of beds With regard to venereal disease he agreed that the Broomielaw centre in Glasgow was not entirely satisfactory Further building was going on there, however, and they hoped considerably to improve the situation The International Convention with respect to venereal disease had recently been ratified and in future the disease would be dealt with in accordance with the terms of the Convention He thought that he might say on behalf of the Secretary for Scotland and H M Government that the question of the abolition of the housing subsidy was not being considered by the Government at the present time

The motion to reduce the vote was rejected by 315 votes to 129 and the vote was agreed to

Pay of Naval Sick Berth Ratings

Mr HORE-BELISHA asked the First Lord of the Admiralty whether, in view of the Government decision to give effect to the recommendations of the committee appointed to consider questions relating to pay and other matters affecting recruitment of officers and nurses to the medical branches of the fighting services, he would state if the sick berth staff would benefit by these recommendations, seeing that they were a definite part of the nursing section of the Navy —Mr DAVIDSON, Parliamentary Secretary to the Admiralty, replied The terms of reference of the committee did not include consideration of the sick berth ratings and the reply is therefore in the negative

New Sick Berth Staff Quarters at Plymouth

Mr HORE-BELISHA asked the First Lord of the Admiralty when it was proposed that the sick berth staff should occupy their newly built quarters at the Royal Naval Hospital, Plymouth, which were completed over three months ago —Mr DAVIDSON replied The new quarters are expected to be occupied very shortly

Opium in India

Mr SCURR asked the Under Secretary of State for India whether the Government of India proposed to introduce further legislation against opium smoking in clubs and dens —Earl WINTERTON replied This is a provincial subject The Legislative Councils of the Punjab and of the United Provinces have passed Acts prohibiting opium smoking assemblies of three or more persons, and of two or more persons respectively The Government of Assam contemplate introducing similar legislation

Coroners' Courts in India

Mr SCURR asked the Under Secretary of State for India whether it was the intention of the Government of India to establish coroners' courts in the principal cities of India similar to that established in Bombay, and to cease the conducting of inquests by the police authority —Earl WINTERTON replied There is a coroner also in Calcutta In other parts of India an inquest is not necessarily held by a police officer Magistrates of certain classes have power to hold inquests and do hold them. The law is contained in Sections 174 to 176 of the Code of Criminal Procedure, 1898 I know of no proposal to change it

Cancer Research

Colonel DAY asked the Minister of Health the amount of money expended during the last three years, from public funds, in connexion with cancer research work —Mr NEVILLE CHAMBERLAIN replied The expenditure from public funds directly assignable to cancer research during the three years ending March 31st, 1926, amounted to approximately £20,000, in addition to the use of a stock of radium worth £50,000, which is the property of the Government This figure does not include any portion of the salaries of permanent officers of the Ministry of Health who are engaged in this work, nor does it take account of the cost, not readily estimated separately, of the work upon cancer undertaken by the scientific staff of the Medical Research Council at the National Institute for Medical Research The Council's expenditure upon research in the more primary parts of the medical sciences which is as necessary for the solution of the cancer problem as the direct study of the disease itself, has also materially advanced the knowledge of the subject

Feeding of Necessitous School-children

Mr TINKER asked the President of the Board of Education the number of local authorities who had put into operation the feeding of necessitous school-children, how many had commenced since the coal mining dispute started, and how many children were being fed under this scheme at present.—Lord E PERCY replied During the week ended July 17th, 1926, the latest date for which complete returns are available, 157 authorities were exercising their powers to provide meals, and 258,670 children were being fed Forty authorities have started to provide meals since the coal stoppage began

Silicosis Among Miners

Mr WILFRID PALING asked the Secretary for Mines the number of mine workers reported as suffering from silicosis in each of the years from 1915 to 1925 inclusive —Colonel LANE-FOX Silicosis among mine workers is not a disease required to be reported, and detailed information is, therefore, not available, but the number of cases is known to be small, and so far as coal miners are concerned is almost negligible

Office Sanitation

Viscount SANDON asked the Minister of Health whether he had yet arranged for a test case to be tried as to the powers of local authorities with regard to office sanitation, and, if not, if he intended to do so this year —Mr NEVILLE CHAMBERLAIN replied I cannot myself arrange for a test case to be tried, but I hope that it may be found possible through the initiative of local authorities to obtain a decision in the near future

Unknown Disease at Poplar

Viscount SANDON asked the Minister of Health whether he would publish the results as soon as available of the medical investigations into the recent unknown epidemic in Poplar, and whether he would take all possible steps to secure its elucidation —Mr NEVILLE CHAMBERLAIN replied All possible steps have been taken to elucidate the cause of this outbreak Bacteriological investigations are being continued, but so far have yielded no positive result If and when a conclusion has been reached as to the nature of the outbreak I shall be glad to have the information published

Board of Control and Lunacy Certification

Mr R RICHARDSON asked the Minister of Health if he was aware that a communication was recently sent to the Board of Control by a bench of magistrates commenting on the lack of a proper scrutiny exercised by that Board into the grounds upon which persons were committed to asylums, instancing the case of a Mrs Mary de Freville who was committed last month on a doctor's certificate to Gloucester county asylum, placed in a padded cell, and, when examined by the doctor in charge, sent home as perfectly sane, and, in view of the fact that the Board had itself admitted in its report for 1923 that 22 cases committed in the previous year were found to be sane on admission, would he give directions that certification in all these cases should be declared invalid and their names erased from the roll of lunatics, in order to protect them from the detriment attaching to the stigma of lunacy —Mr NEVILLE CHAMBERLAIN replied Mrs de Freville was admitted to the Goucester Mental Hospital on the 9th ultimo on the authority of an order made by a Justice of the Peace Copies of the reception documents were received by the Board of Control on the 14th ultimo with an intimation that the patient had been discharged on the 11th, the medical superintendent being of opinion that she was not then of unsound mind There is no question of any lack of proper scrutiny by the Board, because the patient was, in fact, discharged three days before the documents reached the Board I should, however, state that in the opinion of the Board the facts observed by the certifying doctor at the time of his examination appear to have afforded ample ground for the conclusion that the patient was at the time of unsound mind and in need of care and control With regard to the latter part of the question, it is erroneous to assume because symptoms of insanity are not found on admission that, therefore, these symptoms were not present at the time of certification and that the patient was improperly certified It is not possible to invalidate the certification of the persons referred to in the question. They were sent to mental hospitals under proper legal authority and on discharge their names were removed from the list of certified patients I appreciate however that some amendment of the law may be desirable to facilitate the provisional observation and treatment, without full certification. of doubtful or transitory cases of mental disturbance and this will be considered in connexion with the recommendations of the Royal Commission whose report has just been issued.

Lead Poisoning in the Potteries.

Mr. Rhys Davies asked the Home Secretary the number of persons suffering from lead poisoning in the potteries in 1925 and in the first half of 1926 · how many were men and how many women; and how many of these cases were among workers who should have been covered by the special regulations of 1913 designed to protect them against lead poisoning —Sir W. Joynson-Hicks replied: The number of cases for 1925 was 47, of which 24 were male and 23 female workers For the first half of 1926 there were 28 cases —14 of either sex. All these workers were employed in processes to which the regulations of 1913 apply.

The University of London Bill.

Dr Little asked the Prime Minister if the University of London Bill [Lords] would be taken before the adjournment for the summer recess —Mr. Baldwin replied. I am afraid I see no propsect of making progress with this Bill before the recess

MONDAY, AUGUST 2ND

Women Factory Workers in Bombay

Mr Robert Young asked the Under Secretary of State for India the number of factory women workers in the Bombay presidency whether there were any women factory inspectors · if so how many; and when these were appointed —Earl Winterton replied · The number of women workers in factories was 72 679 in 1924. One lady inspector was appointed in that year

Outcrop Workers and Health Insurance

Mr Wragg asked the Minister of Health whether the men employed on outcrop mining had their health insurance cards regularly stamped.—Sir Kingsley Wood replied: Insurance cards are required to be stamped for men so engaged if they are employed under a contract of service but not otherwise. If my hon. friend will give me particulars of any case which he may have in mind, I will have inquiries made.

Protection of Civilians Against Gas in Warfare.

Mr Ammon asked the Prime Minister whether a gas mask sufficiently reliable to resist the newest discoveries in gases for use in warfare had been invented; and what steps the Government proposed to take to bring such to the attention of the civilian population and to provide instruction in the use of such protective measures —Mr. Baldwin replied: There is every reason to believe that protective measures are keeping abreast of current developments in gas warfare.

Inspection of Foreign Meat Carcasses

Sir Douglas Newton asked the Minister of Health whether he proposed to seek powers to inspect bacon factories and carcasses purchased by them from abroad.—Mr. Neville Chamberlain replied Officers of local authorities already have powers under the Public Health Acts to enter bacon factories and inspect all carcasses found therein. I may add that all carcasses imported into this country are liable to inspection at the port of entry

Lead Poisoning in the Potteries

Mr Rhys Davies asked the Home Secretary whether he was aware that there had been cases recently in the potteries where young girls had suffered from attacks of lead poisoning similar to those which were frequent before the introduction of the 1913 special regulations · whether he could account for these cases and what steps he intended to take to enforce the regulations with a view of stamping out the disease —Sir W. Joynson-Hicks replied I find that during the last 18 months there have been three reported cases of lead poisoning among girls under 21 employed in the potteries All three cases I am glad to say were slight I regret it has not been possible to ascertain definitely how these attacks arose The most careful attention is paid to the enforcement of the regulations but so far as the factory inspector could discover, none of these cases was due to any breach of the regulations or to any defect in the working of the process

TUESDAY AUGUST 3RD

Venereal Disease in the Army

Mr Basil Peto asked the Secretary of State for War whether he would see that in the next report on the health of the Army the figures relating to the incidence of venereal disease were brought up to date and that a report would be included as to the effect of preventive and other measures taken to reduce it —Sir L. Worthington-Evans replied · As regards the first part of the question the statistics relating to diseases in the Army cannot be compiled until the information is received from all Commands, both at home and abroad which in the case of India is not until July of the year following that to which they refer. It is hoped that the report for 1925 will be ready for publication by the end of the current year. As regards the second part of the question reference to page 17 of the report for the year 1924 will show that reference is already made to the effect of preventive and other measures.

Fatal Accidents in the Mining Industry

Lieut -Colonel Heneage asked the Secretary of Mines the number of fatal accidents in the mining industry of Great Britain per 10 000 men for 1922–23 1923–24 and 1924–25 · and if he could obtain similar figures for the Russian mines —Colonel Lane-Fox replied: The number of separate fatal accidents in the mining industry of Great Britain was at the rate of 9 per 10 000 persons employed in 1923. 1924 and 1925 At Russian mines the corresponding numbers were eight in the year ended September, 1924, and ten in the following year. Particulars for 1922–23 are not available.

Miners and Silicosis

Mr Wilfrid Paling asked the Secretary for Mines whether any cases of silicosis had been reported which were alleged to have been caused through operating the stone-dusting regulations applying to coal mines.—Colonel Lane-Fox replied The allegation has occasionally been made, but every case in which it has been made it has proved on investigation not to be silicosis.

Accidents to Pedestrians in London.

Mr Campbell asked the Minister of Transport whether there had been any and, if so, how many, accidents to pedestrians as a result of the roundabout system of traffic in various parts of London.—Sir W. Joynson-Hicks replied: I will circulate a statement of the number of accidents to pedestrians which have occurred so far as known to the police at each of the places where the system has been introduced, but it is impossible to say whether any and, if so how many of these accidents have occurred as the result of the introduction of this system. I am glad to say none of the accidents has been fatal. The statement referred to gives the number of accidents to pedestrians at places where the gyratory system of traffic regulation is in force. The figures given in each case apply from the date of institution of the system to July 27th, 1926, inclusive:—

Place.	Date of institution of gyratory system.	No of accidents
Parliament-square ..	Jan. 4th, 1926	16
Queen Victoria Memorial .	Jan. 25th ,,	4
Hyde Park Corner .	March 22nd ,,	13
Aldwych .	Oct. 12th ,,	8
Trafalgar-square .	April 26th ,,	11
Piccadilly-circus ..	July 26th ,,	—
King-street, Hammersmith	,, 26th ,,	—
		52

Cost of Poor-law Relief

Sir Frederic Wise asked the Chancellor of the Exchequer the total amount paid in Poor-law relief in England and Wales for 1925 and from Jan. 1st to March 31st, 1926, and from April 1st to June 30th 1926 —Sir Kingsley Wood replied Figures for indoor relief during the periods mentioned are not yet available The total amounts of domiciliary Poor-law relief given in money and kind in England and Wales were —

In the year ending	December 1925	£14 550,356
,, quarter	March 1926	£4,123,738
,, ,, ,,	June, 1926 (approx.)	£5,545,000

Lunacy Law Reform

Mr Robert Richardson asked the Minister of Health if his attention had been drawn to the recent decision in the Court of Appeal in the case tried in April last of Harnett v Fisher from which it resulted that if any sane person was wrongfully shut up in an asylum for six years he was debarred from redress and would he at an early date initiate legislation to remove this.—Sir Kingsley Wood replied · My right hon. friend is advised that the deduction which the hon Member draws from the decision of the court in this case is too wide As regards legislation, my right hon. friend can add nothing to the answer given on May 3rd beyond saying that he has under consideration the recent report of the Royal Commission on Lunacy Law and Administration.

Relief to Miners' Wives and Children

Mr Rhys Davies asked the Minister of Health whether he was aware that the Bolton board of guardians had decided to continue their refusal to grant outdoor relief to miners wives and children one of the grounds being that a decision of the board could not be altered for six months after the date of such decision · and whether he would intervene in such a way as to remove this obstacle to a change in the board's policy if they so desired —Sir KINGSLEY WOOD replied Yes, Sir My right hon friend is aware of the decision of the Bolton guardians and that a motion for its rescission which was fully discussed and rejected by 27 votes to 15 on July 14th, was ruled out of order on the ground suggested on July 28th It is not in his power to intervene in the manner suggested, but he has no doubt that if the majority of the board desired to alter the present decision, some way would be found of dealing with any difficulty arising from their standing orders

The Services.

ROYAL NAVAL MEDICAL SERVICE

Surg Comdrs to be Surg Capts : T B Shaw, P L Crosbie, C K Bushe, and T W Myles

Surg Lt -Comdr M B Macleod to be Surg Comdr

Surg Lt W J McB Allan to be Surg Lt -Comdr

ROYAL NAVAL VOLUNTEER RESERVE.

Surg Comdr R Wilbond has been awarded the Royal Naval Volunteer Reserve Officers' Decoration

ROYAL ARMY MEDICAL CORPS

Bt Col W R P Goodwin to be Asst. Dir -Gen

F Widlake to be Temp Lt

The undermentioned retire on retd pay and are granted the rank of Lt.-Col Majs F L Bradish and E J Kavanagh

Maj D T MacCarthy retires on retd pay

Maj T W O Sexton to be Maj whilst empld under Article 507 (*b*), Royal Warrant for Pay and Promotion, 1926

TERRITORIAL ARMY.

Lt G B Tait to be Capt

Capt K V Bailey, late Manch R, to be Lt and relinquishes the rank of Capt.

2nd Lt. H R Paterson, late R F A, to be Lt

Hygiene Companies 2nd Lt D Lamont, late R G A, T F, to be Lt

ROYAL AIR FORCE

J Twohill is granted a short service commission as a Flying Officer for three years on the active list

INDIAN MEDICAL SERVICES

Maj R E U Newman officiates as Assistant Director of Hygiene and Pathology, Western Command, vice Maj J W Houston Maj J G Gill has been appointed Deputy Assistant Director of Hygiene, Central Provinces District, vice Maj G P Taylor, deceased, and Maj C A Wood has been appointed Deputy Assistant Director of Medical Services, Southern Command, vice Maj W E R Williams, vacated Capt R D Davy officiates as Deputy Assistant Director of Medical Services (Embarkation) at Karachi, vice Maj P G M Elvery, Capt S Nag officiates as Specialist in Surgery at Jappulpore, vice Capt D J Batterham, and Maj P M Rennie has been posted as Civil Surgeon, Amraoti Capt E R Daboo has handed over charge of the Jorhat Jail to Maj H L Batra, civil surgeon, Sibsagar Dr K B Dustur on return from leave has resumed his appointment as Medical Officer of Health, Agra Lt.-Col. F P Warwick, civil surgeon, Amraoti, and Dr Y B Ranade, deputy, have been granted leave

Appointments.

DUKE-ELDER, W S, M D St And, F R C S Eng, has been appointed Assistant Ophthalmic Surgeon to St George's Hospital, London

FREW, W. D, M R C S, L R C P Lond, to be one of the Medical Referees under the Workmen's Compensation Act for the Kilmarnock District

SIMPSON, HAROLD C, L M S S A, D P H, Assistant County Medical Officer of Health for Cumberland

Vacancies.

For further information refer to the advertisement columns

Ashton-under-Lyne, District Infirmary —Res Surg O At rate of £200 Also H S At rate of £150

Barnet, Wellhouse Hospital —Asst Res M O £150

Barnsley, Beckett Hospital —Jun H S £140

Bath, Royal Mineral Water Hospital —Res M O £130

Birmingham City Mental Hospitals —Asst M O £350

Brentwood Mental Hospital, Essex —Consulting Surgeon 50 guineas

Bristol University —Asst to Professor of Surgery £400

Cardiff, Welsh National School of Medicine —Lecturer in Pathology £750

Carlisle, Cumberland Infirmary —H P At rate of £155 Also Jun H S At rate of £135

Hastings, Royal East Sussex Hospital —Hon Clin Asst in X Ray Dept

Leicester Isolation Hospital and Sanatorium —Res M.O £350

Manchester, Ancoats Hospital —Res M O £150

Manchester, Crossley Sanatorium, Delamere Forest —Asst M O £200

Manchester Hospital for Consumption, &c —Res M.O £200

Manchester Royal Infirmary —Res Clin Path £100 Also Cardiological Reg £150

Miller General Hospital for South-East London, Greenwich road, S E —Sen Res M O £250

Northampton General Hospital —H P and H S Each at rate of £150

Poplar Metropolitan Borough —M O H £1100

Queen's Hospital for Children, Hackney-road, E —Phy for Skin Dept

Redhill, Surrey, Royal Earlswood Institution —Jun Asst M.O At rate of £250

Royal Chest Hospital, City-road, E C —Res M O At rate of £150

Royal Northern Hospital, Holloway-road, London, N —Cas O At rate of £90

St Luke's Hospital, Cale-street, Chelsea, S W —First Asst M O £420

Salisbury, General Infirmary —H S £150

Sidmouth U D C —Part-time M O H £130

Southampton, Royal South Hants and Southampton Hospital —Jun H S £150

Watford, Herts Peace Memorial Hospital —Res M O At rate of £150

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Bruton (Somerset), Earsdon (Northumberland), Horsham (Sussex), Hollingbourne (Kent), Newport (Isle of Wight), and at Hanley (Staffs)

Births, Marriages, and Deaths.

BIRTHS

ALLISON —On July 27th, at Harlaw, Hope terrace, Edinburgh, the wife of Dr John Allison, Jun, Kettering, of a daughter

WILSON —On July 29th, the wife of Dr H Lydiard Wilson, Gordon-square, of a son

MARRIAGES

BLORE—YOUNG —On July 28th, at the Parish Church, Halesowen, W Roy Blore, M C, M B, B S Lond., to Margaret, daughter of Dr and Mrs Brett Young, of Halesowen, Worcs

GRIPPER—SYMONS —On July 28th, at Salisbury Cathedral, Captain Geoffrey Dawson Gripper, R A M C, to Sylvia Clare, second daughter of the late Colonel F A Symons, C M G, D S O, A M S, and Mrs Symons, of De Vaux Lodge, Salisbury

PLATT—HERON WATSON —On July 28th, at All Souls', Langham place, W, Lieut -Commander Francis Cuthbert Platt, D S O, R N, to Francis Heron-Watson, M B, D P H, elder daughter of Charles Heron-Watson, The Croft, Longforgan, Perthshire

TOOP—TRESILIAN —On July 27th, at St Andrew's Church, Enfield, Bernard Miall Toop, M.R C S, L R C P, to Nora Mabel, younger daughter of the late F J Tresilian, M D, F R C P, and Mrs Tresilian, of White Lodge, Enfield

WALLACE—COUTTS —On July 31st, at St Peter's Church, Norbiton, Herbert Kelvin Wallace, M R C S, L R C P L D S, to Marjorie, elder daughter of Dr Francis J H Coutts, C B, and Mrs Coutts, of Kingston Hill

DEATHS

HUNT —On July 26th, suddenly, Lieut -Colonel Rochford Noel Hunt, D S O, R A M C, of Belgrave road, Eccleston square, S W, aged 53

McVAIL.—On July 29th, at Nethway, Torquay, John Christie McVail, LL D, M D, D P H, in his 77th year

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages and Deaths

Medical Diary.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street W

MONDAY, August 9th, to SATURDAY, August 12th —WEST END HOSPITAL FOR NERVOUS DISEASES, 73, Welbeck street, W Last week of the Special course of clinical demonstrations upon selected cases given at 5 P M as follows Mon, Dr Hildred Carlill Hysteria Tues, Dr Hildred Carlill Lesions of the Cranial Nerves Wed, Mr Cecil Wakeley. Cerebral Surgery Thurs, Dr Worster-Drought Certain Points in Neurological Diagnosis

POST-GRADUATE HOSTEL, Imperial Hotel, Russell square, W C

THURSDAY, August 12th —9 P M, The Silhouette Radiogram in the Interpretation of Clinical Signs by Mr A P Bertwistle

Montgomery Lecture

ON THE

CLINICAL USE OF THE SLIT-LAMP.*

Delivered at Trinity College, Dublin,

BY T HARRISON BUTLER, M D OXF,
SURGEON, BIRMINGHAM EYE HOSPITAL, HON OPHTHALMIC SURGEON, COVENTRY AND LEAMINGTON GENERAL HOSPITALS

IT is fitting that I allude to the founder of this lecture Dr Montgomery was a member of the staff of the Royal Victoria Eye and Ear Hospital A man of quiet, unassuming demeanour, he was wholly devoted to his work By his legacy he conferred a lasting benefit upon ophthalmology, and we may feel certain that the slit-lamp would have given him the greatest pleasure

ADVANTAGES OF THE INSTRUMENT.

The introduction of the ophthalmoscope heralded the opening of a new era in ophthalmology, fruitful in discovery regarding the anatomy and pathology of the eye Still something was wanting The ophthalmoscope deals with two dimensions in space, and the older methods of focal illumination were inadequate to supply the third dimension, our measurements of depth, our localisation along the axis of the eye, were at best good guessing In 1912 Gullstrand invented the first slit-lamp and incidentally supplied the third dimension The original slit-lamp was improved and associated with the corneal microscope by Henker Vogt added the adjustable slit which gave the "optical section" The slit-lamp and corneal microscope, as made by Zeiss, allow us to localise along the optical axis of the eye, without the use of any academic methods, within a limit of 1/5th of a millimetre The Czapski-Zeiss microscope is provided with Ulbrich's micrometer drum, divided into tenths of a millimetre, and measures the travel of the instrument from one focus to another. With this we can gauge the depth of the anterior chamber or the thickness of the lens with fair accuracy The micrometer eye-piece allows us to make transverse measurements, and when it is used with a goniometer, which registers the angle between the visual and illuminating axes, accurate estimations of depth can be made This method is somewhat academic and is unnecessary for routine clinical work The chief advantage gained by the slit-lamp is the optical section, one that we cannot overvalue; but there are others An ordinary loupe magnifies about six times, the corneal microscope offers a stereoscopic view of the eye as far back as the anterior third of the vitreous, giving a magnification of 35 With an exceptionally steady patient we can fit a higher eye-piece and obtain 60 diameters Personally, I think 35 quite sufficient, and I find that I obtain no advantage by using a strong eye-piece Magnification by high-powered oculars is a cheap and nasty way of failing to attain the desired result As Koeppe[1] says, "the resolution of the finer details of the observed tissue is essentially a function of the numerical aperture of the objective employed, and independent of the ocular magnification"

The beam of the Zeiss slit-lamp is under the most perfect control It can be freely moved independently of the microscope up, down, right, left, and focused upon any desired spot This allows us to use varieties of illumination and to change them automatically as occasion may dictate By throwing the beam of light slightly out of focus we obtain a diffuse illumination which is often of value The beam may be brought to an exact focus upon any given structure and gives direct focal illumination We can focus it upon a reflecting surface behind the object under review and use transillumination or retro-illumination. Thus we examine the cornea by light reflected from the iris in lens-light We can illuminate the cornea by a pencil of light reflected from the posterior lens capsule and make out fine changes which are difficult to detect by other means (These methods are illustrated in Fig 1) It is often useful to take advantage of mirror light to work in the zone of specular reflection Instead of avoiding the mirror of the light from the cornea or lens capsules, we deliberately use these dazzling zones, and are able to see on the anterior corneal surface deposits of fine drops and fine irregularities, on the posterior surface the endothelial cells, on the anterior lens capsule the shagreen and the epithelial cells, and finally the posterior shagreen We can easily understand the advantages of the specular zone if we take an ophthalmoscope case and hold it in relation to a bright light in such wise that we get the direct reflection of the light back to our eye We notice at once how the details of the shagreen of the leather spring into prominence In some cases the reflection from a surface such as the iris is so intense that detail is lost By focusing the light somewhat laterally we see our object by scattered light, by indirect lateral illumination This form of lighting is specially used to see the sphincter of the iris

FIG 1

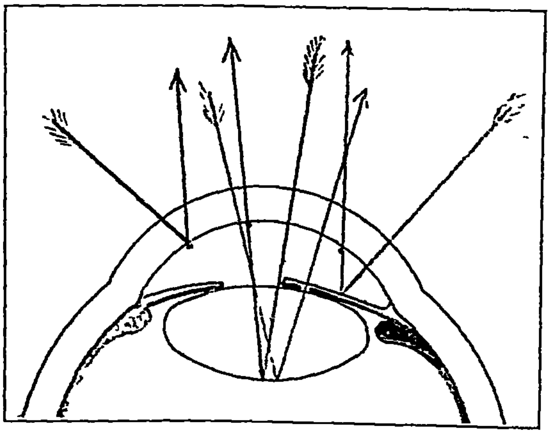


Diagram illustrating direct focal illumination of an object on the back of the cornea, retro illumination of a similar object from the iris and from the posterior capsule of the lens, and retro illumination of a hole in the retinal layer of the iris by lens light

Another method of illumination has been called scleral scatter by Graves If we bring the beam to a focus upon the limbus we at once notice a glow all round the cornea, brightest directly opposite the spot of light The light is reflected backwards and forwards between the anterior and posterior surfaces of the cornea till it reaches the sclera, and in its passage it illuminates the corneal substance; the structure becomes relucent, to use another apt word coined by Graves A tenuous opacity in the cornea may be seen against the internal glow when it is almost invisible by other forms of illumination

The last available method is illumination by fundus light Light directed against the sclera penetrates and is reflected back from the fundus Fissures in the retinal layer of the iris glow blood-red in fundus light It is obvious that to take full advantage of these methods which are used instinctively and alternately by the expert, the lamp-arm must move absolutely independently of the microscope If, for example, we are examining keratic precipitates (K P.) we light them alternately by direct focal and retro-illumination Some objects, such as the fine filaments which cross the retrolental space, uniting the lens to the vitreous, can be seen only by oscillatory light.

---

* Owing to lack of space it is impossible to publish more than a selection of the drawings which illustrated this lecture In consequence the subject matter has been somewhat abridged and modified

[1] American Journal of Ophthalmology, ix., 158.

intervene in such a way as to remove this obstacle to a change in the board's policy if they so desired —Sir KINGSLEY WOOD replied Yes, Sir My right hon friend is aware of the decision of the Bolton guardians and that a motion for its rescission which was fully discussed and rejected by 27 votes to 15 on July 14th, was ruled out of order on the ground suggested on July 28th It is not in his power to intervene in the manner suggested, but he has no doubt that if the majority of the board desired to alter the present decision, some way would be found of dealing with any difficulty arising from their standing orders

The Services.

ROYAL NAVAL MEDICAL SERVICE

Surg Comdrs to be Surg Capts T B Shaw, P L. Crosbie, C K Bushe, and T W Myles

Surg Lt-Comdr M B Macleod to be Surg Comdr

Surg Lt W J McB Allan to be Surg Lt-Comdr

ROYAL NAVAL VOLUNTEER RESERVE

Surg Comdr R Wilbond has been awarded the Royal Naval Volunteer Reserve Officers' Decoration

ROYAL ARMY MEDICAL CORPS

Bt Col W R P Goodwin to be Asst. Dir-Gen

F Widlake to be Temp Lt

The undermentioned retire on retd pay and are granted the rank of Lt-Col Majs F L Bradish and E J Kavanagh

Maj D T MacCarthy retires on retd pay

Maj T W O Sexton to be Maj whilst empld under Article 507 (*b*), Royal Warrant for Pay and Promotion, 1926.

TERRITORIAL ARMY.

Lt G B Tait to be Capt

Capt K V Bailey, late Manch R, to be Lt. and relinquishes the rank of Capt.

2nd Lt H R Paterson, late R F A, to be Lt

Hygiene Companies 2nd Lt D Lamont, late R G A, T F, to be Lt

ROYAL AIR FORCE

J Twohill is granted a short service commission as a Flying Officer for three years on the active list

INDIAN MEDICAL SERVICES

Maj R E U Newman officiates as Assistant Director of Hygiene and Pathology, Western Command, vice Maj J W Houston Maj J G Gill has been appointed Deputy Assistant Director of Hygiene, Central Provinces District, vice Maj G P Taylor, deceased, and Maj C A Wood has been appointed Deputy Assistant Director of Medical Services, Southern Command, vice Maj W E R Williams, vacated Capt R D Davy officiates as Deputy Assistant Director of Medical Services (Embarkation) at Karachi, vice Maj P G M Elvery, Capt S Nag officiates as Specialist in Surgery at Jappulpore, vice Capt D J Batterham, and Maj P M Rennie has been posted as Civil Surgeon, Amraoti Capt E R Daboo has handed over charge of the Jorhat Jail to Maj H L Batra, civil surgeon, Sibsagar Dr K B Dustur on return from leave has resumed his appointment as Medical Officer of Health, Agra Lt-Col F P Warwick, civil surgeon, Amraoti, and Dr Y. B Ranade, deputy, have been granted leave

Appointments.

DUKE-ELDER, W S, M D St And, F R C S Eng, has been appointed Assistant Ophthalmic Surgeon to St George's Hospital, London

FREW, W D, M R C S, L R C P Lond, to be one of the Medical Referees under the Workmen's Compensation Act for the Kilmarnock District

SIMPSON, HAROLD C, L M S S A, D P H, Assistant County Medical Officer of Health for Cumberland

Vacancies.

For further information refer to the advertisement columns

Ashton-under-Lyne, District Infirmary —Res Surg O At rate of £200 Also H S At rate of £150

Barnet, Wellhouse Hospital —Asst Res M O £150

Barnsley, Beckett Hospital —Jun H S £140

Bath, Royal Mineral Water Hospital —Res M O £130

Birmingham City Mental Hospitals —Asst M O £350

Brentwood Mental Hospital, Essex —Consulting Surgeon 50 guineas

Bristol University —Asst to Professor of Surgery £400

Cardiff, Welsh National School of Medicine —Lecturer in Pathology £750

Carlisle, Cumberland Infirmary —H P At rate of £155 Also Jun H S At rate of £135

Hastings, Royal East Sussex Hospital —Hon Clin Asst in X Ray Dept

Leicester Isolation Hospital and Sanatorium —Res M.O £350

Manchester, Ancoats Hospital —Res M O £150

Manchester, Crossley Sanatorium, Delamere Forest —Asst M.O £200

Manchester Hospital for Consumption, &c —Res M O £200

Manchester Royal Infirmary —Res Clin Path £100 Also Cardiological Reg £150

Miller General Hospital for South-East London, Greenwich road, S E —Sen Res M O £250

Northampton General Hospital —H P and H S Each at rate of £150

Poplar Metropolitan Borough —M O H £1100

Queen's Hospital for Children, Hackney road, E —Phy for Skin Dept

Redhill, Surrey, Royal Earlswood Institution —Jun Asst M.O At rate of £250

Royal Chest Hospital, City-road, E C —Res M O At rate of £150

Royal Northern Hospital, Holloway road, London, N —Cas O At rate of £90

St Luke's Hospital, Cale-street, Chelsea, S W —First Asst M.O £420

Salisbury, General Infirmary —H S £150

Sidmouth U D C —Part time M O H £130

Southampton, Royal South Hants and Southampton Hospital —Jun H S £150

Watford, Herts Peace Memorial Hospital —Res M.O At rate of £150

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Bruton (Somerset), Earsdon (Northumberland), Horsham (Sussex), Hollingbourne (Kent), Newport (Isle of Wight), and at Hanley (Staffs)

Births, Marriages, and Deaths.

BIRTHS

ALLISON —On July 27th, at Harlaw, Hope terrace, Edinburgh, the wife of Dr John Allison, Jun, Kettering, of a daughter

WILSON —On July 29th, the wife of Dr H Lydiard Wilson, Gordon-square, of a son

MARRIAGES

BLORE—YOUNG —On July 28th, at the Parish Church, Halesowen, W Roy Blore, M C, M B, B S Lond., to Margaret, daughter of Dr and Mrs Brett Young, of Halesowen, Worcs

GRIPPER—SYMONS —On July 28th, at Salisbury Cathedral, Captain Geoffrey Dawson Gripper, R A M C, to Sylvia Clare, second daughter of the late Colonel F A. Symons, C M G, D S O, A M S, and Mrs Symons, of De Vaux Lodge, Salisbury

PLATT—HERON WATSON —On July 28th, at All Souls', Langham place, W, Lieut Commander Francis Cuthbert Platt D S O, R N, to Francis Heron Watson, M B, D P H, elder daughter of Charles Heron-Watson, The Croft, Longforgan, Perthshire

TOOP—TRESILIAN —On July 27th, at St Andrew's Church, Enfield, Bernard Miall Toop, M R C S, L R C P, to Nora Mabel, younger daughter of the late F J Tresilian, M D, F R C P, and Mrs Tresilian, of White Lodge, Enfield

WALLACE—COUTTS —On July 31st, at St Peter's Church, Norbiton, Herbert Kelvin Wallace, M R C S., L R C P L D S, to Marjorie, elder daughter of Dr Francis J H Coutts, C B, and Mrs Coutts, of Kingston Hill

DEATHS

HUNT —On July 26th, suddenly, Lieut Colonel Rochford Noel Hunt, D S O, R A M C, of Belgrave road, Eccleston square, S W aged 53

McVAIL.—On July 29th, at Nethway, Torquay, John Christie McVail, LL D, M D, D P H, in his 77th year

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages and Deaths

Medical Diary.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street W

MONDAY, August 9th, to SATURDAY, August 12th —WEST END HOSPITAL FOR NERVOUS DISEASES, 73, Welbeck street, W Last week of the Special course of clinical demonstrations upon selected cases given at 5 P M as follows Mon Dr Hildred Carlill Hysteria Tues, Dr Hildred Carlill *Lesions of the Cranial Nerves* Wed, Mr Cecil Wakeley Cerebral Surgery Thurs, Dr Worster Drought Certain Points in Neurological *Diagnosis*

POST GRADUATE HOSTEL, Imperial Hotel, *Russell square*, W C

THURSDAY, August 12th —9 P M, The Silhouette Radiogram in the Interpretation of Clinical Signs by Mr A P Bertwistle

Montgomery Lecture

ON THE

CLINICAL USE OF THE SLIT-LAMP *

Delivered at Trinity College, Dublin,

By T HARRISON BUTLER, M.D. Oxf ,

SURGEON, BIRMINGHAM EYE HOSPITAL, HON OPHTHALMIC SURGEON, COVENTRY AND LEAMINGTON GENERAL HOSPITALS

It is fitting that I allude to the founder of this lecture Dr Montgomery was a member of the staff of the Royal Victoria Eye and Ear Hospital A man of quiet, unassuming demeanour, he was wholly devoted to his work By his legacy he conferred a lasting benefit upon ophthalmology, and we may feel certain that the slit-lamp would have given him the greatest pleasure

Advantages of the Instrument.

The introduction of the ophthalmoscope heralded the opening of a new era in ophthalmology, fruitful in discovery regarding the anatomy and pathology of the eye Still something was wanting The ophthalmoscope deals with two dimensions in space and the older methods of focal illumination were inadequate to supply the third dimension, our measurements of depth, our localisation along the axis of the eye, were at best good guessing In 1912 Gullstrand invented the first slit-lamp and incidentally supplied the third dimension The original slit-lamp was improved and associated with the corneal microscope by Henker Vogt added the adjustable slit which gave the "optical section" The slit-lamp and corneal microscope, as made by Zeiss, allow us to localise along the optical axis of the eye, without the use of any academic methods, within a limit of 1/5th of a millimetre The Czapski-Zeiss microscope is provided with Ulbrich's micrometer drum, divided into tenths of a millimetre, and measures the travel of the instrument from one focus to another With this we can gauge the depth of the anterior chamber or the thickness of the lens with fair accuracy The micrometer eye-piece allows us to make transverse measurements, and when it is used with a goniometer, which registers the angle between the visual and illuminating axes, accurate estimations of depth can be made This method is somewhat academic and is unnecessary for routine clinical work. The chief advantage gained by the slit-lamp is the optical section, one that we cannot overvalue, but there are others An ordinary loupe magnifies about six times, the corneal microscope offers a stereoscopic view of the eye as far back as the anterior third of the vitreous, giving a magnification of 35 With an exceptionally steady patient we can fit a higher eye-piece and obtain 60 diameters Personally, I think 35 quite sufficient, and I find that I obtain no advantage by using a strong eye-piece Magnification by high-powered oculars is a cheap and nasty way of failing to attain the desired result As Koeppe[1] says, "the resolution of the finer details of the observed tissue is essentially a function of the numerical aperture of the objective employed, and independent of the ocular magnification"

The beam of the Zeiss slit-lamp is under the most perfect control It can be freely moved independently of the microscope up, down, right, left, and focused upon any desired spot This allows us to use varieties of illumination and to change them automatically as occasion may dictate By throwing the beam of light slightly out of focus we obtain a diffuse illumination which is often of value The beam may be brought to an exact focus upon any given structure and gives direct focal illumination We can focus it upon a reflecting surface behind the object under review and use transillumination or retro-illumination. Thus we examine the cornea by light reflected from the iris in lens-light We can illuminate the cornea by a pencil of light reflected from the posterior lens capsule and make out fine changes which are difficult to detect by other means (These methods are illustrated in Fig 1) It is often useful to take advantage of mirror light to work in the zone of specular reflection Instead of avoiding the mirror of the light from the cornea or lens capsules, we deliberately use these dazzling zones, and are able to see on the anterior corneal surface deposits of fine drops and fine irregularities, on the posterior surface the endothelial cells, on the anterior lens capsule the shagreen and the epithelial cells, and finally the posterior shagreen We can easily understand the advantages of the specular zone if we take an ophthalmoscope case and hold it in relation to a bright light in such wise that we get the direct reflection of the light back to our eye We notice at once how the details of the shagreen of the leather spring into prominence In some cases the reflection from a surface such as the iris is so intense that detail is lost By focusing the light somewhat laterally we see our object by scattered light, by indirect lateral illumination This form of lighting is specially used to see the sphincter of the iris

Fig 1.

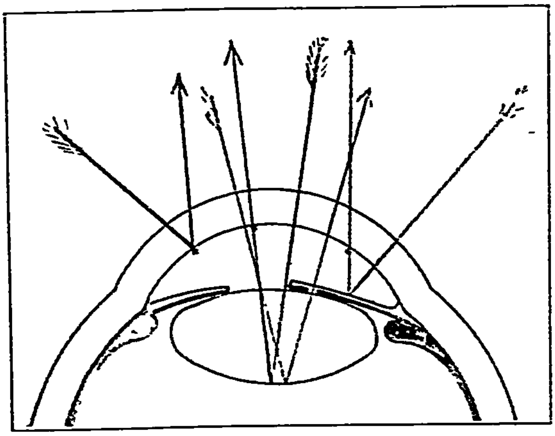


Diagram illustrating direct focal illumination of an object on the back of the cornea, retro-illumination of a similar object from the iris and from the posterior capsule of the lens and retro illumination of a hole in the retinal layer of the iris by lens light

Another method of illumination has been called scleral scatter by Graves If we bring the beam to a focus upon the limbus we at once notice a glow all round the cornea, brightest directly opposite the spot of light The light is reflected backwards and forwards between the anterior and posterior surfaces of the cornea till it reaches the sclera, and in its passage it illuminates the corneal substance; the structure becomes relucent, to use another apt word coined by Graves. A tenuous opacity in the cornea may be seen against the internal glow when it is almost invisible by other forms of illumination

The last available method is illumination by fundus light Light directed against the sclera penetrates and is reflected back from the fundus Fissures in the retinal layer of the iris glow blood-red in fundus light. It is obvious that to take full advantage of these methods which are used instinctively and alternately by the expert, the lamp-arm must move absolutely independently of the microscope If, for example, we are examining keratic precipitates (K.P.) we light them alternately by direct focal and retro-illumination Some objects, such as the fine filaments which cross the retrolental space, uniting the lens to the vitreous, can be seen only by oscillatory light.

---

* Owing to lack of space it is impossible to publish more than a selection of the drawings which illustrated this lecture In consequence the subject matter has been somewhat abridged and modified

[1] American Journal of Ophthalmology, ix , 158.

THE APPARATUS RECOMMENDED.

I advise the use of the Zeiss slit-lamp. It is unwise to have anything to do with the combined slit-lamp and Gullstrand ophthalmoscope. The best lenses to get are paired objectives A 0: A 2: and A 3, ocular 2, and a micrometer ocular. I recommend the objective A 0 instead of F 55. The latter magnifies only nine times, and I regard it as a pretty toy. A 0 is a useful lens, magnifying 15 times. It serves most purposes and is easy to use. It is not powerful enough to see the endothelium in detail or to observe small particles in the aqueous. A 0 has been little used as yet, but I have recently obtained one and I find that I am employing it more than any other. I greatly prefer the glass-top table to the double slides for moving the microscope. This mechanical stage is easier to use, but is a handicap to the expert. Using A 0 and the glass top it is possible to focus the microscope by sliding it on the glass: it can be instantly slewed at will, and the movements of the patient can be followed automatically, for we hold the microscope by the screw which raises and lowers it and so we have complete control with one hand. This is not possible with the mechanical stage.

THE EXAMINATION BY SLIT-LAMP.

A slit-lamp examination falls under two heads, with the broad beam and with the narrow beam.

When a ray of light passes through media in the eye which are not optically homogeneous but composed of lamellæ, some of the light is internally reflected and dispersed, and the medium glows: it becomes relucent. Optically homogeneous media remain dark. Thus the cornea, the lens, and the vitreous become relucent, whereas the epithelial layer of the cornea, the aqueous, and the retrolental space, remain almost dark. I say almost, for an optically inactive medium does not exist in the eye. The appearance when the narrow beam is thrown into the eye is seen in Fig. 2. To the left we see a scimitar-like crescent of light, the section of the relucent cornea. The adjacent dark area is the anterior chamber. The lens is on the right and shows areas of optical discontinuity. To the extreme right we may note the faint glow of the vitreous. Careful focusing will allow us to make out the architecture of the vitreous, which in section shows as a series of sinuous waving bright lines, the edges of the membranes which compose the organised part of the vitreous. In most slit-lamp drawings the whole structure is shown in sharp focus, but in reality this is not the case. This figure shows the optical section of the eye, the organ is seen in profile: we have gained our third dimension.

In Fig. 3 we see the effect of throwing the broad beam into the eye. A block of light is seen in the area of the cornea, the *prisma* in German. Although it is not a geometrical prism, it is convenient to use the word prism to describe this relucent block. The cortical layer of the lens forms a second prism. The lens prism is not so sharp as the corneal and the posterior surface is more strongly curved than the anterior. It is very important to differentiate this prism, because its posterior surface is the face of the adult nucleus, a landmark in the lental landscape. Behind the prism we generally see the posterior inverted Y, another prominent landmark marking the posterior surface of the embryonic nucleus of the lens. The anterior erect Y is generally very difficult to detect.

We can now pass on to a more detailed study of the eye as seen with the slit-lamp, taking the structures in anatomical sequence.

THE CORNEA.

The corneal prism is shown in Fig. 4. The surface to the left is the epithelial surface of the cornea, the darker surface to the right marks the margin of the beam of light—we call it the proximal section. There is a distal section, but this is invisible. Looking through the prism we focus upon the endothelial surface of the prism. This reflects light faintly, and in the young normal cornea is not obvious. In the aged, and after interstitial keratitis the endothelial surface reflects light strongly and stands out clearly as a somewhat opaque granular surface. It is possible to see the epithelial layer of the cornea; if we over-run our lamp, using a voltage of 10 instead of the usual 8, and focus sharply upon the extreme distal edge of the epithelial surface of the prism we see a clear layer—this is the optically inactive epithelial layer of the cornea.

Reverting to the normal prism as shown in Fig 4 we note that the stroma is granular in appearance. In the outer two-thirds of the prism the corneal nerves are seen. At the periphery they are thick and medullated, but as they enter the transparent cornea they lose their medulla, and look like threads of cotton. They divide dichotomously and occasionally show a web-like formation in the angle between two twigs. We see no trace of Bowman's tubules or of Recklinghausen's canals. Leber has shown that these structures are artefacts. Koeppe, using magnifications of 60 and 80, has described an elaborate system of lymph passages, but his observations have not received confirmation.

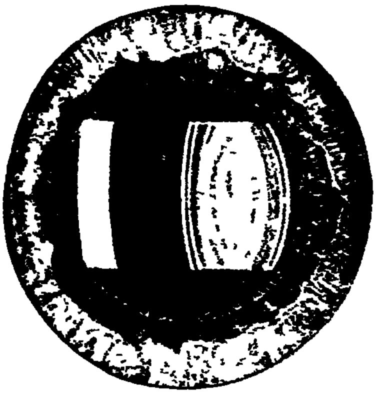
If we examine the endothelial surface of the cornea in the zone of specular reflection we see a yellow shagreen area, which on careful focusing resolves itself into a mosaic of hexagonal cells, the endothelial layer of the cornea. Among the cells there are dark crater-like formations. These may in part correspond to the Hassal-Henle warts, thickenings of Descemet's membrane. In the pig's eye the endothelial cells are very large and their nuclei are seen as dark dots in the centre of the cell. In man the nuclei are held to be invisible, but we recently examined a miner and found that his endothelial cells were abnormally large, and we were able to see the nuclei distinctly. Bowman's and Descemet's membranes are unseen till they fall into folds. Such are very common in Descemet's membrane, and form after operations and accidents which perforate the cornea, and in corneal inflammation and oedema. They are seen in great profusion in interstitial keratitis. The folds may take various forms. After a central keratitis the wrinkles in both Bowman's and Descemet's membrane—fine in the former, coarse in the latter—radiate star-like from the centre towards the periphery of the cornea. Those seen after operations spread from the scar and have a double contour with silvery edges. They rapidly disappear as the healing of the wound progresses.

Ulceration of the cornea can be minutely examined with the slit-lamp. When the beam is thrown on to the ulcer we note a deep notch in the prism, and by moving the beam over the surface of the ulcer we obtain a series of contour lines which supply a complete map of the configuration of the ulcer. We can follow the process of healing and the onset of vascularisation in all its details.

Bullous Keratitis.—In this condition the detachment of the epithelium can be viewed in section, and when the cornea is superficially vascularised we can locate the pannus just under the epithelium.

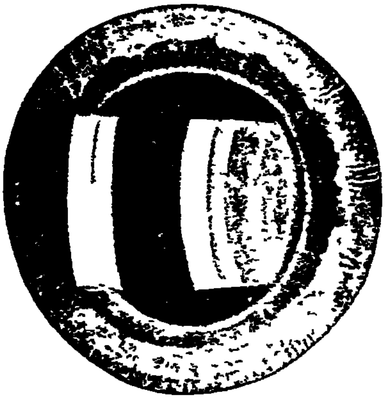
The Visible Circulation.—If one of the smaller vessels in a pannus or a deep vascularisation be examined by retro-illumination so that the vessel is seen by transmitted light, using the iris as a mirror, the actual circulation of the blood is clearly perceived. Globules are observed coursing along the capillaries. In the very smallest the flow is intermittent as described by Krogh. In others the corpuscles are at intervals propelled along the vessels like shots from a machine-gun. In a small twig joining two larger trunks the flow may be rhythmically reversed. It is most fascinating to watch the phenomena of the circulation with the corneal microscope under the illumination of the slit-lamp. It is probable that the globules we see are the actual corpuscles. In a favourable case the blood stream can be seen with an ordinary loupe with the illumination of a [illegible] lamp.

FIG. 2



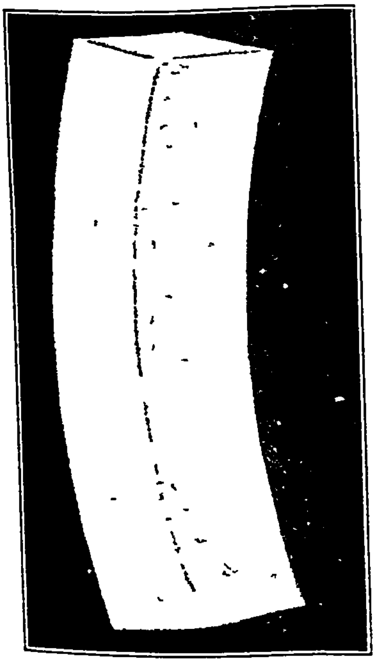
Illumination of the eye by the narrow beam

FIG 3



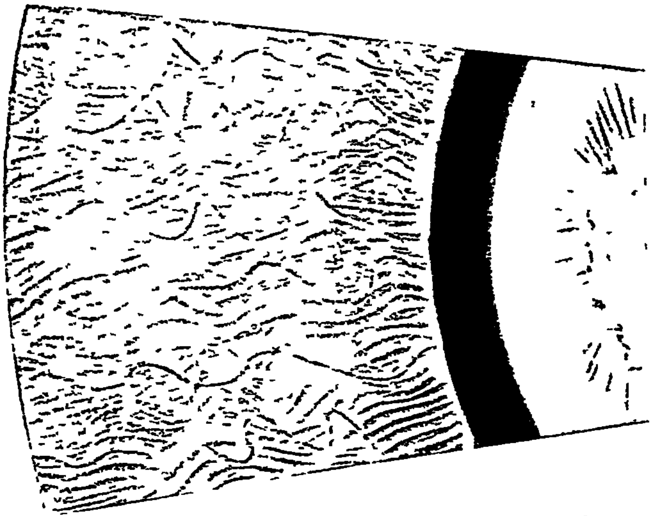
Illumination of the eye by the broad beam.

FIG. 4.



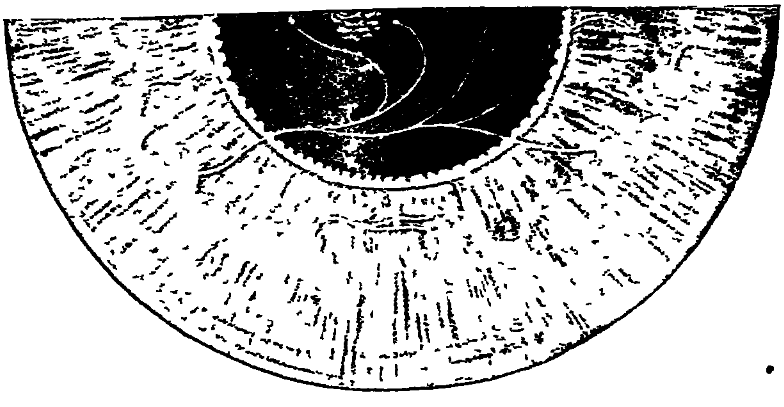
The corneal prism. Light coming from the left Shows corneal nerves

FIG 5.



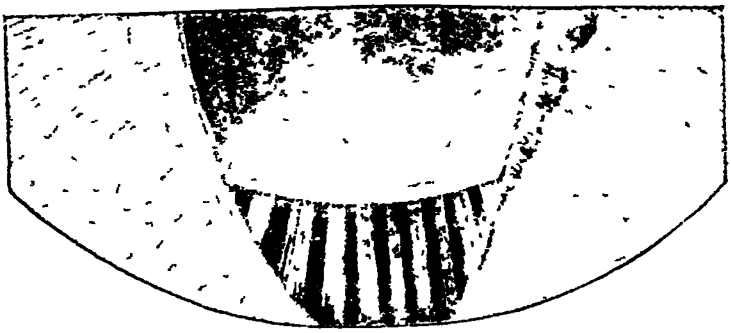
A highly atrophic iris The sphincter is clearly seen Blood vessels of the iris, some of which are functional and others are mere fibrous strands

FIG 6.



A normal iris showing the frill from which arise filaments of the pupillary membrane A few stars on the anterior capsule

FIG 7



Congenital coloboma of the iris exposing a normal zonular ligament.

The Apparatus Recommended.

I advise the use of the Zeiss slit-lamp It is unwise to have anything to do with the combined slit-lamp and Gullstrand ophthalmoscope. The best lenses to get are paired objectives A 0 · A 2 and A 3, ocular 2, and a micrometer ocular I recommend the objective A 0 instead of F 55. The latter magnifies only nine times, and I regard it as a pretty toy A 0 is a useful lens, magnifying 15 times. It serves most purposes and is easy to use It is not powerful enough to see the endothelium in detail or to observe small particles in the aqueous A 0 has been little used as yet, but I have recently obtained one and I find that I am employing it more than any other I greatly prefer the glass-top table to the double slides for moving the microscope. This mechanical stage is easier to use, but is a handicap to the expert Using A 0 and the glass top it is possible to focus the microscope by sliding it on the glass; it can be instantly slewed at will, and the movements of the patient can be followed automatically, for we hold the microscope by the screw which raises and lowers it and so we have complete control with one hand This is not possible with the mechanical stage

The Examination by Slit-Lamp

A slit-lamp examination falls under two heads, with the broad beam and with the narrow beam

When a ray of light passes through media in the eye which are not optically homogeneous but composed of lamellæ, some of the light is internally reflected and dispersed, and the medium glows; it becomes relucent. Optically homogeneous media remain dark Thus the cornea, the lens, and the vitreous become relucent, whereas the epithelial layer of the cornea, the aqueous, and the retrolental space, remain almost dark. I say almost, for an optically inactive medium does not exist in the eye The appearance when the narrow beam is thrown into the eye is seen in Fig. 2. To the left we see a scimitar-like crescent of light, the section of the relucent cornea The adjacent dark area is the anterior chamber. The lens is on the right and shows areas of optical discontinuity. To the extreme right we may note the faint glow of the vitreous Careful focusing will allow us to make out the architecture of the vitreous, which in section shows as a series of sinuous waving bright lines, the edges of the membranes which compose the organised part of the vitreous In most slit-lamp drawings the whole structure is shown in sharp focus, but in reality this is not the case This figure shows the optical section of the eye, the organ is seen in profile; we have gained our third dimension

In Fig 3 we see the effect of throwing the broad beam into the eye A block of light is seen in the area of the cornea, the *prisma* in German Although it is not a geometrical prism, it is convenient to use the word prism to describe this relucent block The cortical layer of the lens forms a second prism The lens prism is not so sharp as the corneal and the posterior surface is more strongly curved than the anterior It is very important to differentiate this prism, because its posterior surface is the face of the adult nucleus, a landmark in the lental landscape Behind the prism we generally see the posterior inverted Y, another prominent landmark marking the posterior surface of the embryonic nucleus of the lens The anterior erect Y is generally very difficult to detect

We can now pass on to a more detailed study of the eye as seen with the slit-lamp, taking the structures in anatomical sequence

The Cornea

The corneal prism is shown in Fig 4. The surface to the left is the epithelial surface of the cornea, the darker surface to the right marks the margin of the beam of light—we call it the proximal section There is a distal section, but this is invisible Looking through the prism we focus upon the endothelial surface of the prism This reflects light faintly, and in the young normal cornea is not obvious In the aged, and after interstitial keratitis, the endothelial surface reflects light strongly and stands out clearly as a somewhat opaque granular surface It is possible to see the epithelial layer of the cornea, if we overrun our lamp, using a voltage of 10 instead of the usual 8, and focus sharply upon the extreme distal edge of the epithelial surface of the prism, we see a clear layer—this is the optically inactive epithelial layer of the cornea

Reverting to the normal prism as shown in Fig 4 we note that the stroma is granular in appearance In the outer two-thirds of the prism the corneal nerves are seen. At the periphery they are thick and medullated, but as they enter the transparent cornea they lose their medulla, and look like threads of cotton. They divide dichotomously and occasionally show a web-like formation in the angle between two twigs We see no trace of Bowman's tubules or of Recklinghausen's canals Leber has shown that these structures are artefacts Koeppe, using magnifications of 60 and 80, has described an elaborate system of lymph passages, but his observations have not received confirmation

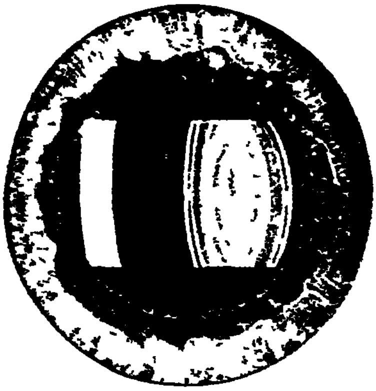
If we examine the endothelial surface of the cornea in the zone of specular reflection we see a yellow shagreen area, which on careful focusing resolves itself into a mosaic of hexagonal cells, the endothelial layer of the cornea Among the cells there are dark crater-like formations These may in part correspond to the Hassal-Henle warts, thickenings, of Descemet's membrane In the pig's eye the endothelial cells are very large and their nuclei are seen as dark dots in the centre of the cell In man the nuclei are held to be invisible, but we recently examined a miner and found that his endothelial cells were abnormally large, and we were able to see the nuclei distinctly Bowman's and Descemet's membranes are unseen till they fall into folds Such are very common in Descemet's membrane, and form after operations and accidents which perforate the cornea, and in corneal inflammation and œdema They are seen in great profusion in interstitial keratitis The folds may take various forms After a central keratitis the wrinkles in both Bowman's and Descemet's membrane—fine in the former, coarse in the latter—radiate star-like from the centre towards the periphery of the cornea Those seen after operations spread from the scar and have a double contour with silvery edges They rapidly disappear as the healing of the wound progresses

Ulceration of the cornea can be minutely examined with the slit-lamp. When the beam is thrown on to the ulcer we note a deep notch in the prism, and by moving the beam over the surface of the ulcer we obtain a series of contour lines which supply a complete map of the configuration of the ulcer We can follow the process of healing and the onset of vascularisation in all its details

Bullous Keratitis—In this condition the detachment of the epithelium can be viewed in section, and when the cornea is superficially vascularised we can locate the pannus just under the epithelium

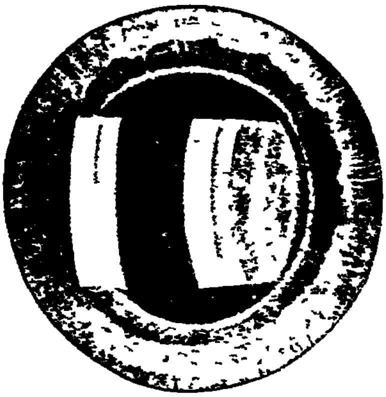
The Visible Circulation—If one of the smaller vessels in a pannus or a deep vascularisation be examined by retro-illumination so that the vessel is seen by transmitted light, using the iris as a mirror, the actual circulation of the blood is clearly perceived Globules are observed coursing along the capillaries In the very smallest the flow is intermittent as described by Krogh In others the corpuscles are at intervals projected along the vessels like shots from a machine-gun In a small twig joining two larger trunks the flow may be rhythmically reversed It is most fascinating to watch the phenomena of the circulation with the corneal microscope under the illumination of the slit-lamp It is probable that the globules we see are the actual corpuscles In a favourable case the blood stream can be seen with an ordinary loupe with the illumination of a half-watt lamp.

FIG. 2



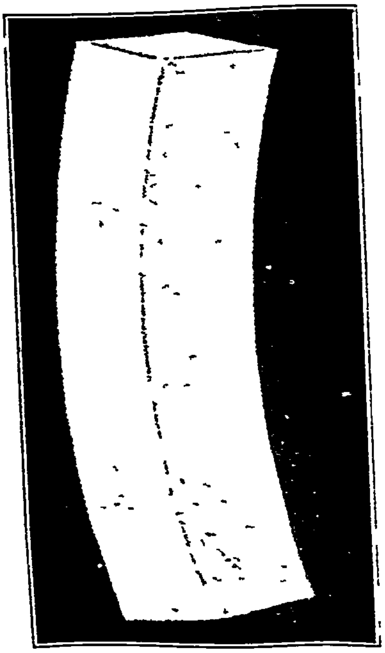
Illumination of the eye by the narrow beam.

FIG 3



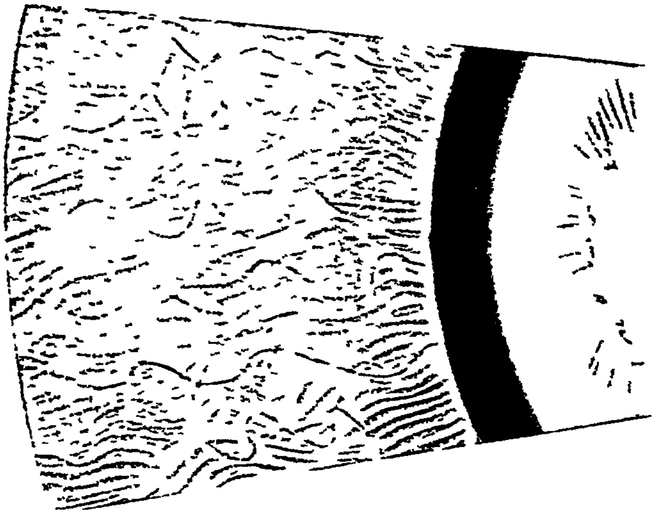
Illumination of the eye by the broad beam.

FIG. 4.



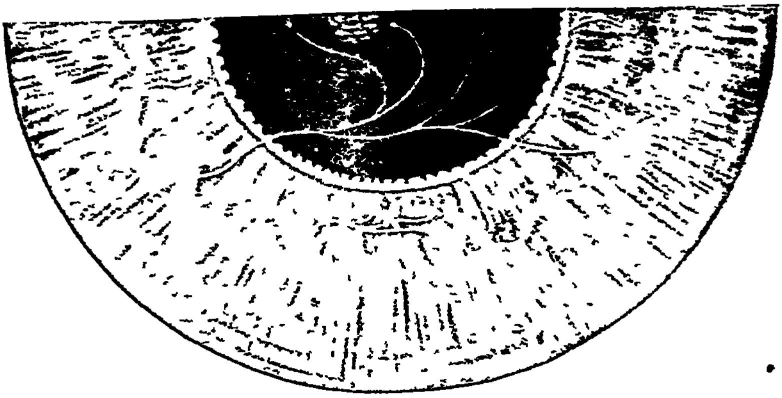
The corneal prism. Light coming from the left shows corneal nerves

FIG. 5.



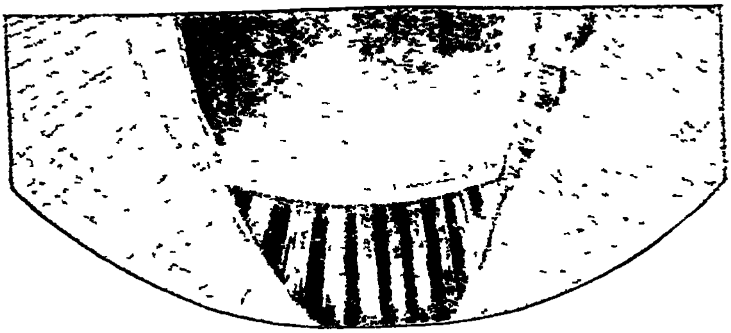
A highly atrophic iris The sphincter is clearly seen Blood vessels of the iris, some of which are functional and others are mere fibrous strands

FIG 6.



A normal iris showing the frill from which arise filaments of the pupillary membrane A few stars on the anterior capsule

FIG. 7.



Congenital coloboma of the iris exposing a normal zonular ligament.

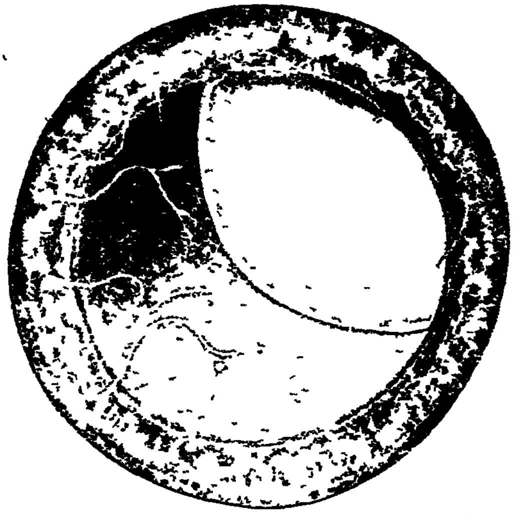
THE IRIS.

The examination of the iris presents no difficulties We must not forget that in a light-coloured iris the mesodermal layers are semi-transparent The surface of the iris can be examined by direct focal or indirect lateral illumination In a blue or atrophic iris the latter method demonstrates the sphincter of the iris The mesodermal layers are composed entirely of blood-vessels with an enormously thick adventitia, joined by loose connective tissue I doubt whether many of these structures are functional, for in an acute iritis only a few of them carry a visible blood stream These vessels are well seen in Fig 5 This represents a highly atrophic iris the result of a chronic irido-cyclitis To the right we see a shrunken lens with a rupture of the capsule through which the cortex is herniating The pigmented margin of the iris has entirely disappeared The sphincter is clearly visible, forming a dark brown zone immediately within the pupil margin The anterior layer of the mesodermic portion has disappeared and the deeper layer is highly atrophic The white strings are the remains of the arteries which form the main structure They are now small in number and sclerosed Among them a few are functioning as blood-carrying vessels Heterochromic cyclitis is another form of iris atrophy which can with advantage be studied with the slit-lamp (Pictures of this condition can be found in illustrations to the Doyne Memorial Lecture) In this disease the posterior retinal layer of the iris is atrophic and eventually disappears over considerable areas When such an iris is examined by light reflected back from the lens the atrophic patches transmit the light which shines through and gives the iris a moth-eaten appearance

THE LENS

Our knowledge of the anatomy and pathology of the lens has been almost revolutionised by the slit-lamp. By its aid we are now able to see it in sharp section and to map it out into zones Seen with the broad beam it is found to have, not two surfaces but several, one within the other, each with special characteristics

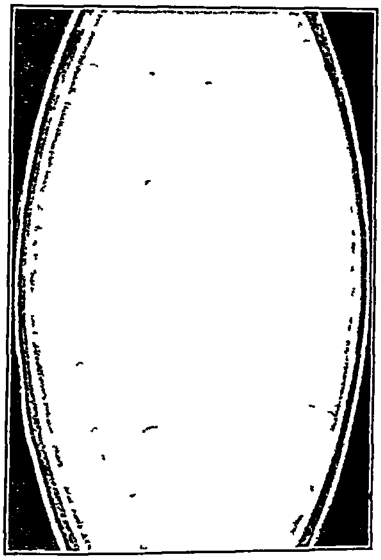
FIG 8



A congenital subluxation of the lens There is no trace of a suspensory ligament Vestigial fibres of the suspensory ligament spring from the frill

The Pupillary Membrane —All ophthalmologists are well acquainted with the anomaly known as persistent pupillary membrane, but till quite recently it was not realised that vestiges of the structure are very common With the loupe we frequently observe a small collection of pigment dots upon the anterior capsule of the lens These are not evidences of a past iritis but vestiges of the tunica vasculosa lentis anterior. Under a magnification of 35 they are seen to be stellate and generally tripolar. The arms of the stars are prolonged as grey fibrils which often anastomose with another star forming a rough network These stars may be infrequent; perhaps one only may be found, or they may form a dense brown film which impedes vision We occasionally see fine cobweb-like threads arising from the iris frill or small circle running across the anterior chamber either to join the frill on the opposite side or to float free in the aqueous These vestiges invariably arise from the frill, and never from the pupil margin The anterior mesenteric leaf of the iris takes little part in the movements of the iris, so these telegraph-like wires remain in tension when the pupil contracts An example of this condition is shown in Fig 6

FIG 9



Lamellar cataract in an adult caused by a cerebral abscess at the age of 13 (The embryonic nucleus has become too distinct in the process of reproduction)

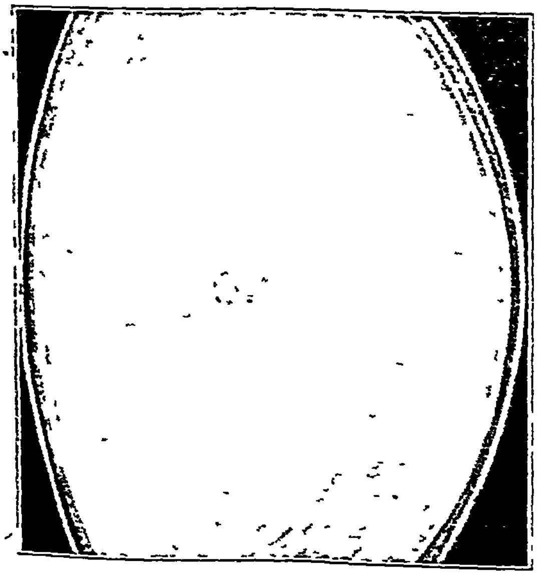
The Suspension of the Lens —The lens is suspended in the eye by the zonule of Zinn just as the hub of a bicycle is hung by the spokes It does not lie upon the vitreous, but is surrounded before and behind by the aqueous humour There is a perilental and a retrolental space both in free communication with the posterior chamber If this arrangement is disturbed, if the anterior chamber is abolished and the lens touches the cornea, its nutrition suffers and nuclear cataract forms I believe that the same is true of the retrolental space, and that the cause of senile nuclear cataract is to be sought in degeneration of the vitreous and disappearance of the retrolental space The zonule of Zinn is a beautiful structure under the corneal microscope The fibres are attached to the lens before and behind at some distance from the equator, and pass back between the ciliary processes to be inserted into the ora serrata and the vitreous This arrangement would incline to draw the lens backwards, but this tendency is neutralised by another set of fibres which pass forward to be attached to the ciliary processes I have seen fibrils taking this direction The main strands, each consisting of about seven fibres, number about 140 and lie in the valley one on each side of a ciliary process The suspensory ligament cannot be seen in the normal eye, but is visible in cases of subluxation and in congenital colobomata of the cornea A drawing of the latter abnormality is shown in Fig 7

Congenital dislocation of the lens is seen in three forms in what we may call the decentred lens the zonule of Zinn is perfect; in the ectopic lens the suspensory ligament is imperfect, and in the subluxated lens it is entirely absent An example of the latter form is shown in Fig 8 Here the lens is displaced and there is no trace of the zonule, but several vestiges of the pupillary membrane are present This classification has not only academic but clinical significance The first kind will not become displaced into the anterior chamber or fall into the vitreous, the last is liable to and will be difficult to extract, wander in the eye and is easier to remove; the third variety occupies an intermediate position.

THE LENS STRUCTURE.

The slit-lamp shows that the lens has a most complicated optical structure. When viewed with the narrow beam it shows a series of concentric lamellæ of varying hue and refringence. These zones of optical discontinuity may be considered from two standpoints. They may represent merely regions of slightly varying refractive index or express definite anatomical areas, dissimilar in physiological properties, reacting differently to toxic influences and to trophic disturbance. Both views are correct. The lens is an epithelial structure and grows constantly throughout life. The epithelial cells lay down fibres layer by layer like the annual rings of a tree. If there has been no modification of nutrition during childhood we should expect a homogeneous lens, and we often find it. The lenses of some children are almost devoid of zones, whereas other children of the same age possess a lens showing a varied landscape. We may reasonably suppose that the life of the first child has been regular and nutrition uniform. The second may have been subject to rhythmic subtle alterations in nutrition which are reflected in the lens. It would be interesting to investigate the history of several children to discover harmony between the lens architecture and alterations in general health. It is certain that under conditions of markedly abnormal nutrition the deposition of the lens fibres is profoundly modified, and we may get zones in which their actual structure is pathological. Lamellar cataract is a condition of this kind associated with general evidence of malnutrition such as tetany and ridged teeth. Similar changes are seen in the finger-nails. I recently examined a patient with lamellar cataract, which is shown in Fig 9. Here the opacity is outside the infantile nucleus, and I dated it as commencing at about 13 years of age. Subsequent inquiry elicited the fact that when 13 years of age the child had suffered from a cerebral abscess with acute ear symptoms. She had had a mastoid operation and had been trephined. She was acutely ill for a long time and in bed for nearly a year.

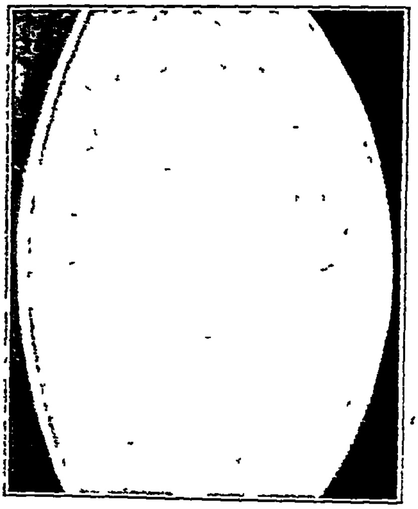
FIG 10.



A typical adult lens of the conventional type. The central axial cataract throwing a shadow backwards is found in 25 per cent of all lenses.

In addition to minor optical zones there are in the lens definite anatomical tracts. Fig 10 illustrates what we may call the Vogt conventional lens; I made the drawing from an actual patient, but such lenses are uncommon. Commencing from without, we first note the capsule, a bright scintillating line bounding the lens figure before and behind. The capsule has a very tenuous outer layer, the zonular lamella, to which the fibres of the zonule are attached. This may be seen with the slit-lamp when it becomes detached. Under the capsule there is a clear zone bounded internally by a well-defined bright non-scintillating line the subcapsular or reduplication line. This line is generally present, but occasionally in the aged and the young it cannot be made out with the ordinary apparatus. The yellowish zone under the subcapsular line we call the cortex. This region is in the adult separated from the central nuclear system by a well-defined surface which in later life reflects light strongly. This is the face of the adult nucleus which appears at about 12 years of age. Within the adult nucleus we have what I prefer to call the infantile nucleus, but which Vogt calls the outer embryonic nucleus. Centrally, we find two plano-convex bodies, the embryonic nuclei. These are separated by a dark space, the central lucid interval. This is the oldest part of the lens and is invariably present. On the posterior surface of the anterior lens of the embryonic nucleus there is an axial opacity which throws a dense shadow backwards. This is almost physiological for it is found in 25 per cent. of all lenses (Vogt). The curvature of the successive zones from without inwards increases up to the infantile nucleus, after which they become concentric. Not only is the curve sharper towards the centre, but in the young there is often a tendency to a reverse curve equatorially. This becomes very obvious in cases of lamellar cataract. Probably this system of curves corrects chromatic aberration and the plano-convex lenses at the centre neutralise spherical aberration. Fig 11 is a child's lens. In this particular example there was no subcapsular line and the adult nucleus had not yet formed. The surface of the infant nucleus divides the lens into cortex and nuclear system. The whole lens tends to be homogeneous and the yellow tinge of the cortex has not appeared. We used the narrow beam to obtain the sectional view of the lens that we have been discussing. With the broad beam we can differentiate the surfaces with their characteristic suture systems.

FIG 11.



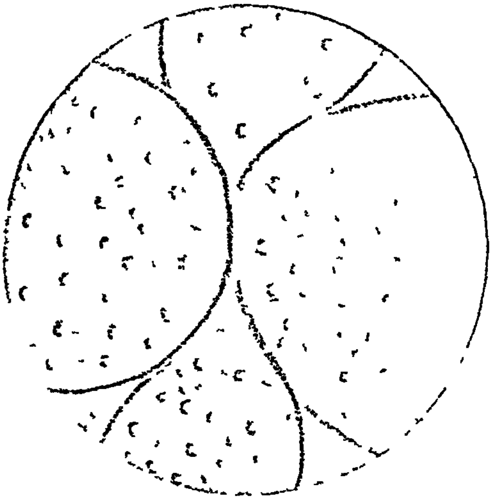
The lens of a child of 6. The posterior inverted Y is seen on the surface of the nucleus. No subcapsular line could be seen in this particular lens.

The *surface of the capsule* showed the shagreen which was well known long before the slit-lamp. It can be seen with the ordinary loupe under appropriate arrangement of illumination. In the shagreen the epithelial cells are seen, and occasionally it is iridescent. Slight iridescence especially when a large surface is seen with the loupe, is physiological, but excessive colour sheen indicates early cataractous changes in the lens. With the loupe we can see the complicated suture system of the cortex.

The *sutures of the adult nucleus*, especially in the aged have a most characteristic appearance which is shown in Fig 12 They are raised cameo-fashion from the surface of the nucleus in front, whereas behind the sutures are seen as an intaglio Often the surface is covered with bosses which may take the place of the sutures, giving a hob-nail boot appearance.

The *primary embryonic sutures of the lens*, the anterior and posterior Y's, characterise the surface of the embryonic nuclei Contrary to what is stated in all the text-books, the anterior Y is erect and the posterior inverted This mistake is curious, for the anterior Y is occasionally in lamellar cataract visible to the naked eye The lens fibres can be seen arising from the Y sutures They start from the tip of one Y and run round to the bifurcation of the other Thus, the fibres take a spiral course, and are all of approximately the same length The two Y's are shown in Figs 13 and 14 If we follow the nasal arm of the posterior Y to its bifurcation we shall see a white ring or part of a ring, often with some granulation or slight pigmentation This is the arc-line (Vogt's *Bogen-Linie*), the situation where the hyaloid arteries were attached to the lens Hanging from the arc-line we see, in most children, the hyaloid artery looking like a spiral piece of thick string In later life this generally falls off leaving a stump The artery is seen in Fig 15 The fundus drawing (Fig 16) shows a persistent hyaloid ending in a mushroom The anterior part of the hyaloid was found to be normal The anterior two-thirds had separated normally from the posterior third which had failed to absorb I am indebted to Miss Ida Mann for the information that the hyaloid normally separates in this situation; the posterior half absorbs, the anterior commonly persists

FIG. 12



The relief sutures of the adult nucleus

CATARACT

If the aqueous contains toxins the capsules and the cortex will suffer first A typical example is naphthaline cataract The posterior capsule is especially prone to be affected by toxic influences In certain cases of low-grade cyclitis and choroiditis the vitreous degenerates and the posterior capsule shows alterations. The most striking evidence of this is pronounced iridescence of the posterior capsule, which shows a mother-of-pearl sheen with sparkling points of metallic lustre This change heralds the advent of cataracta complicata The posterior shagreen is always more lustrous than the anterior, and slight iridescence is not uncommon and is compatible with health Vacuoles form under the capsules They vary in size and shape, and are easily seen with the ophthalmoscope

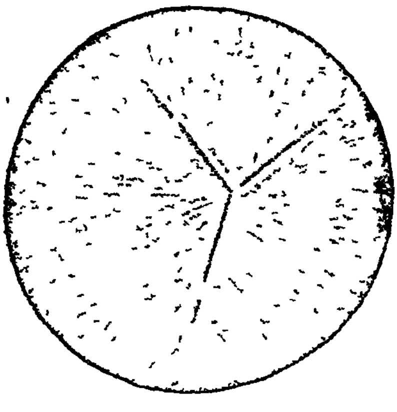
The commonest form of senile cataract takes the form of cortical striæ These spicules are developed in the following manner the cortex begins to split into lamellæ, the *lamellarer Zerklüftung* of Vogt These rifts in the cortex do not follow the path of the lens fibres or of the sutures, but run diagonally across the cortex Seen in section the lamellar separation causes a sort of herring-bone appearance. Comparatively clear spaces filled with fluid now form between the lamellæ, the *Wasser-Spalt* or fluid-cleft These fluid-clefts may enlarge and run together so that a large area of the cortex may become perfectly homogeneous and pellucid in appearance This phenomenon explains those cases of cataract in which a decided improvement of vision takes place Generally, however, the clefts fill up with solid material and form opaque spicules

Fibrillation of the adult nucleus is frequently seen, but in this case the process consists in a separation of the actual fibrils. The adult nucleus is the favourite seat of punctate opacities In cataracta punctata cœrulea these have a blue colour, and are generally associated with club-shaped peripheral opacities, the cataracta coronaria of Vogt This is an acquired cataract and is slowly progressive in some cases In the optical section the opacities are seen to lie in the adult nucleus

The infantile nucleus is the usual situation of lamellar cataract. In this form we get a wreath of artificial scintillating particles giving the appearance of ice A cataract of this type has been shown in Fig 9

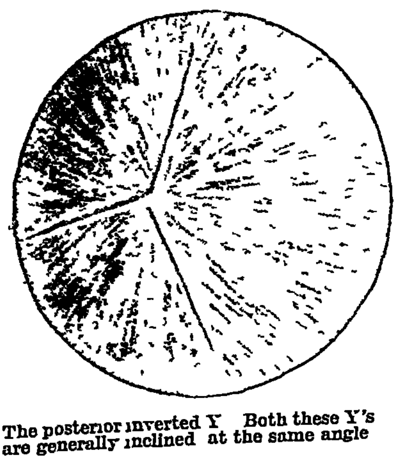
Central cataracts are generally familial A typical example is shown in Fig 17 The central sphere is considerably smaller than the embryonic nucleus, showing that it originated very early in the development

FIG 13



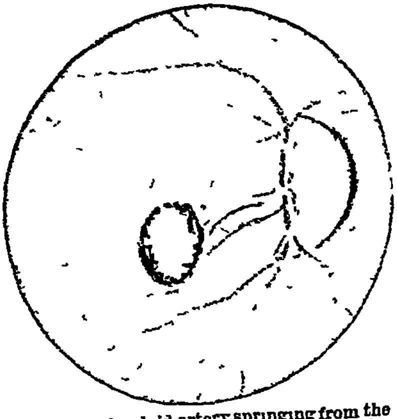
The anterior erect Y showing lens fibres

FIG 14



The posterior inverted Y Both these Y's are generally inclined at the same angle

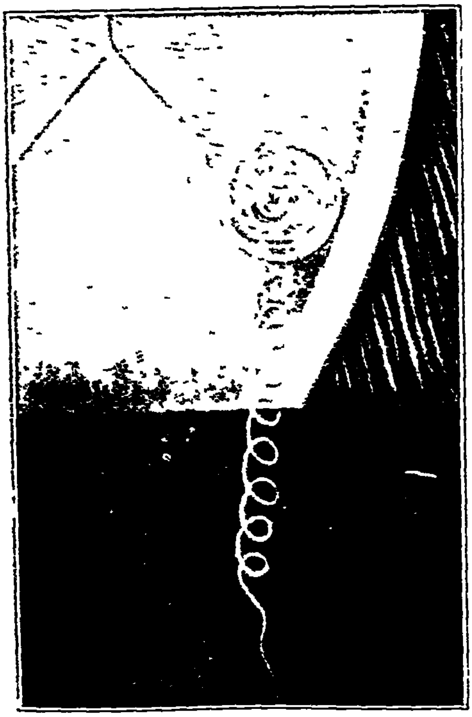
FIG 16



A persistent hyaloid artery springing from the optic nerve head and ending in a disc Anterior part of the same artery is seen in Fig 15 of the lens The sutures are exterior to the confines of the opacity. The drawing shows the view with the loupe and a section made with my pocket slit-lamp

Nuclear cataract begins as an excessive sclerosis of the central portion of the lens. The sclerosed nucleus is always surrounded by a transparent zone and is at first itself transparent. In a typical example the cortex is normal, the clear zone is strongly differentiated and within it we see the sclerosed nucleus, greenish in front, yellowish to brown behind. Later on the nucleus will grow, especially axially; its curvature will increase, and its contour will be less sharp and eventually blurred Finally, its surface may become crenellated This is the condition known to the text-books as myopic degeneration of the lens If the index of refraction should rise in relation to that of the cortex we have the lens with a double focus because the axial portion has a greater dioptric strength than the periphery. Fortunately, the pupil of the aged is small and the actual effect is myopia and sometimes irregular lental astigmatism. Such lenses have been described as suffering from lenticonus posterior. This condition is very rare and is quite a different thing In a more advanced stage of nuclear sclerosis, figured in the Doyne lecture, the cortex was full of fluid-clefts, and there was high-grade sclerosis of the nucleus with increased curvature. Vision with minus 8 was 6/12. The surface of the adult nucleus seen in section gave the impression of an internal capsule It was covered with nodules which appeared in the section as definite knobs Each threw a dense shadow backwards Nuclear sclerosis passes gradually into nuclear cataract if the nucleus becomes opaque Often the bronze colour seen in the early cases deepens and we obtain the brown and black cataracts Nuclear cataracts may rapidly form without passing through the sclerotic stage when the nutrition of the lens suffers, as for example if the anterior chamber is abolished and the lens comes into contact with the cornea.

FIG 15



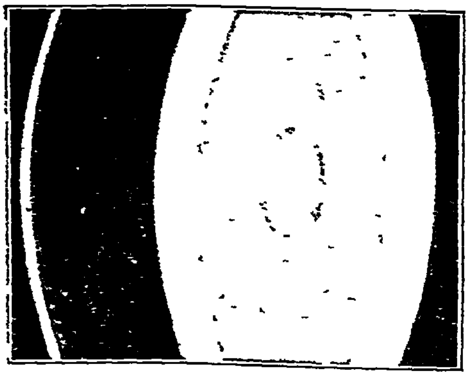
The arc-line and the vestige of the hyaloid artery hanging down in the retrolental space It is found in 75 per cent of all children, but falls off in later life

MEDICO-LEGAL VALUE OF THE SLIT-LAMP.

I can only briefly allude to this subject, which is of immense importance In industrial towns we are frequently called upon to decide whether a fragment of metal which has struck the cornea has actually perforated. In the majority of cases the slit-lamp will at once supply the answer. If we focus the beam upon the scar we are able to decide whether the track of the fragment passes through the cornea by noting that it is visible on the endothelial surface. In a case under our care there was a wound traversing the cornea. An opening was visible in the anterior capsule and a passage could be traced right through the lens ending in a wound of exit in the posterior capsule. Here the cortex was softening and exuding into the retrolental space. This afforded an additional proof that the posterior surface of the lens is bathed in the aqueous which had entered the lens, causing a cataract by dissolving the cortex, just as it does after a discission of the anterior capsule

In another case I had removed a fragment of steel from an eye by the posterior route with the giant magnet. Fortunately, I had made full notes with drawings Perfect recovery took place with full acuity. The patient was not seen for ten years, when he appeared with a cataract in the wounded eye and siderosis The natural conclusion was that there had been two foreign bodies and that one only had been removed, for there was no history of any subsequent accident There was a wound in the iris that did not appear in the original drawings, but this could in a court of law have been put down to defective observation. The slit-lamp at once supplied the correct solution. The original wound was still visible in the cornea but only at an entry and an exit scar. Between the two the corneal substance had become clear. Another penetrating wound was found in the cornea showing a continuous track from front to back. This was a much younger injury and the corneal stroma had not become transparent. It was obvious that this wound and the unrecorded iris wound were recent events, and that there had been two separate perforations of the eye by a fragment of steel. The eye was removed and the fragment found in the vitreous. The cases might have been of great importance had the man been working for two employers, for obviously the first would have had no liability for the second accident

FIG 17.



A familial central cataract. Optical section made with the author's pocket slit-lamp Magnified six times with an ordinary loupe

Many of the drawings shown at the lecture but here omitted are to be found in: The Doyne Memorial Lecture, *British Journal of Ophthalmology*, vol viii p 561; the *Transactions of the Ophthalmological Society*, vol. xliv, p. 57, vol xlv., part 2, p. 657: and the *British Medical Journal*, May 31st, 1924.

THE EXAMINATION OF THE GASTRIC CONTENTS IN INFANTS,

WITH SOME CONSIDERATIONS AS TO THE VALUE OF LACTIC ACID MILK IN INFANT FEEDING

By ETHEL CASSIE, M D, D P H EDIN,
CHIEF MEDICAL OFFICER FOR CHILD WELFARE AND MEDICAL SUPERINTENDENT OF THE CARNEGIE INSTITUTE, BIRMINGHAM,
AND
URSULA COX, M R C S, D.P.H,
ASSISTANT MEDICAL OFFICER FOR CHILD WELFARE, BIRMINGHAM

THIS inquiry was instituted in view of the increased stress laid on the importance of the acidity of the gastric contents in disorders of the digestion in young infants It was felt that it would be of interest to ascertain whether any relationship could be established between the type of milk given, the acidity of the gastric contents, and the clinical symptoms shown by the infant The absence of free HCl in the gastric contents of infants under 1 year, after any type of test-feed, corresponding to a normal feed for such an infant, requires to be made clear, since some authorities have written in such a way as to suggest the presence of free HCl in these cases Free HCl is found in the resting juice, or following the administration of barley water, or a very small feed, but not during the digestion of an adequate meal In many cases 1 oz of sweetened barley water was given at intervals of 3–4 hours after the last feed, and the stomach contents withdrawn 10 minutes later In all cases where no food remained in the stomach free HCl was present, but in those cases where there was delay in emptying, and curd remained in the stomach from the last meal, free HCl was absent We have also found that if a very small feed is given —e g , a 60 c cm feed to a child of 4–6 months—and there is no delay in the emptying of the stomach, so that at the end of an hour only 5–10 c.cm remain, with practically no curd, then free HCl is found Any discrepancy between our results and those of some other observers[1, 2] who have found free HCl at varying periods after a feed may be explained by the size of the feed given All the results quoted in our tables were obtained after a "full" feed—i e , the one-sixth part of a milk mixture considered adequate to the caloric requirements of a child of the given age and weight Keeping these facts in mind, and realising that an appreciable quantity of material must be obtained for satisfactory chemical tests, the methods detailed below were decided on as the most satisfactory for our purpose American workers especially have suggested that the value of lactic acid milk and other acidified milks depends on the higher acidity of the gastric contents obtained with them, but it was felt that very little was known of the normal reaction to the ordinary types of milk used in varying forms of infantile dyspepsia, and that possibly the difficulty in the average case was not due to this factor to any important extent

A very valuable synopsis of the recent literature on this subject has been published in the *American Journal of Diseases of Children* (May and November, 1925) and those interested cannot do better than study these articles It is frequently difficult to obtain access to the American journals in which most of the publications have appeared

The work of Faber[3] and Marriott[4] on the value of acidified milk in infant feeding, considered to be due to the neutralisation of the variation between cow's milk and human milk in buffer content, is fairly well known, though acidified milk has not yet been used to any great extent in this country as compared with America Faber has shown that gastric lipase is fully active at a pH of 4 5 and 4 0, while pepsin acts from pH 5 0 but does not reach its full activity till pH 2 3 This last figure implies the presence of free HCl and is very rarely, if ever, reached in the infant's stomach during normal digestion In order to obtain a pH concentration of 4 5 much more acid secretion is required for cow's milk than for human milk owing to the higher buffer content due to phosphates and calcium caseinate. Faber and Marriott believe that the difficulty of successful feeding with cow's milk is due essentially to this factor and can be overcome by the use of acid milks, whether hydrochloric acid or lactic acid be used, and both observers use milk little if at all diluted, and with a high fat percentage, Faber using HCl in preference to lactic acid milk Marriott adds carbohydrate in the form of corn syrup Lactic acid milk can be used from birth, but hydrochloric acid milk is not recommended till after the sixth week While the value of acidified milk feeding in certain cases is not disputed, it was felt that the results obtained were possibly not due to the change in the pH concentration only, but that other factors were coming into play In souring the milk a light flocculent curd is obtained, and it is necessary to break this up before administering the milk to the infant, therefore an actual change in the physical quality of the milk is present as well as a chemical change, and this may be of considerable importance Excellent results have been obtained in several cases at the Carnegie Institute by simply curdling milk lightly with rennet, breaking up the curd, and giving this to the infant In the average infant's stomach very little remains at the end of two hours, so much was this found to be the case that the test-meals were usually removed at the end of one hour There is, then, no doubt that ordinarily the bulk of digestion takes place in the bowel, and that beyond physical changes in the milk preparing it for bowel digestion, digestion in the stomach is of relatively little importance It was thought possible that the higher acidity of soured milk and the change in the curd might ensure a more rapid passage from the stomach and thus be of value especially where vomiting is a prominent feature It will be seen that this was not found to be the case On the other hand, as bowel digestion takes place in an alkaline medium it seems doubtful if there can be any advantage in pouring a more acid food into the bowel It is an interesting speculation as to whether such an increased acidity in the duodenal contents stimulates the pancreas, liver, and duodenal glands to increase their secretions or not So far this remains a speculation, but in the case of a feeble and marasmic infant it seems probable that any response which could be evoked would be feeble Recent work by Schiff and Gottstein[5] on the reaction of the duodenal contents after the administration of acidified milk mixtures is of interest They seem to show that acidified food does not produce any prolonged acidification of the duodenal contents Consequently it seems probable that some increase in alkaline secretions must occur Other workers in this field may also be quoted—for instance, Hahn obtained a pH of 5 0 at the height of gastric digestion, a result confirmed by Salge, and this according to Van Dam is the optimum reaction for rennin and also according to Davidsohn for gastric lipase[6] This corresponds closely with Faber's views and again shows the usual absence of free HCl at the height of digestion

Method

The stomach contents were withdrawn one hour after a feed, and the amount noted This was filtered and the pH estimated colorimetrically The HCl deficit and the total and combined acidity were estimated by titration against N/10 NaOH, using in the first case Congo red and in the second phenolphthalein as indicators. Each feed represented one-sixth of the caloric requirements of the individual infant

The infants available for study were those admitted to the observation ward of the Carnegie Institute; a large percentage were suffering from different types of infantile dyspepsia or enteritis, but normal infants were also studied, including those who were admitted with their mothers for the restoration of breast feeding, and others suffering from mismanagement The number studied could have been larger with advantage, but the results correspond very closely with those of other observers where they are comparable and may therefore be taken as accurate averages

TABLE I

Food.	pH of gastric contents withdrawn after one hour	Percentage of food left in stomach	No of cases
C M and water p a with sugar	4 8	27	13
Above with 10 15 gr p a. sod bic	5 6	24	5
Above with 20 per cent HCl	3 7	36	2
Whole C M with sugar	4 9	46	11
Acidified whole milk (culture)	4·0	56	11
Citrated whole milk (sod. cit gr 2 to 1 oz)	5 3	63	9
Unsweetened condensed milk with sugar (1 6)	4 8	40	9
Breast milk .	4 8	35	4
Whey reconstituted from whey powder .	6·0	43	5
Dried Milk .	4 9	32	8

C M =Cow's milk.

TABLE II

Food.	No of cases examined.	HCl deficit	T and C acidity	Buffer value and free fatty acids	Percentage of food in stomach after one hour
C M. and water p a with sugar	24	25	29	54	27
Above with 10–15 gr sod. bicarb	5	51	19	70	24
Above with 20 per cent N/10 HCl .	2	29	56	85	36
Whole milk with sugar .	11	40	54	94	46
Citrated whole milk	9	63	40	105	63
Dried milk (1 15)	16	33	34	67	32
Unsweetened	18	26	37	63	40
Condensed milk (1 6)—sugar	—	—	—		—
Breast milk	8	13	28	41	35
Acidified whole milk (culture)	7	37	40	77	56
Whey reconstituted from whey powder	7	117	36	153	43

Results with Different Foods

The publication of tables showing results in individual cases is contra-indicated by considerations of space and it has, therefore, seemed best to give a simple table of averages for each type of food This to some extent diminishes the contrasts In considering these results the pH of milks before feeding should be considered These averaged as follows Breast milk, pH 6 5 , cow's milk, pH 6 4 ; cow's milk with 20 per cent HCl N/10, pH 5 2 , lactic acid milk, pH 5 0 , ideal milk, pH 6 2 , dried milk (diluted 1 15), pH 6 6

It will be seen from Tables I and II that with the ordinary types of feeding—viz , milk and water mixtures (half and half), dried milk, and condensed milk (in similar dilutions), the pH concentration does not vary markedly from breast milk. The acidity is not affected by small variations in fat percentage, skim milk giving the same result as whole milk. There appears to be little difficulty in obtaining a sufficient secretion of HCl to meet the need of what may be considered a suitable pH for gastric digestion in infancy, taking the acidity in the case of a healthy breast-fed infant as a standard Secway mixtures give a low pH The reason for this is seen in the high buffer value (Table II) A low acidity is also obtained when soda bicarbonate or potassium citrate is added to the milk. In these cases the pH is below the optimum formulated by the authorities previously quoted, but this only occurs with these alkaline milks The acidified milks give a definitely higher pH.

The HCl deficiency with milks of the same dilution remains fairly constant and about double that of the breast milk Acidified whole milk gives practically the same deficit as whole sweet milk. The reason may be that the physical condition of the milk hastens digestion It will be noted that the buffer value is given plus free fatty acids ; it is obtained by adding the HCl deficit and total and combined acidity, and consequently must include free fatty acids The acid milk gives a high figure owing to a high total and combined acidity with more free fatty acid The figure for whey is in contrast with this and represents a large HCl deficit

The rate at which the stomach empties varies within fairly wide limits in individual cases, but does appear to be affected rather by the physical properties of the food than by the pH concentration Thus, where whole milk has been fed either sweet, citrated or acidified, over 45 per cent of the contents remain in the stomach after one hour, whereas with breast milk or dilutions of cow's milk under 40 per cent remains

Results in Different Conditions

Grouping the results by the condition of the child's health in certain of the cases, the average pH obtained is shown in Table III

TABLE III.

—	No of exam.	Ordinary feeds	Ac. milk.	Alk. and Secway mixtures
Healthy	19	4 9	4 3	6·0
Enteritis .	24	4 8	4 5	5 6
Dyspepsias	17	4 7	4 1	—
Bronchitis, Pyelitis, &c	8	5·0	—	5 9

It will be seen that the variation is not great but that in acute illness there is a slight fall in acidity such as might be expected

Further Considerations

As a result of careful observation of individual cases, the conclusion has been reached that the amount of gastric acidity is not of great importance In relation to vomiting the character of the curd, and the consistency of the food mixture, together with the fat percentage, appears to be of much greater importance. Where the curd is soft and flocculent, higher fat percentages appear to be better tolerated, as in acidified milk, and as in Ideal milk given as whole milk. Rennet milk apparently gives similar results In this connexion the work of Rogatz[7] on the peristolic function of the stomach should be remembered On the other hand there can be no doubt that lactic acid milk, prepared by souring with the *Bacillus bulgaricus* or similar organism, is a very valuable food in certain cases, though its value is felt to lie in its biological rather than in its chemical action The results have been very striking in some very obstinate cases of enteritis, and have been associated with a change in the intestinal flora This has been found to be the case only in a very definite group of cases —viz , infective enteritis—and lactic acid milk has not proved a universal panacea, but is undoubtedly a most valuable adjuvant A very interesting study of the results on intestinal flora by the use of milk acidified by the *Streptococcus lacticus* has just been published by Alan Brown[8] and others The results obtained are most suggestive

Lactic Acid Milk

Method of Preparation —The milk has been soured with *B bulgaricus* Repeated subcultures in the feeding-room have been avoided owing to the dangers of contamination The milk is sterilised in litre

TABLE IV.—TEN CASES OF ENTERITIS TREATED WITH LACTIC ACID MILK.

Case	Age.	Condition.	Symptoms.	Food	Stools		Result
					Before.	Later	
1. U B .	6 mths.	C E	Wasted 1½ lb loss of weight in one week D, no V	A S M and D M Later A whole milk.	—	—	Complete recovery in four weeks Sent home on ordinary milk two weeks later
2. P. P. .	8 mths.	C E	Very wasted and feeble D V.	A S M and D M	Green, alkaline, mucus and blood + + Gram + b and cocci pr	One month Similar, Gram + b now pr, less blood and mucus.	Slow imp Discharged in 3 weeks on dried milk and has done well.
3 L. H .	1 mth	C E.	Wasted, feeble, V. Stools green, slimy	,,	Green, alkaline, mucus and blood + Gram + b and cocci pr	Three months No marked change	Child imp very slowly Relapsed on going home and was sent to Babies' Hosp
4 K. R .	2½ mths	C E	Very wasted D V Severe recurrent attacks	,,	Acid reac (green) Mucus and blood + Gram + b. pr	Four months No mucus or blood Gram + b. pr Reac acid	Slow imp with repeated relapses Finally well and gaining weight
5. A. G. . .	6 wks	C E	Wasted, D, V	,,	Green, acid, mucus and blood + + Gram + b. and cocci pr	One month Pasty, yellow No mucus Acid. Cocci and Gram + b. pr.	Imp steadily on acidified milk after no imp on other food.
6 B. W .	5 mths	C E	Wasting, D V., pain.	A S M and D M After one month of other foods Later A whole milk.	Acid, green, mucus and blood + + Gram + b and Gram + b and cocci pr	One month Yellow, pasty, neutral blood present Gram b + and cocci pr	Rapid and steady imp. No relapses
7. N C.	7 mths	C E	Wasting, D. V, urticaria	A S M and D M after 14 days.	Acid, mucus and blood + Gram + b and cocci pr	Ten days Alkaline. Yellow, pasty No mucus, blood still present. Gram + b and cocci pr.	Rapid and steady imp
8. J G .	3 mths	C E	Wasting, D V.	A S M after one week	Green and loose Acid Mucus + + No blood Gram + b and cocci pr	One month Alkaline, yellow, and pasty No blood. Gram – and Gram + b, with cocci pr	Rapid and steady imp.
9 S F. .	4 mths	C E	Wasted, D V., pain	Breast milk with A whole milk	Green, slimy Acid Mucus and blood + + Gram + b and cocci pr.	Three weeks Alkaline, yellow, pasty, Tr of blood Gram + and – b and cocci pr	Rapid imp
10 L V.	12 mths	A E	Wasted and feeble, D. V.	A milk with jelly and sponge biscuits	No record.	Ten days Pale and slimy Alkaline, blood and mucus + + Gram + b and cocci pr Ten days later Loose alkaline Little blood. Gram + b and Gram – b pr	Imp steadily

C E. = Chronic enteritis, A = Acute D and V = *Diarrhœa and vomiting* A S M and D M = Acidified skim milks and dextri maltose. B = Bacilli. Pr. = Predominate. Imp = Improvement

Case 3 relapsed, but it was felt that there was here a fresh infection for the house was dirty and overcrowded and enteritis was prevalent at the time

BIBLIOGRAPHY (Reference Nos in Text)

1 Griswold and Shohl Gastric Digestion in New born Infants, Am J Dis Child, October, 1925
2 Parsons, L G Wasting Disorders of Early Infancy, THE LANCET, April, 1924
3 Faber, H K Hydrochloric Acid]Milk in Infant Feeding, Am J Dis Child, xxvi, 401 (November), 1923
4 Marriott, W McK, and Davidson, L T The Acidity of Gastric Contents of Infants, Am J Dis Child, xxvi, 512 (December), 1923 Ibid. Acidified Whole Milk as a Routine Infant Food, J A M A, lxxxi, 2007 (Dec 15th), 1923
5 Schiff, E, and Gottstein, W How Does the Acidity of the Duodenal Contents Behave on the Administration of Acid Milk Mixtures? Jahrb J Kinderh, cvii, 99 (September), 1924
6 Abt's Pediatrics, vol 1
7 Rogatz, J L Roentgenologic Studies on the Peristaltic Function of the Stomach in Infancy and its Significance in the Genesis of Habitual Vomiting, Ztschr F Kinderh, xxxviii, 1 (April 5th), 1924 Roentgen Ray Studies of Stomach Function the Peristaltic Function, Am J Dis Child, xxviii, 69 The Peristaltic Function its Practical Significance (July), 1924, in Cases of Pylorospasm and Habitual Vomiting, Am J Dis Child, xxviii, 582 (November), 1924
8 Brown, Alan, Courtney, A M, Davis, G A, and MacLachlan, I F Ætiology of Chronic Intestinal Indigestion, Am J Dis Child, xxx, (November), 1925

flasks. inoculated, and then incubated for eight hours The curd is broken up with a fork and then passed through a sieve It is given in suitable dilutions or as whole milk. Skim milk is frequently used where fat curds are present in the stools in large quantities, ¼ oz. of top milk being removed in each pint When sweetened infants take this milk well There is more difficulty with older children with whom, moreover, it has not proved very useful

Method of Use —On admission it has been usual to keep the infant for a few days on the milk mixture it has been receiving at home. only modifying glaring errors in quantity or percentage composition. Subsequently ½ oz. mixtures of dried milk. or other simple mixtures have been tried before using lactic acid milk. This has made it possible to exclude those cases in which the child is suffering simply from mismanagement. or unsuitable feeding rather than from a chronic infective condition which is believed to be the one type really benefited by the lactic acid milk mixture Quite half the children suffering from loss of weight, vomiting or diarrhœa improve rapidly with the correction of their diet and hygienic conditions alone.

Details of ten cases of the type which benefits most markedly. and usually very rapidly, are given in Table IV It is not easy in a table of this kind to bring out the impression given to the clinical observer, but no one can watch these cases and fail to be impressed with the rapid change in the character of the stools, and the general improvement in the child s health. In fact unless an improvement is obtained within eight to ten days the probability is that the method will not be successful. There have been two or three instances where no improvement has resulted, the child being so wasted and feeble that it was practically moribund before treatment was begun In another type of case. where vomiting is a prominent feature. the stools improve, but the general benefit is disappointing. vomiting continues, and the child fails to gain weight. In these cases other foods, such as thickened foods. have been required subsequently. The soured milk having markedly improved the bowel conditions the child then responds more readily to such treatment. Two cases may be given :—

CASE 1—F. J 3½ months. Chronic enteritis, wasted vomiting — — Stools green and acid mucus — —. No blood. Gram — bacilli predominate. Acidified skim milk and dextri-maltose given. Stools improved quickly, became yellow pasty, alkaline, with a preponderance of Gram-negative organisms. Vomiting continued. No satisfactory gain in weight Now put on alternate feeds of lactic acid milk and thickened foods (Benger's 1 oz. to 1 pint milk) Vomiting then ceased. Satisfactory gain in weight.

CASE 2.—E H., 3 months Chronic enteritis. Vomiting — +. Diarrhœa from time to time. Wasted. Stools loose, green acid. Mucus and blood — Preponderance of Gram — bacilli and cocci Given acidified skim milk and dextri-maltose. Stools improved quickly, became pasty with no blood. Preponderance of Gram — organisms. Vomiting continued but was less frequent. Weight unsatisfactory. Given Bengers and milk feed entirely. Good gain in weight resulted. Stools remained satisfactory.

The most difficult cases for ordinary treatment are undoubtedly those of the chronic infective type. A history of early septic infection is frequent—e g. umbilical sepsis. ' pemphigus neonatorum " or other skin rashes. The infants are very wasted look toxic, and fail to improve steadily although carefully fed and tended The stools are generally greenish, slimy. and curdy They show the most marked reaction to the benzidine test for blood. The smear preparation stained by the Gram method shows a mixed flora in which usually the Gram-positive organisms, cocci and bacilli predominate If the child is benefiting by lactic acid milk-feeding the stools become pasty and smooth, only a faint reaction is given to the benzidine test and the character of the Gram film changes becoming more negative in appearance. As soon as the child appears well enough simple milk mixtures are gradually substituted for the lactic acid mixtures. No child has been sent home on soured milk. Acidified skim milk (hand-skimmed by removing ¼ oz of top milk) has been used in the severe cases before trying whole-milk mixtures Dextri-maltose has been preferred to the other sugars as apparently less irritating Quite good results have been obtained in mild cases by using skim milk and dextri-maltose without acidification. but this fails in the more severe types.

Lactic Acid Milk in Other Cases

Infantile eczema is one of the most troublesome ailments, and not less so because it usually occurs in healthy infants Ideal milk and dried milk give fairly good results and are certainly preferable to fresh milk mixtures. but even more promising results have been obtained from lactic acid milk in several cases. for example :—

Case S P., aged 8 months Weight 19 lb Covered with eczematous rash. Whole body involved. Diet. Milk, rusks, &c. Eosinophilia (8 per cent.) present. Acidified milk, rusks and bread and butter prescribed with a simple calamine lotion for the skin. In three weeks the rash disappeared, and reappeared on giving two feeds daily of ordinary milk. The child was finally sent home on a dried milk mixture with some recurrence of rash.

This method of feeding has not proved beneficial for vomiting infants with fairly normal stools; it has been tried in a number of instances quite unsuccessfully Thickened feeds, whole milk citrated, or rennet milk have given better results.

Conclusions.

1 The infant unless acutely ill, appears capable of secreting sufficient HCl to obtain a pH concentration corresponding fairly constantly to that given by breast milk on any milk mixture ordinarily used. This may be considered the normal pH required. and it appears doubtful whether, as far as gastric digestion is concerned, any benefit is obtained by using acid milk mixtures raising the pH to a higher concentration

2. No benefit has been seen in cases of chronic vomiting apart from enteritis.

3 Lactic acid milk. soured biologically, has a high curative value in chronic enteritis, whether this is due (*a*) to the replacement of pathogenic by harmless organisms: (*b*) to the greater acidity of the duodenal contents, even if existing for a brief period only, stimulating the digestive secretions. and leading to the production of a less irritant end-product with a consequent diminution of inflammatory reaction; (*c*) to both factors taking part, must remain doubtful, but the evidence appears to favour (*c*)

4. The changes produced in milk by souring appear to render it a suitable food in infantile eczema. Possibly it would prove useful in urticarias of a severe type. but the use of soured milk in the average home is fraught with danger from pathogenic contaminations

---

SUSSEX PROVIDENT SCHEME.—This scheme was affected by the industrial disturbance, but a temporary falling-off in subscriptions has been followed by remarkable recovery During the first half of the year a total of £3462 was paid to coöperating hospitals for services rendered. This includes £1880 to the Royal Sussex County Hospital.

CANCER CAMPAIGN IN MANCHESTER.—The Manchester committee proposes further investigation into the origin and prevention of mule-spinner's cancer Dr. C. C. Twort. who has been appointed pathologist to the committee, will carry out this work at the University being assisted by a chemist and other specialists The after-histories of patients treated at the Royal Infirmary and the Christie Hospital are being carefully examined. A special sub-committee has been appointed to issue information to the public on the incidence and treatment of cancer and the Manchester Insurance Committee has sent a subscription for the furtherance of its work. From Oct. 1st onwards a series of 12 lectures on various aspects of the cancer problem will be given by medical men in connexion with a post-graduate course at the Manchester Royal Infirmary and the University

INTRA-UTERINE INJECTION OF PURE GLYCERINE.

AN EXPERIMENTAL INQUIRY INTO THE BACTERIOLOGICAL BASIS FOR THE LOCAL TREATMENT OF PUERPERAL SEPSIS AND ALLIED CONDITIONS BY THIS MEANS

By ARTHUR COMPTON, D Sc, M D N U I,
SURGICAL UNIT, ST MARY'S HOSPITAL MEDICAL SCHOOL, LATE OF THE PASTEUR INSTITUTE, PARIS, EX-CHIEF OF LABORATORY, AMERICAN HOSPITAL OF PARIS

Glycerine has found many practical applications in medicine The striking work of Remington Hobbs [1] and the noteworthy clinical results obtained by him and his co-workers,[2] from the assiduous practice during the past few years of intra-uterine injections of pure glycerine for the treatment of septic conditions of the uterus and its appendages, bid fair to constitute for it an application of the most dramatic and far-reaching importance The beneficent action of the glycerine is attributed by Hobbs mainly to its physical action as a lymphagogue, setting up a drainage of the tissues which results in a washing away of offending bacteria from the surface and the deeper parts of the inflamed region

We think, however, that its action goes further than this, no account being taken in this explanation of any direct action of the glycerine on the bacteria themselves Yet a considerable independent literature exists in regard to the latter It is the author's object in the present paper to call attention to some of this work, to give at the same time an account of a few experiments carried out on the action of glycerine on certain pathogenic types of bacteria met with in the female genito-urinary tract, and to consider to a limited extent the action of glycerine on tissue cells It is hoped thereby to contribute to a more complete understanding of the action of glycerine in inflammatory phenomena, more particularly in connexion with this gynæcological problem

Action of Glycerine on Bacteria.

Nutritive Properties and Stimulating Effect on Bacterial Growth —It is well known that glycerine when incorporated in artificial culture media in proportions of about 1 per cent can be utilised by many bacteria for their own particular needs and functions How the glycerine is utilised depends in a special way upon the bacterial species Thus *yeasts*, according to Duclaux,[3] burn glycerine totally, with the transitory production of oxalic acid, which in its turn is used up by the growing yeast. Another bacterial transformation of glycerine is into dioxyacetone by oxidation, established by the work of Bertrand [4] with *B sorbose* A number of organisms studied by Castellani [5] ferment glycerine with the production of acid and gas, notably *B coli*, *B columbensis*, and *B asiaticus* Another interesting bacterial transformation of glycerine is into acrolein, by dehydration, due to an organism found in drinking-water by Voisenet[6], to which microbe he gave the name of *B amaracrylus* Again, glycerine is known to stimulate the growth of certain microbes Nocard and Roux [7] first pointed out that heavier cultures of the tubercle bacillus were obtained in broth when glycerine was present, in proportions varying between 2 and 8 per cent

Restraining Action on Bacterial Growth —In stronger concentrations in culture media the glycerine is found to act as a deterrent to bacterial growth

In order to establish the nature of this arrest of microbial development, whether antiseptic (simple inhibition of growth) or bactericidal (killing of the bacteria) experiments were performed which showed that direct contact with glycerine up to 50 per cent failed to kill *B coli*, the organism retaining its vitality for several days, although unable to multiply, or at least not doing so Further, it was found that this organism supported contact even with pure glycerine for at least two hours This indicates that the action of the glycerine is primarily an antiseptic one, and only in extreme conditions does it become disinfectant or bactericidal Bactericidal effects, as concerns *B coli*, only come into play when the organisms remain in contact with pure glycerine for a period somewhere beyond two hours, it is doubtful whether such conditions of concentration and time have ever been realised when glycerine is brought into contact with bacteria in the tissues, as in the intra-uterine injection technique

D'Herelle,[8] in a study of the organisms of dysentery and typhoid fever (*B shiga* and *B typhosus*) reports findings of a like nature He infers from his experiments that glycerine in strong doses inhibits the culture of ordinary bacteria, the inhibition being of a hindering nature rather than a bactericidal one

The time that bacteria could retain their vitality in pure glycerine was then investigated and six micro organismal types met with in the vagina were studied *B coli*, *B cutis communis*, enterococcus, gonococcus, staphylococcus, and streptococcus

Experiment —Pure cultures of these organisms were heavily inoculated into pure glycerine, and at two hourly intervals subcultures were made either on to agar slopes or into glucose broth The glycerine suspensions were well agitated after each withdrawal, that the reagent might act to fullest advantage throughout the duration of the experiment Table I sets out the results obtained

This experiment shows clearly that different organisms possess different degrees of vital resistance to prolonged contact with pure glycerine, some being more fragile than others

The principle here involved has long been utilised to practical advantage by bacteriologists, although the author is unaware of any exact study, such as the above, determining these time limits—as, for instance, in the well-known use of glycerine for the purification and preservation of certain of the ultramicroscopic viruses (vaccinia, rabies, and poliomyelitis) A recent application of the same principle is C C Twort's [9] useful method for the isolation of *B tuberculosis* from contaminating organisms in sputum

The time limits of the antiseptic and the bactericidal response of the bacteria dealt with in Table I towards pure glycerine is seen thus to be as given in Table II

These findings show how feeble is the purely bactericidal action exerted by glycerine on bacterial cells For practical application they emphasise how

TABLE I

—	Growth on subculture, after contact with pure glycerine, in hours																	
	72	60	48	40	36	24	18	15	12	10	8	6	4	2	1	½	¼	Few mins
Enterococcus	−	−	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
B cutis communis	−	−	−	−	−	−	−	+	+	+	+	+	+	+	+	+	+	+
B coli	−	−	−	−	−	−	−	−	+	+	+	+	+	+	+	+	+	+
Staphylococcus	−	−	−	−	−	−	−	−	+	+	+	+	+	+	+	+	+	+
Streptococcus—																		
S hæmolyticus (strain 1)	−	−	−	−	−	−	−	−	−	−	−	+	+	+	+	+	+	+
„ („ 2)	−	−	−	−	−	−	−	−	−	−	−	−	+	+	+	+	+	+
S salivarius	−	−	−	−	−	−	−	−	−	−	−	−	+	+	+	+	+	+
Gonococcus	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	?	+	+

---

[1] Proc. Roy Soc Med, 1924, xvii, 73–86 B M J, 1925, p 1172

[2] Phillips, H J Proc Roy Soc Med, 1926, xix., 26–31

[3] Encyclopédie Chim, 1883, ix. 220

[4] Thèse Doct Sc, Paris, 1904

[5] J A M A, 1926, lxxxvi, 524

[6] C R. Acad Sciences, 1914, clviii, 195 and 734

[7] See Bezançon Précis de Microbiologie Clinique, Paris, 1920, p 532

[8] Le Bactériophage Paris 1921, p 39

[9] The Lancet, 1922, ii, 1221

extended is the antiseptic, and how limited the bactericidal range of its action

Of special interest is the noteworthy fact about the power of glycerine to deal with the streptococcus—the organism whose proliferation and activity in the uterus and the lacerated vagina it is above all essential to curb in puerperal infections Next to the gonococcus it is the most fragile of the organisms studied in vital resistance to contact with glycerine It is a comparatively early victim to the bactericidal effects of the glycerine, but long before that stage is reached the antiseptic powers of the glycerine are at work restraining growth This latter action is practically the only one available in the time interval available when concentrated glycerine is injected into the uterus for the reduction of inflammation To such a degree, then, it is possible to affirm that glycerine acts as an antiseptic when used as intra-uterine injections for arresting secondary hæmorrhage in the puerperium, and the clearing up of inflammatory discharges from that viscus

Table II

—	Glycerine contact to elicit—	
	Antiseptic response	Bactericidal response
Enterococcus	Up to 48 hours	Beyond 60 hours
B cutis communis	" 15 "	" 18 "
B coli	" 12 "	" 15 "
Staphylococcus	" 12 "	" 15 "
Streptococcus	" 6 "	" 8 "
Gonococcus	" ½ an hour	" 1 hour

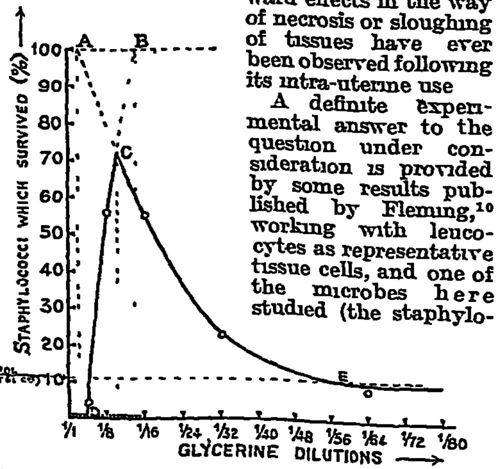
Action of Glycerine on Tissue Cells

The problem which now arises for consideration is the degree of toxicity of glycerine for tissue cells in relation to its toxicity for bacteria, whether there is a sufficient difference between these two toxicities in favour of the tissue cells to warrant the glycerine being pushed to its extreme degree as an antiseptic and bactericidal agent, as is obviously attempted when pure glycerine is injected into the uterine cavity.

The mildly irritant effects of glycerine when applied to surface epithelium—due to its abstraction of fluid from the cells—are well known But no untoward effects in the way of necrosis or sloughing of tissues have ever been observed following its intra-uterine use

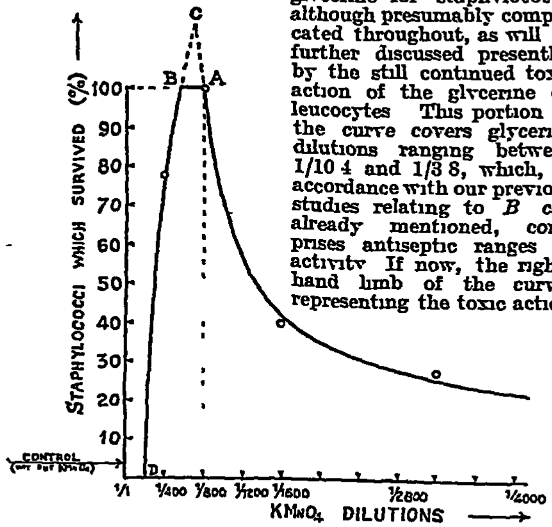
A definite experimental answer to the question under consideration is provided by some results published by Fleming,[10] working with leucocytes as representative tissue cells, and one of the microbes here studied (the staphylococcus) This author cultivated the staphylococcus in "slide cells" containing defibrinated blood and different strengths of glycerine, and after incubation at 37° C for one, two, or more days enumerated the number of colonies which developed In Fig 1 are shown the series of readings obtained by him plotted as a curve, with dilution of glycerine as abscissæ and percentage of microbes which survived as ordinates

Fig 1



This curve, when read from right to left, is seen to begin as a horizontal line corresponding to glycerine concentrations too feeble to exert any influence either upon leucocytes or bacteria (the "indifferent zone" of Fleming); it then slowly ascends towards the left, portraying the toxic effect of increasing glycerine concentrations on leucocytes, here the glycerine is primarily attacking leucocytes, interfering with their bactericidal power, and allowing the implanted staphylococci to grow out The curve next passes by a maximum,[11] in or about the glycerine dilution of 1/10 4, after which it rapidly descends This rapid descent on the left is primarily an expression of the toxicity of glycerine for staphylococci, although presumably complicated throughout, as will be further discussed presently, by the still continued toxic action of the glycerine on leucocytes This portion of the curve covers glycerine dilutions ranging between 1/10 4 and 1/3 8, which, in accordance with our previous studies relating to *B coli* already mentioned, comprises antiseptic ranges of activity If now, the right-hand limb of the curve, representing the toxic action of the glycerine on leucocytes be continued upwards to meet the 100 per cent, or total implant, line, as is indicated by the portion C A in the diagram, we obtain a point A which theoretically should represent the dilution of glycerine at which the activity of leucocytes would be so completely eliminated that all the staphylococci implanted would grow out, were it not for the antiseptic action, already begun, of the glycerine on the bacteria themselves

Fig. 2



It will be remarked in passing that the dilution at which antiseptic action begins is presumably given by the point B, obtained by prolonging upwards the left limb of the curve until it meets the total implant line; at this dilution all the bacteria implanted would grow out were it not for the bactericidal action of the leucocytes, a mechanism which as yet is far from being totally paralysed

Now, on this reasoning and interpretation of Fleming's experiment, it will be evident that the answer to the question put forward at the commencement of this section—namely, the relative toxicity of glycerine for tissue cells and for bacteria—will be given by a consideration of the position of the point A in relation to the point D, where the curve of action meets the zero line At D no staphylococci can survive; at A no leucocytes, or the bactericidal power of the blood which they represent, can survive The point A is found thus by interpolation to correspond to a glycerine dilution of approximately 1/2 4 (or a glycerine concentration of 41 7 per cent), the point D to a dilution of approximately 1/3 8 (or a glycerine concentration of 26 3 per cent) This means, then, that the leucocytes, as typical tissue cells, when pushed to it, can support a much higher concentration of glycerine (actually approximately 15 per cent more) than can staphylococci; and bacteriologically these latter are usually considered to be a fairly resistant type of micro-organism This conclusion is reached in spite of the fact that the attack on leucocytes by glycerine begins earlier, at the point marked E on the diagram, than does the attack on staphylococci, at the point B

---

[10] Proc Roy Soc., 1924, B 96, 171–180

[11] This maximum on the curve of activity, it will be evident, is not a true maximum in the mathematical sense of being a balance point between two opposing forces It would appear, as indicated, to be simply the point of intersection of two curved lines, and if it is to be defined at all it might be called the *maximum freedom from restraint point of the bacteria* under the conditions of the experiment

Thus it is seen that it is the end-points A and D which ultimately count in judging the value of an antiseptic by this particular experimental method, the author is of opinion that this is an aspect of the question which has hitherto not received adequate attention Finally, let us consider briefly, for the sake of comparison, the story which potassium permanganate yields when interpreted graphically in like fashion

Fig 2 gives the curve for $KMnO_4$ which follows from the experimental data furnished by Fleming The curve in this case rises to the 100 per cent line, so that the point A, instead of being imaginary as in the case of glycerine (Fig 1), is real Next the curve appears to pass through a flat region, A B—covering $KMnO_4$ dilutions which would allow all the staphylococci implanted to grow out—to fall from B to the zero at D

This zone (A B), which it remains for future investigation to confirm experimentally, is a new type of "indifferent zone," and to distinguish it from that described by Fleming it might be called a *bacterial indifferent zone*, the indifferent zone of that author being a *leucocytic indifferent zone*[12]

Here, also, the point B is real, although there is some little difficulty in fixing it exactly from the data available, no observations having been recorded for antiseptic dilutions lower than 1/400 Still, in view of the reading recorded for 1/400 there is good reason to suppose that the representation of the left limb of the curve is approximately that portrayed In any case, and this is the important feature of the curve, it shows that the attack on leucocytes is over and finished with (the point A) long before even the antiseptic action has been begun (the point B), and still longer before the antiseptic action can be complete (the point D)

This establishes the fact that potassium permanganate possesses a markedly greater paralysing effect on the tissue cells of blood than on a typically resistant microbe, like the staphylococcus As an antiseptic, then, it is certain to do more harm than good, unless the organism to be combated is one much more fragile than the staphylococcus And this analysis of the activity of potassium permanganate merely serves to bring out in greater relief the vast superiority of glycerine for antiseptic and surgical use, when dealing with an organism like the staphylococcus

General Conclusion and Summary

That the bacteriological basis for the treatment of puerperal sepsis and allied conditions by the intra-uterine use of glycerine, as conceived by Hobbs, is well founded is borne out by an analysis of the behaviour of tissue cells and bacteria to this reagent

In a study of the former—from data published by Fleming, based on an ingenious application of the "slide cell" technique of Wright—we have been able to show that glycerine is an ideal antiseptic in the sense of being less fundamentally toxic for leucocytes, as representative tissue cells, than for typically resistant bacteria like the staphylococcus Incidentally, in this connexion, we have indicated how it is possible by the use of a graphic method of presentation of slide cell results to define more completely the theoretical terms of an antiseptic As examples of two fundamentally different types of cyto-bacterial activity curves, those for glycerine and potassium permanganate are figured

A new antiseptic characteristic is indicated, the *bacterial indifferent zone of cyto-bacterial activity*, which —being present in the case of antiseptics possessing greater toxicity for tissue cells than for bacteria, and absent in the case of antiseptics possessing greater toxicity for bacteria than for tissue cells—affords a criterion for the selection of useful antiseptics and the rejection of those likely to do more harm than good.

In a study of the direct action of glycerine on various bacterial types met with in the genito-urinary tract it is established that pure glycerine is but feebly bactericidal in comparison with its markedly antiseptic character The time limits of its bactericidal and of its antiseptic responses to a number of bacteria are indicated The streptococcus is seen to succumb comparatively early to the bactericidal action of glycerine

The new facts brought to light make glycerine one of the most interesting and ideal antiseptics, and indicate for it a sphere of even greater usefulness in the treatment of inflammatory conditions

---

[12] These zones distinguish themselves from each other in that for dilutions of the antiseptic corresponding to the "bacterial indifferent zone" the bacteria are indifferent to the presence of the antiseptic as concerns toxic effects, while, in the "leucocytic indifferent zone," it is the leucocytes which show indifference to the presence of the antiseptic Again, in the matter of bacterial growth, in the "leucocytic indifferent zone" the leucocytes are able to inhibit bacterial growth to the extent of the control without glycerine, while in the "bacterial indifferent zone" the bactericidal function of leucocytes being lost, they are powerless to restrain growth, and the bacteria all grow out, until the antiseptic dilution is reached at which toxicity for bacteria comes into play

---

THE
ACTION OF LIGHT ON COD-LIVER OIL.

By P R PEACOCK, M B, B S Lond,
VAUGHAN MORGAN SCHOLAR AND MARGARET BUTCHER SCHOLAR, MIDDLESEX HOSPITAL.

In January, 1925, during the examination of many oils and fats under ultra-violet illumination, it was noticed that cod-liver oil was very brightly fluorescent The sample of oil stood, in a 100 c cm round glass flask plugged with cotton-wool, on the laboratory bench, untouched from January to June of last year, when I again had occasion to examine the fluorescence of the oil The second examination showed that the oil had completely lost its fluorescence, though by ordinary light it appeared unchanged

The following explanations of this phenomenon seemed to be possible (1) That the oil had reacted with atmospheric gases leading to oxidation (2) That the effect was due to variations in temperature (3) That the effect was due to absorption by the oil of heat, light, or ultra-violet radiations

Confirmatory Experiments

June 3rd, 1925 Two samples of very brightly fluorescent cod-liver oil were sealed in soft glass tubing of 6 mm. bore and 1 mm wall thickness One tube was covered with rubber tubing to exclude light and ultra-violet rays, and both tubes were then set side by side in the sun's rays Daily examination revealed complete loss of fluorescence in the uncovered sample on the fifth day The control was still brightly fluorescent

June 12th Four tubes similar to those used in previous experiment were half filled with fluorescent cod-liver oil. Two were sealed in air, two in vacuo (Sprengel pump) One tube containing air and one vacuum tube were covered with thin black paper to exclude light and the four tubes were then set on the hospital roof for irradiation Both uncovered tubes had lost their fluorescence after approximately ten hours' sunshine, the controls remaining unaffected

The above experiments suggested that the effect was not a simple oxidation due to contact with the air or to the presence of dissolved oxygen in the oil The conditions as regards temperature were the same for the controls, so that this factor is eliminated We are left with the possibility of the effect being due to light or "near" ultra-violet rays (up to 3100 A U.), the "far" ultra-violet being excluded by the glass

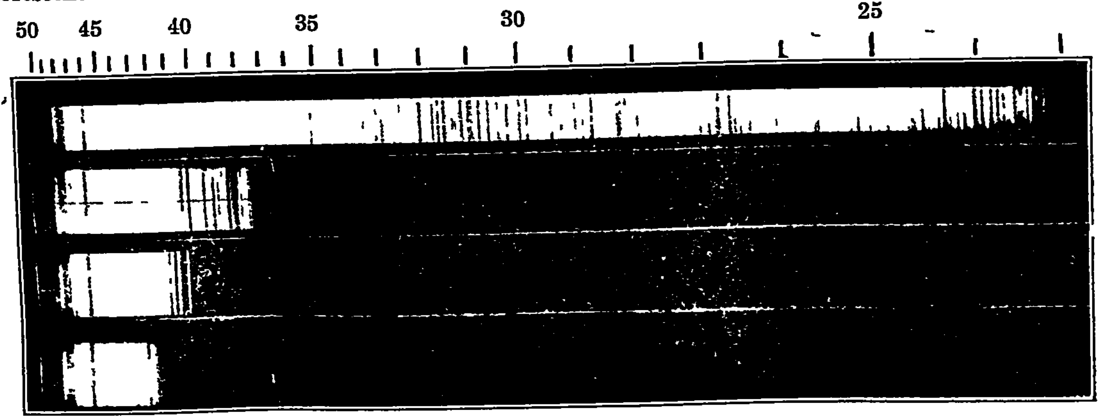
During the last year this phenomenon of the destruction of fluorescence in cod-liver oil by exposure to light has been repeated so often and under such varying conditions that it is probably a constant effect. For the sake of brevity, the term "delumination" was coined to signify the loss of fluorescence described above In addition to sunlight, "delumination" has been produced by the tungsten-cored carbon arc, the mercury-vapour lamp, and a fullolite gas-filled lamp The times required range from ten hours in brilliant summer sunshine to five days under the metal filament lamp at a distance of 5 cm

It appears that a certain critical intensity of light is required to upset the equilibrium of the oil and initiate the process of "delumination," for, in the winter, the effect is not observed in samples of oil which have been exposed for several months to daylight Deluminated oil, stored for many months in the dark, recovers some of its fluorescence, but, within the period of these experiments, none has regained its original brilliance

Vitamin Content

One of the first questions that suggests itself is "Has the phenomenon of delumination any relation to the vitamin content of the oil ?"

Vitamin A. The presence of this vitamin is easily tested, thanks to the work of Dr O Rosenheim and Prof J C Drummond,[1] whose colour reaction for vitamin A corresponds accurately with the results of animal tests The addition of ½ c cm of arsenic chloride to a drop of cod-liver oil in a small tube gives, in the presence of vitamin A, a blue colour which fades in a few minutes on standing Samples of fluorescent and of deluminated oil were tested by this means, normal cod-liver oil gave the reaction strongly, deluminated oil gave a completely negative reaction The effect has been repeatedly demonstrated and can be regarded as constant for deluminated oil



I Emission spectrum of condensed iron spark
II Absorption spectrum of deluminated cod-liver oil
III Absorption spectrum of cod-liver oil in which the vitamin A has been destroyed by sunlight.
IV Absorption spectrum of normal cod liver oil

It was necessary to investigate in detail the relationship between the delumination of cod-liver oil and the destruction of its vitamin-A content, and a description of the methods employed to solve this problem may be given at this point

The oil used was a well-known proprietary brand of Newfoundland cod-liver oil, which is very constant as regards specific gravity, colour, odour, fluorescence, absorption spectrum, and vitamin-A reaction, and is tested biologically for fat soluble vitamins before being supplied to the public This oil is supplied in brown glass bottles, which incidentally protect it from the effects of light

The oil to be examined was first drawn into soft glass tubing of 7 mm bore and 0 5 mm wall thickness, which was then sealed The tube of oil was then placed vertically in front of the slit of a quartz spectrograph (A. Hilger, size C) and the absorption spectrum of the oil was photographed The source of light used was a condensed iron spark giving a very uniform distribution of closely packed lines extending far into the ultra-violet region The absorption of the glass may be neglected as it is less than that of the contained oil (see figure) The tube was then unsealed and the oil, after being re-tested for vitamin A and found to be strongly positive, was drawn into fine capillary glass tubes of 1 to 2 mm bore and less than ½ mm. wall thickness These tubes were sealed and set in a row in the sunlight

Frequent tests were made for vitamin A until the reaction was faintly positive, when each tube was tested repeatedly until a negative reaction was obtained, the tube being then put in the dark to prevent further delumination of the oil Sufficient oil was thus obtained for absorption spectra to be taken under the same conditions as for normal cod-liver oil, as described above

Comparison of the absorption spectra shows at once that the destruction of vitamin A corresponds with an increase in the transmission spectrum, the limit for normal cod-liver oil being 4100 A U, that for the oil in which vitamin A has just been destroyed being 3900 A U Both samples of oil are still fluorescent, but the irradiated sample is definitely less brilliant than the control sample of normal oil

From these experiments it is evident that "delumination" and destruction of vitamin A, though parallel, are not identical phenomena, as further delumination can be obtained after destruction of vitamin A is complete In further support of this view is the fact that fully deluminated oil after nearly a year in darkness recovers much of its fluorescence but still fails to give the colour test for vitamin A This latter observation shows that we are dealing with a complex reaction which is apparently partly reversible

At a meeting of the Physiological Society held at Cambridge on June 5th a demonstration of the action of light on cod-liver oil was given by the writer, in collaboration with Dr S Wright,[2] when the results of preliminary animal experiments were put before the meeting

Rats fed on a basal diet deficient in vitamin A were protected from xerophthalmia and continued to put on weight when 2 per cent normal cod-liver oil was added to the diet

Similar animals on the same basal diet, to which 2 per cent deluminated oil was added in place of the normal oil, developed marked xerophthalmia and began to lose weight

Substitution of normal for deluminated oil in the diet caused a rapid recovery in these animals

These results are in complete accord with the foregoing experiments and appear to confirm the destruction of vitamin A in cod-liver oil by exposure to sunlight

Vitamin D By the courtesy of Prof C J Martin, of the Lister Institute, I was able to examine under the ultra-violet rays samples of cod-liver oil of known degrees of antirachitic potency There seemed to be no association between the fluorescence and the antirachitic value of the various oils and extracts Samples of inactive cotton-seed oil showed no difference from similar oil which had been rendered actively antirachitic by exposure to ultra-violet rays It was thought from these observations that there was no evidence to suggest destruction of the antirachitic vitamin in cod-liver oil by sunlight

Summary

Exposure of normal cod-liver oil to any source of white light of sufficient intensity results in the following changes (1) The normal bright golden fluorescence of the oil progressively disappears, this effect being termed "delumination" (2) Before full "delumination" occurs the oil fails to give the arsenic chloride test for vitamin A (3) Fully "deluminated" oil, when kept for some months in the dark, slowly regains much of its fluorescence, but the vitamin A appears to be permanently destroyed (4) There is a change in the absorption spectrum corresponding with change in the fluorescence of the oil As "delumination" proceeds, so the transmission spectrum extends into the ultra-violet region, as fluorescence returns there is a proportionate return of the absorption spectrum

---

[1] O Rosenheim and J C Drummond Biochemical Journal, 1925, vol xix, No 5

[2] P R Peacock and S Wright Proceedings of the Physiological Society, June 5th, 1926, p 36

This paper has a double object, first, to emphasise the fact that light is a variable factor which must be taken into account in all quantitative experiments concerning the growth-promoting properties of cod-liver oil and the manner in which such oil is stored, secondly, to call attention to the unusual nature of the complex reaction of cod-liver oil to light, a reaction which is only partly reversible

Clinical and Laboratory Notes.

TONIC SPASM OF THE EYES IN CONJUGATE DEVIATION

By Mary R Barkas, M D Lond, D P M.,
ASSISTANT MEDICAL OFFICER, MAUDSLEY HOSPITAL

The emotional instability of some cases showing disorders of the basal ganglia has led frequently to their being regarded as hysterical, and this view has very naturally been taken of the symptom I am about to describe This is the spasmodic conjugate deviation of the eyes upwards, usually to one side, accompanied by subjective distress and acute depressions

Three Cases

The first case in which this symptom was noticed was one of progressive lenticular degeneration, the patient had been recommended for admission as hysterical, but when seen was recognised to be suffering from an organic disease of the Parkinson type She was childish and emotional, subject to spasmodic laughing and crying, and began to complain that her "eyes got fixed,' this being associated with great distress At first this occurred rarely and lasted for only a few moments, but it has become more frequent and the attacks will last for any time up to about an hour She can always move the eyes voluntarily, but this requires an effort, and they return when the effort is relaxed to the fixed position of conjugate deviation upwards and to the left There is no nystagmus at any time in this patient and she has never had diplopia Visual fields are normal

The second case was sent from an infirmary, where she had been taken on account of threats of suicide, as she was depressed about the 'fixing' of her eyes and thought this made her conspicuous This had been her first symptom, beginning about a year ago, and she had noticed that emotional stress, such as anxiety about her husband, brought on the attacks In these her eyes move up and to the left, become fixed, can be brought down by volitional effort, but soon return to the position of spasm There is nystagmus on looking to the right, and she has had diplopia when reading, possibly due to refractive error and neglect to wear her glasses Visual fields are normal Later she developed spasmodic torticollis, independent of the eye symptom, and weakness and tremor of the right arm of the Parkinson type She denies having ever seen anyone previously with similar symptoms

The third case was a young man who complained that his eyes turned up and became fixed on Mondays he was a bank clerk Further investigation showed ankle-clonus on one side, and a history of encephalitis lethargica was elicited, with transient diplopia The eye symptom was associated with depression.

Comment

Since seeing these cases reference to the literature has discovered a paper by Marinesco and Radovici[1] in which the conjugate deviation of the head and eyes in paroxysmal hypertonic attacks is described in three cases of post-encephalitic Parkinsonism, they suggest that these are due to some factor in the basal ganglia which is either not functioning normally or is not controlled normally by the cortex In our cases the deviation of the eyes occurs alone, the head remaining in the flexed Parkinson posture in one case, while in the other a spasmodic torticollis occurs, but at separate times and under different circumstances from the eye symptom Since the symptom is of a kind likely to be disregarded or considered hysterical, it seems worth while to draw attention to it as being, in some cases at least, an early manifestation of a serious and progressive organic disease Its constant association with spasmodic attacks of depression or weeping affords further evidence of the close relation between the basal ganglia and the emotions, and tempts one to speculate as to a possible organic basis through which the emotions may produce physical manifestations in hysteria

I wish to thank Dr E Mapother, the medical superintendent of the Maudsley Hospital, for his permission to refer to these cases, who have been in-patients of the hospital He also informs me that he has met with a similar case in his practice where the same eye symptoms were associated with choreiform movements in a post-encephalitic case

---

[1] Revue Neurologique, February, 1926

NOTES ON AN OUTBREAK OF INFANTILE DIARRHŒA ASSOCIATED WITH A PARASITIC FUNGUS

By H A Cookson, M B, Ch B, F R C S Edin, D P H Camb
PATHOLOGIST, ROYAL INFIRMARY, SUNDERLAND, BACTERIOLOGIST, SUNDERLAND HEALTH AUTHORITY,
AND
E Thorp, O B E, L R C S Edin, D P H Belf,
TEMPORARY MEDICAL OFFICER OF HEALTH, HEALTH DEPARTMENT, SUNDERLAND

For the past two years we have been meeting with many cases of diarrhœa in young children, which have caused an abnormal death-rate from that disease The symptoms are the usual ones of many stools—blood being frequently present, quick loss of weight, and vomiting Two types appeared to exist—a very acute type and a four-week type From time to time one of us (H A C) examined the stools and sera of cases for members of the enteric, dysentery, and other groups of organisms associated with the incidence of diarrhœa among young children It was next observed that children who suffered from stomatitis appeared also at a later period to suffer from diarrhœa As the diarrhœa remained prevalent and the death-rate unduly high it was definitely decided to attack the disease more systematically

One of us (E T) was concerned with the clinical and hygienic aspects of the investigation and stools were obtained from acutely ill children for bacteriological examinations, and in one instance also serum from a convalescent was fully investigated It had been noted that if the children were removed to hospital on the first or second day, and inter alia careful attention given to the toilet of the mouth speedy recovery took place The bacteriological examination, a summary of which is appended, would appear to incriminate *Oïdium albicans* as the causal organism, for whereas it appears in debilitated adults as a more or less harmless parasite, in children it without doubt produces diarrhœa Acting on this possibility lectures were instituted to be given by the health visitors on cleanliness of the mouth and the rigid treatment of all lesions due to thrush and the look-out to be kept for such conditions This has effected a remarkable improvement in the returns, it would therefore appear very advisable in all cases of diarrhœa amongst young children to examine with care the mouth for thrush or ulcerative stomatitis and to treat if necessary

Ten stools were examined microscopically and bacteriologically, of these seven showed mycelium and spores of *Oïdium albicans*, no member of the enteric or dysentery group was found, and the stools had no other micro-organismal factor in common other than the oïdium The serum of a convalescent patient was tried for agglutinins against a large range of members of the typhoid-colon group No such agglutinins were demonstrated

BRITISH MEDICAL ASSOCIATION

ANNUAL MEETING AT NOTTINGHAM

(Continued from p 289)

SECTION OF ANÆSTHETICS

WEDNESDAY, JULY 21ST

THE first session of this Section was opened by the President, Dr SAMUEL JOHNSTON (Toronto), who reviewed the benefits of anæsthesia and discussed its future It was essential, he said, that anæsthetists should be well grounded in basic sciences such as physics, chemistry, and pharmacology, and, where practicable, technique should be learnt on animals The ideal ought to be that every qualified man should be able to give a safe, efficient, and pleasant anæsthesia in cases of labour and minor surgery A certain number of more highly qualified anæsthetists should be available for the hospital work of the smaller towns and these should hold positions comparable to those of staff anæsthetists in the teaching hospitals The three groups of anæsthetists all had their special functions, but on the last named particularly devolved the onus of developing the art Some idea of the progress achieved in 25 years could be gained by considering the growth of the anæsthesia department of the Toronto General Hospital, which now consisted of a chief and eight assistants, all of them specialists It was not too much to hope that in the near future a chair of anæsthesia would be established in every university where medicine is taught There was no doubt that the routine use of the uniform anæsthesia record charts issued by the International Anæsthesia Research Society would prevent a large number of fatalities These charts require the following essentials (1) evaluation of risk and determination of pre-operative treatment, (2) five-minute blood-pressure records to enable anti-shock treatment to be instituted promptly, and (3) determination of post-operative treatment The Society was at present concentrating on the production of a more elaborate teaching anæsthetic chart

Development in anæsthesia was proceeding apace, as was evident from reports of new general and local anæsthetics A uniform standard of purity was very desirable, and a committee of investigation had already been formed by the British Medical Research Council and the Anæsthetic Section of the Royal Society of Medicine New inventions must be made public in strict accordance with medical ethics, and the royalties accruing should be devoted to further research In all these efforts the patient's point of view must remain paramount, and anæsthetists would do well to appropriate the motto of the Pacific Coast Association, " It is God-like to relieve pain," and that of the Canadian Society, " We safeguard those who sleep "

Dr WESLEY BOURNE (Montreal) read a paper on the Effect of Some Impurities in Ether on Respiration and Blood Pressure He showed lantern slides which demonstrated that acetaldehyde, ether peroxide, and ethyl sulphide all caused a lowered blood pressure and respiratory embarrassment in a dilution of 1 per cent in ether Ethyl mercaptan in an infinitesimal proportion caused a most nauseating odour, but all the ketones tried—acetone, dimethyl ketone, and methyl ethyl ketone—appeared to exert no deleterious influence even up to a concentration of 5 per cent

Dr R E APPERLY (London) said that in spite of Dr Bourne's investigations, he thought that the minute traces of aldehydes in ether had a prejudicial effect upon recovery.

Dr H M COHEN (Manchester) read a paper on journals dealing with anæsthesia, from the publication of Morton's Circular in 1847 down to the present day, and emphasised their value to practitioners and to research

Dr C W. MOOTS (Toledo, Ohio) read a paper on Coöperation with the Surgeons, in which he dealt first with the importance of post-graduate teaching in anæsthetics It was very desirable, he said, that surgeons should understand the theory of anæsthesia so as to be able to coöperate with anæsthetists by the use of a technique minimising shock and enabling the smallest possible dose of anæsthetic to be employed. He emphasised the importance of keeping blood-pressure charts, and said that in his opinion the best index of a patient's condition was the pressure ratio —i e , the fraction: $\frac{\text{pulse pressure}}{\text{diastolic pressure}}$ This should remain between 70 and 30 per cent , otherwise the operative risk was extremely bad

Dr F H MCMECHAN (Ohio) laid stress on the necessity for preventing needless deaths not only on the operating table, but also during the 72 hours that followed operation

The second session was opened by Dr MCMECHAN with a paper on

The Newer Gaseous Anæsthetics

It had been remarked, he said, that an ideal anæsthetic gas should be one which has a sufficient solubility in water to be carried to the central nervous system, which has so high a solubility in lipoids as to lead to its differential accumulation there, and which will leave the body rapidly and unchanged Nitrous oxide had been used for years as an anæsthetic, but its great drawback was that practically the whole of the nitrogen in the body must be displaced. This was attempted clinically by secondary saturation. Recent work on theories of anæsthesia had disclosed electrical changes in anæsthetised animals but these were of theoretical rather than practical importance The metabolic concept of anæsthesia, however, was of great interest, as it supposed that diminished oxidation in lipoid tissue occurs, and that it can be brought about either by oxygen restriction or by partial saturation with lipoid-soluble anæsthetics, such as chloroform and ether These two factors in their turn involved changes in the acid-base equilibrium. It was the duty of an anæsthetist to render these changes as negligible as possible When using any gas anæsthetic it was absolutely essential that it should be perfectly pure The most minute trace of other substances might lead to considerable danger. The relative potency and toxicity of gas anæsthetics might be expressed as follows, ethylene being taken as unity Nitrous oxide, 0 85, ethylene, 1; acetylene, 1 5, propylene, 2 25, butylene, 4 5; amylene, 15 The oxygen-content for an anæsthetic mixture also rose in the same order, being about 10 per cent in the case of nitrous oxide, 12–15 per cent for ethylene, and 30 per cent for acetylene. With propylene, an inert gas such as nitrogen could be used to dilute the mixture and render it non-inflammable, but this mixture was liable to cause circulatory collapse some hours after administration The methane series of gases did not show much promise as anæsthetics The rapid saturation of the body and equally rapid elimination of the gas anæsthetics constituted their chief advantage It had been shown that if gas anæsthetics could be given with oxygen in a pressure chamber under one-sixth of an added atmosphere, the resulting anæsthesia would not only be better but safer than at atmospheric pressure It had also been demonstrated that the gas anæsthetics did not enter into any combination with hæmoglobin, and had less effect upon the hydrogen-ion concentration of the blood and upon carbohydrate metabolism than have ether, chloroform, and ethyl chloride They had less effect on renal function Some observers believed that the gas anæsthetics increased oozing from raw surfaces but it was doubtful whether this action was perceptible On the other hand, they did increase, rather than decrease, uterine contractions, thus behaving in the opposite way to chloroform and ether The blood pressure was maintained far longer than with the older anæsthetics, while their action on the myocardium appeared to be negligible.

Dr. E I McKesson (Toledo) elaborated Dr. McMechan's paper by pointing out the differences in anæsthetic signs between nitrous oxide-oxygen and ethylene-oxygen, drawing the conclusion that ethylene was more depressing and powerful generally than nitrous oxide

Dr J D Goldman pointed out that with nitrous oxide oxygen deficiency was inevitable, with ethylene it could sometimes be avoided, but with acetylene the oxygen content of arterial blood could always be kept within normal limits It was essential, however, that all traces of acetone should be removed from the gas

Dr S R Wilson pointed out that deep hypnosis, trance, and hibernation presented similar phenomena to anæsthesia, and suggested that it might be of value to study these conditions more closely

Thursday, July 22nd

At the third session Dr F W Price (London) opened a discussion on

Anæsthesia in Relation to Cardiovascular Affections

He began by remarking that an opinion on the risk of administering an anæsthetic to a subject with some cardiovascular affection was usually given with some difficulty Speaking generally, it was surprising how well patients with cardiovascular affections took anæsthetics, the exceptions being usually those with chronic myocardial disease The fundamental question was whether the impaired heart and other parts of the cardiovascular system were capable of withstanding the added strain of an operation and anæsthetic In the majority of cases only palpation and auscultation were required to arrive at a decision, sometimes the use of a sphygmograph was helpful, but only occasionally was it necessary to employ a clinical polygraph or the electrocardiograph The rate and rhythm of the heart should always be determined at the cardiac apex because the rate of the radial pulse did not necessarily represent the ventricular rate, and in order to determine the type of irregularity It was often difficult to decide whether tachycardia and bradycardia were physiological or pathological An increase of more than 15 beats per minute when the patient assumed an upright posture was suggestive of vasomotor instability The increase in rate from physical exertion varied greatly, but help might be gained from the presence or absence of accompanying subjective symptoms of cardiac distress The possibilities of atony of the heart muscle from lack of physical exercise and poisoning without structural damage must also be borne in mind The time elapsing before the cardiac rate returned to normal after physical exertion was of greater significance than the degree of increase induced by the exertion Dr Price then described the characteristics of various forms of irregularity of the heart's action, and discussed their significance in prognosis Attention, he said, should be directed to examining the walls of arteries other than the radial before excluding disease, and the size of the heart should be carefully estimated To decide on the importance of a murmur, the patient should always be examined standing up and lying down, before and after gentle exercise, and during the various phases of respiration It should be remembered that a valvular defect was a mechanical impediment to the heart muscle in its work and that there were usually coincident changes in the myocardium, aorta, and coronary arteries In valvular lesions due to previous acute endocarditis, the prognosis was better than when primary chronic endocarditis or syphilis was the cause Sudden death was most likely to occur in fatty and fibroid degeneration of the myocardium, in angina pectoris, in aortic incompetence, and in the sudden closure of the lumen of a coronary artery It was of the greatest importance to ascertain whether a lesion had affected the myocardium, and a guide to this was the heart's response to effort—in other words, the amount of physical exertion which did not cause symptoms of cardiac distress It was of value to inquire whether the patient's normal standard had decreased and, if so, to what extent (Temporary causes such as anæmia and mental strain must be excluded) The usual symptoms of distress were breathlessness, palpitation, fatigue, and precordial pain The last of these might not occur for some hours The pain of angina pectoris was felt most commonly in the retrosternal region, and there might be cerebral symptoms, including giddiness, fainting attacks, and seizures resembling petit mal, and the Adams-Stokes's syndrome Fatalities had occurred during anæsthesia owing to inadequate treatment of the heart condition beforehand—the condition could often be vastly improved by giving digitalis by mouth, or, in urgent cases, by the intravenous injection of strophanthin In choosing an anæsthetic it was important to remember that the symptoms of cardiac failure in mitral disease were mainly respiratory, whilst the symptoms in aortic disease and in fatty degeneration of the myocardium are those of systemic anæmia, here the chief danger was of syncope and anything that lowered the blood pressure should be avoided In arterial disease, aneurysm, and angina pectoris, on the other hand, the blood pressure should not be raised Chloroform should be avoided in heart-block, and intermittent and very light anæsthesia was always undesirable

Dr J Blomfield said that it was remarkable how few fatalities occurred during anæsthesia in patients with cardiac lesions There was hardly any cardiac disease so advanced that it would not permit some form of anæsthesia or analgesia to be employed for an emergency operation In severe cases it was essential that the patient should retain the position for easiest breathing, and there should be no asphyxia Anæsthetics causing least muscular spasm should be employed, an unobstructed airway should be maintained, and oxygen should be given continuously A useful rough test was the length of time a patient could hold a deep inspiration If this was under 30 seconds it would probably be dangerous to give a general anæsthetic Myocardial degeneration without valvular lesions was the bugbear of anæsthetists, and in doubtful cases a cardiologist should be consulted

Dr E. von der Porten said that in his opinion patients with cardiovascular lesions should be kept lightly anæsthetised and a preliminary injection of morphia and atropine should be given

Dr A L Flemming (Bristol) emphasised the importance of a quiet and unhurried induction period.

Dr Mary Botsford (California) said that a consideration of the patient's previous history was important She thought that psychic shock should be avoided and that nitrous oxide-oxygen anæsthesia with preliminary morphia and atropine medication was indicated

Lady Berry (London) laid stress upon the desirability of preliminary rest and administration of digitalis Morphia she considered unsatisfactory, and she usually employed atropine alone, followed by light ether anæsthesia Patients should be talked to as they were going under

Dr Crighton Bramwell (Manchester) said that except in aortic disease, Stokes-Adams's syndrome, and fatty or fibroid degeneration of the myocardium, syncope was generally due to vasomotor instability Bradycardia apart from heart-block was favourable, but pulsus alternans without tachycardia was always of grave import

Dr H W Featherstone (Birmingham) said that extrasystoles frequently disappeared under anæsthesia He disliked using chloroform and spinal anæsthesia as he found that the systolic blood pressure tended to fall more than the diastolic

Dr H P Fairlie (Glasgow) said that it was in the post-operative stage that collapse frequently occurred in cardiac cases

At the fourth session Dr E I McKesson gave a lecture on

Some Physical Factors in the Administration of Gaseous Anæsthetics.

The anæsthetist, he said, altered the gaseous content of the tissues to effect a reduction of oxidation or metabolism in certain nervous tissue without similarly affecting the metabolism of other tissues This was the result of a combination of factors: (1) The solubility of gases in the body fluids (2) The difference in oxygen requirements of the different tissues It had been shown that nervous tissue requires a more liberal supply of oxygen than do other tissues Consequently, at certain tensions of N_2O and O_2 in the body fluids the activity of certain nerve-cells was curtailed while other more stable nerve-cells and those of muscle and other tissues would find sufficient oxygen to carry on their normal functions (3) An absence of chemical change of the anæsthetic gas while in the body. An apparatus for administering gaseous anæsthetics, said Dr McKesson, must exclude air, it must embody a positive control of the gases administered; it must control the pressure of the mixed gases and regulate rebreathing, and it must provide a means of inflating the lungs with oxygen. He showed how his own apparatus fulfilled these conditions

Dr Goldman and Dr Thompson Rowling (Leeds) also gave demonstrations of apparatus, and Dr. S R Wilson gave a lantern lecture on the Evolution of Anæsthesia

A joint discussion on July 23rd with the Section of Surgery on Anæsthesia in Abdominal Surgery has already been reported in The Lancet (August 7th, p 285).

SECTION OF PATHOLOGY AND BACTERIOLOGY.

Thursday, July 22nd

At the first meeting of this Section Prof Sholto Douglas (Sheffield), the President, paid a tribute to the late Sir William Leishman, who was to have presided over the Section and through whose efforts the programme was arranged Those present stood in silence for a moment in honour of the memory of this eminent pathologist

Dr R A O'Brien (Beckenham) opened a discussion on

The Relationship of Streptococci to Scarlet Fever and its Complications

He summarised the grounds for a belief in the existence of such a relationship as being (1) the invariable presence of these organisms in the throat in scarlet fever; (2) the production (by the Drs Dick) of clinical scarlet fever by the introduction of cultures of the organisms into the throats of susceptible individuals; (3) the production of a toxin by the streptococci in question which of itself will produce many symptoms of the disease; (4) the ability of an antitoxic serum produced against this toxin, to abolish the rash of scarlet fever. and (5) the good therapeutic results obtained by treatment of the disease with such serum Proceeding to analyse these data, Dr O'Brien discussed the characters by which the *Streptococcus scarlatinæ* might be identified The question had been found to present the usual difficulties of streptococcus classification Culturally there were no features distinguishing such strains from the *Streptococcus pyogenes* and the most satisfactory method of recognition was by means of the agglutination test which in the hands of experienced workers engaged upon this special variety of research gave fairly reliable results Here, however as in other branches of streptococcus work there was overlapping and the identification of individual cultures was difficult · the streptococci closely related to the scarlatinal group were those of erysipelas Another question awaiting answer was the significance of the various subgroups which serological methods revealed within the main scarlatinal group Did such division correspond to different clinical types of scarlet fever or were all such groups identical in the results produced? The available evidence pointed to the latter suggestion being correct and Dr O'Brien believed that the various subtypes of scarlatinal streptococcus produced one and the same toxin as do the various agglutination types of *B diphtheriæ* The most convincing evidence of the relationship of a given streptococcus to the disease was its power of producing a toxin which gave the specific intradermal reaction (Dick test) and which was neutralised by a scarlet fever antitoxin. Similarly, if an antitoxin made from the toxin of such a streptococcus produced specific blanching of the scarlet fever rash (Schultz-Charlton phenomenon) there was good evidence for assuming a causal connexion of that organism with the disease. An interesting side issue was the determination of the true nature of so-called puerperal scarlet fever, surgical scarlet fever, and allied conditions not of an infectious nature: this problem might be solved by the study of these reactions There remained the question of the mode of action of the organism Is it toxigenic or is its action direct as it is in ordinary septic processes? Dr O'Brien considered that anti-scarlatinal serum, if given early in the disease, gave sufficiently striking results to make it comparable to diphtheria antitoxin, in consequence he believed that scarlet fever, in this stage at all events, was a toxic process

Dr C C Okell (Beckenham) dealt mainly with the technical aspects of agglutination and toxin study in connexion with the streptococci found in scarlet fever The view that these organisms were causal was a satisfactory working hypothesis, but discrepancies were numerous One of the major difficulties in working upon the condition was the lack of any reliable test for the standardisation of toxin and antitoxin At the present time the only practical method was by means of the Dick test, which meant working with human subjects, and here the reaction, although definite and specific, was not quantitative He thought it desirable to carry out standardisation by reference to a known serum rather than to a toxin; such a serum was being prepared in America for the purpose. At the present time toxin neutralisation tests only gave a very rough estimate of the therapeutic efficiency of a serum The Ramon test had been tried for standardisation but had not been found of any value. Laboratory animals were not susceptible to the toxin although readily killed by the living organisms against which an antitoxic serum might or might not protect them Dr Okell's experience of the agglutination test for the identification of the scarlatinal streptococcus agreed in general with the published statements.

Dr K. E Birkhaug (New York) said that in examining 500 cases of scarlet fever in New York he had found the scarlet fever streptococcus in 96 per cent during the first four days of the illness. The organisms had disappeared from the tonsillar crypts by about the tenth day of the disease, at which time the patients' blood contained enough antibodies to yield the Schultz-Charlton phenomenon He had found identical streptococci in non-scarlatinal conditions such as osteomyelitis and tonsillitis Agglutination was an unsatisfactory method of identification on account of the frequency of spontaneous flocculation, the best criterion being the human skin test He had examined the Schultz-Charlton phenomenon by Krogh's method of direct examination of the capillaries and had found that these were dilated to about three times their normal size whilst the rash was present and showed progressive constriction when the blanching serum was injected He agreed with other speakers as to the efficacy of serum treatment.

The President urged the necessity for establishing an adequate pathological service in connexion with the isolation hospitals of this country. Usually the pathological work was left to persons quite unfitted to do it and an enormous amount of valuable material was not investigated

Prof W J. TULLOCH (St Andrews) compared the subgroups of the *Streptococcus scarlatinæ* group with those of tetanus Agglutination differences did not mean differences in the variety of toxin produced He suggested that the delicacy of the Ramon test for antitoxin estimation depended upon the ions in play and that by studying this factor a usuable modification might be devised

Dr PAGE SUTHERLAND (Manchester) spoke of the routine use of the Schick and Dick tests at Monsall Hospital valuable information as to the chance of cross infection was obtained and the latter test was found useful in confirming the diagnosis The susceptibility of members of the nursing staff was tested as a routine and prophylactic immunisation of susceptible persons was an important economic measure

Dr BIRKHAUG read a paper on

The Streptococci of Erysipelas

He said that by means of agglutination and absorption tests he had demonstrated that 91 per cent of hæmolytic streptococci isolated from cases of erysipelas fell into a definite group which was serologically distinct from the scarlet fever group and also from streptococci isolated from common septic conditions A serum prepared from the erysipelas strains protected rabbits against infection with similar strains but did not confer immunity against streptococci from other sources The intracutaneous injection of these erysipelas organisms into normal rabbits produced a condition strikingly resembling human erysipelas, and with a toxin obtained from the organisms a skin reaction akin to the Dick reaction could be demonstrated Dr Birkhaug further reported results of the use of an antiserum prepared from the erysipelas streptococci and used in human erysipelas The clinical trial of such a serum in 60 patients suggested that it had striking therapeutic effects when administered early in the disease and in adequate dosage The average dose given was 100 c cm of the unconcentrated serum and in most cases a single dose sufficed The injection was usually followed by a critical drop in temperature, an amelioration of the general condition, and the disappearance of the eruption In late cases the chief effect of the serum was in the amelioration of the toxic condition, its local results being less striking

FRIDAY, JULY 23RD

Prof G L GULLAND (Edinburgh) opened a discussion on

Leukæmia and Allied Conditions

and reviewed various theories of its nature. From the supposition that the disease was a suppuration of the blood, Prof Gulland dealt with supposed parasites which in their turn had become discredited At the present day the view was held in some quarters that it was an infective condition, and certainly cases of acute leukæmia clinically simulated the infections The leukæmia of fowls was a virus disease and human leukæmia might correspond to it The sum of all the available evidence, he thought, pointed to the disease being neoplastic, its special features being due to the fact that the white cells of the blood are not normally cohesive and permeate all tissues and fluids without themselves forming a tissue in the proper sense In leukæmia true tumour masses occurred in the bone-marrow and in certain organs, and the cells overflowed into the blood giving the well-known blood pictures Prof Gulland divided leukæmias into granular and non-granular classes, recognising in the latter lymphatic and myeloblastic types He considered that the cells met with in both classes were derived from a common marrow cell, the myeloblast or lymphoidocyte normally present in the bone-marrow but only active in pathological conditions Normally, the cells of the non-granular series were derived from a large lymphocyte and those of the granular series developed through an intermediate cell or promyelocyte The leukæmic process might affect any of these cells at any stage of their normal life-history, but when the granular forms were involved in a chronic type of the disease all the varieties of leucocytes participated in the proliferative process The reason for the simultaneous involvement of the non-granular cells was hard to find Both the acute granular and the chronic non-granular forms were rare, the latter being perhaps the most interesting type of leukæmia and often extremely chronic, the glandular enlargement might exist for ten years before the true diagnosis was made In such cases there was often remarkably little interference with the patient's health until the final breakdown occurred The existence of an acute lymphatic form of the disease was open to doubt, many cases described as such were the terminal phase of a chronic lymphatic leukæmia and showed very high white cell counts which would indicate a condition of long duration Others were in reality examples of myeloblastic leukæmia, and it must be remembered that in all such cases a coincident excess of true lymphocytes was the rule In the early stage of such cases the total white count might be only a little increased, but a certain proportion of myeloblasts would be present, which proportion would be found to increase as the disease progressed In leukæmic patients death was not due to the excess of white cells, but was a result of accompanying anæmia, hæmorrhage, or intercurrent conditions The causation of the associated anæmia was interesting In Prof Gulland's opinion it was to be found in the rate at which the leucoblastic transformation of the marrow took place If it advanced slowly, as in the chronic forms of the disease, time was left for compensatory activity on the part of the red-cell producing marrow, but if the process was rapid, or if the leukæmic transformation in chronic cases transgressed a certain limit, the physical possibilities of reaction by the erythroblastic tissue were so reduced as to result in a severe grade of anæmia As a consequence of irradiation the overgrowth of white cells might be checked and a chance of recovery offered to the red-cell-producing marrow to which it often responded very successfully With regard to allied conditions, chloroma was a true leukæmia and presented no real difficulties in diagnosis Whooping-cough and glandular fever sometimes occasioned difficulties; both showed a lymphocytosis and in the latter there was enlargement of the glands and spleen The greatest difficulty was in the aleukæmic stage of leukæmias, especially where anæmia was a prominent feature, here the diagnosis between leukæmia and pernicious anæmia was often in doubt and ultimate resolution of the difficulty by the pathologist was a result which the speaker strove to avoid

Dr S W PATTERSON (Ruthin) reviewed a series of cases of disease of the blood-forming organs classified as tumours of glands, tumours of spleen, and tumours of the mediastinum In the first group he included acute leukæmia (11 cases), glandular fever, and Hodgkin's disease He remarked that in Australia the combination of tubercle with Hodgkin's disease was not seen in the way it occurs in this country Under tumours of the spleen he included myeloid leukæmia, and the various types of splenic anæmia and acholuric jaundice The cases of mediastinal tumour included nine examples of Hodgkin's disease, seven of lymphosarcoma, and four of fibrosarcoma He expressed the view that the treatment of leukæmia by irradiation was equally destructive to both red and white blood elements

The PRESIDENT spoke of the difficulty of differentiating the non-granular types and asked what was the value of the oxidase reaction He put forward the suggestion that leukæmia was sometimes seen in epidemic form

Dr R DONALDSON (London) said that text-book classifications of leukæmia were too rigid He opposed the view that leukæmia was a sarcomatosis If this were so, then blood-forming tissue in malignancy behaved differently to other tissues, as instanced by its universal involvement True neoplasms of the bone-marrow were rare He preferred the view that the disease was due to a virus or an irritant; the clinical manifestations were more in accord with such a causation than with tumour growth, and its long duration was opposed to a neoplastic origin There was an obvious fault in the regulating mechanism of leucocyte numbers whose mode of function was unknown As far as he had been able to ascertain there was no increase in the incidence of the disease The records of St George's Hospital for the last ten years showed the admission of nine cases of acute lymphatic disease, seven of the chronic variety, and ten cases of myeloid leukæmia

Prof GULLAND, replying, denied that X rays or other leucocyte-destroying agencies produced anæmia, nothing was more definite than the improvement in the anæmic condition which took place as a result of such therapeutic measures The oxidase reaction often failed where it was most wanted, only certain myeloblasts gave it and the reaction probably depended on the cells' age He thought that there was no evidence of an epidemic tendency in leukæmia. With regard to the sarcoma view of the disease, he allowed that it was only provisional, but it was the view which best fitted the accepted facts. The remissions of the disease were quite unexplained, it was possible to produce them by benzol, but he considered that this drug only acted on the circulatory leucocytes, when its administration was stopped they returned with a bound and there was no evidence of its having any effect on the marrow

Dr T S P STRANGEWAYS (Cambridge) read a short paper in connexion with his demonstration with Dr CANTI on

Tissue Culture

Dark-ground illumination, he said, was better than any other method for studying the structure of the living cell. Man was to be looked upon as a cell colony produced by the repeated division of a single cell, and in his constitution two main types of cell were to be distinguished—the somatic and the germ cells The somatic cells surrounded the germ cells and formed tissues and organs which are built up for the purposes of the germ cell The somatic cells possessed the power of multiplication and of reproduction of their own type, but the germ cells were potentially immortal The death of an animal did not cause the simultaneous death of the body cells, which survived for a long time and might be obtained in cultures made some days after the death of the animal. Cells might easily be cultivated in plasma and certain tissue extracts outside the body and showed in their cytoplasm fat granules, mitochondria, and other structures In division the cell became round and the nucleus disappeared, to reappear in the form of chromosomes in the later stages of mitosis Growing cells were mobile and might migrate from place to place This doubtless also occurred in the body and its extent and possibilities were often underestimated, the extension of tumours was probably largely caused by the mobility of the cells and, further, the repair of surgical wounds was mainly due to their migration In the formation of an innocent tumour the phenomena seen were multiplication of cells followed by their differentiation and succeeded by a stage of inhibition of further growth, in a malignant tumour the process resolved itself into the multiplication of cells plus some degree of differentiation, but no phase of inhibition followed The factors here at work were of the greatest interest in connexion with the whole problem of such growths, in ordinary cultures the multiplication of the cells would go on indefinitely if favourable conditions were provided for their growth

Dr R G CANTI (London) supplemented Dr Strangeways's remarks by giving a description of the technique of tissue culture and the detailed process of cell division which he said, lasted about five minutes He also described some interesting attempts at microdissection of the living cell

Reviews and Notices of Books.

PATHOLOGY OF THE MOUTH

By FREDERICK MOOREHEAD, M S, D D S, M D, and KAETHE W. DEWEY, M D London and Philadelphia W. B Saunders Company Pp 540 32*s* 6*d*

THERE is much truth in the statement made in the preface to this book, that the mouth taken as a whole is a neglected territory, falling between dentistry and medicine The pathological conditions which occur in the mouth may be intimately connected with the teeth and associated structures or quite unrelated to these organs, and a wide knowledge of general medicine as well as of dental disease is essential if these conditions are to be differentiated There was undoubtedly room for a book devoted entirely to the pathology of the mouth, and it is the more disappointing that the volume before us is very unequal in merit Curiously enough the strictly dental part of the book is the least satisfactory.

Three pages only are devoted to dental caries, no illustrations of the morbid anatomy being included. The opening chapter on anomalies of the teeth and jaws is so brief and uninformative that, as it stands, it is useless and might with advantage be omitted The chapter on harelip and cleft palate is disappointing. Harelip is described as the commonest defect, but although it may occur unaccompanied, in the majority of cases a harelip is associated with a complete maxillary cleft The chapter on pyorrhœa on the other hand, is good and embodies a fairly complete account of the pathology of this condition so far as it is understood In the account of diseases of the dental pulp there is no mention of the condition sometimes described as " pink spot," in which there is absorption of the tooth from within, without any external lesion In discussing hypoplasia of the teeth the authors state that the defective formation of enamel is counterbalanced by overdevelopment of the interglobular spaces in the dentine This is surely a misreading of the condition. The excessive formation of interglobular spaces in dentine is itself a hypoplasia and is precisely analogous to the defects in the enamel The authors are wrong in stating that the enamel of the deciduous teeth is completed at birth So far from this being the case not more than about two-thirds of the crowns of the incisors is formed and proportionately less in the molars and canines

The account of the various oral manifestations of syphilis, leprosy, actinomycosis, and tuberculosis are excellent and well illustrated The diseases of the tongue are fully described, though the addition of illustrations to this chapter would greatly have increased its value The account of the tumours of the mouth is on the whole excellent Especially good is the section on the fibrous and myeloid epulis The authors discuss fully the pathology of the myeloid epulis and are evidently conversant with the extensive literature on giant-celled tumours The description of the cytology and morbid anatomy of these interesting tumours is admirably done The description of the odontomata is not so good, Bland-Sutton's classification is given but the authors do not follow it There is no mention of the valuable classification introduced by Gabell, James, and Payne, though it is by now well known and appreciated by oncologists

There is a long bibliography appended to the book which adds much to its value, though not many British references are included Where illustrations are inserted they are for the most part original and admirably reproduced The book will undoubtedly prove useful to students and practitioners, while if in a future edition the weaker sections are brought up to the standard of the rest, the authors will do a service to medicine and dentistry

OTOLOGY.

Contributions to the Art and Science of Otology Lectures and Papers by RICHARD LAKE, F.R C S, 1892–1925 London: Macmillan and Co 1926 Pp 255 15*s*

THIS collection of original addresses and papers covers a large number of matters within the domain of otology, and ranges from short notes, mostly on points of real interest, to detailed articles on considered subjects Of especial interest are a series of papers on vestibulotomy in non-suppurative disease of the ear for the relief of vertigo In one of these papers, which, with many others, originally appeared in THE LANCET, he reported in 1911 10 cases in which he had performed this operation with, apparently, considerable success Several of the papers are in French, having first been published in the *Archives Internationales de Laryngologie* We notice an odd misprint in the title of one of the papers translated into French, " Factem dans la Genève de Maladies du Nez et des Oreilles," " Factem " being obviously Factum, and " Genève " Genese Taken as a whole, this collection shows an observer with a keen mind and an ardent worker, the results of whose large practical experience are worth study by practitioners as well as by specialist workers The papers record first-hand experience

IMMUNITY IN TUBERCULOSIS

The Principles of Immunity in Tuberculosis By W CAMAC WILKINSON, M D, late Lecturer in Pathology and in Medicine at the University of Sydney. London Nisbet and Co. 1926 Pp 141 10*s* 6*d*

THIS book, as we learn from the preface, was written to prepare the way for the reopening of a tuberculin dispensary in 1926 In the first chapter, which deals with the modern conception of tuberculosis, Dr Wilkinson supports the current view that much of the infection in civilised communities takes place during childhood, and later he quotes German statistics of the war period to show that soldiers who bore the stigmata of tuberculosis or who had a personal or family history of the disease, resisted a subsequent attack better than those who had no such history or stigmata In conformity with the modern German view he regards the biological history of the disease as closely analogous to that of syphilis Thus he speaks of a primary sore or lesion, a secondary stage when " the tubercle bacilli, like the treponema, spread along the lymphatics that drain the site of infection," and a stage of tertiary manifestations which usually takes the form of chronic phthisis The bovine bacillus he regards as being of relatively little importance, and in an italicised passage he states that if bovine tuberculosis were eradicated from cattle in Great Britain it would not seriously diminish the death-rate from tuberculosis in human beings

In a chapter on chronic phthisis, Dr Wilkinson lays down 11 main facts of the pathological picture of the disease, with which other experts would largely agree; but when he reaches the question of early diagnosis he diverges from the views generally held After pointing out that "occult, larval, latent tuberculosis cannot be determined . by the most meticulous search for physical signs that do not exist or cannot be seen or heard at the surface of the body," he goes on to state that " by the touchstone that can explore the deep, distant, hidden, mysterious activities of cell life, we can touch and awaken signs and symptoms as latent and quiescent as the disease itself "—that is to say, by the diagnostic use of tuberculin Setting aside a very short chapter on the nature of immunity in tuberculosis, in which the author strongly favours the cellular rather than the humoral hypothesis, the rest of the book is devoted to an exposition of the tuberculin dispensary, its methods, and its value Here he is dogmatic and at times manifestly on the defensive against critics whom he holds to be both ignorant and unreasonable In reply to the criticism that the tuberculin dispensary may be a dangerous place he retorts " The essential difference between my methods and my critic's is that I can detect the other cases [i e, those which are not acute] without fail at an early stage and restore them to health My critic cannot because he is too timid to use the only means of demonstrating this difference "

No detailed instructions are given in the book as to the methods of dosage employed, and no mention is made of the problems of standardisation of tuberculin which are exercising the minds of immunologists at the present time The author apparently regards these matters to be outside the scope of the present work, which is frankly the advocacy of the tuberculin dispensary in the treatment of tuberculosis To this extent the title of the book is misleading

THE EVOLUTION OF ORTHOPÆDIC SURGERY

By ROBERT BAYLEY OSGOOD, A B, M D, John B and Buckminster Brown Professor of Orthopædic Surgery in Harvard University St Louis C V. Mosley. 1925 With 49 illustrations Pp 70

ON the flyleaf of this brochure we are told that the terms of the gift of the Detroit Orthopædic Lectureship Fund, established Nov 24th, 1922, provide for the publication of the lecture, and for the free distribution of the same to such societies, libraries, and individuals as shall be selected by the Lectureship Foundation Committee (of the Wayne County Medical Society) as most appropriate In accordance with these terms we have been presented with this historical survey of orthopædic surgery Our professional brothers in the United States are setting a good example in the interest that they are evidently taking in the history of our art Dr Garrison's works on this subject are well known and only a few weeks ago appeared the handsome book on pediatrics of the past by Dr Ruhrah, of Baltimore The report of the lecture now under notice is a valuable if less ambitious effort in the same direction Its author acknowledges inspiration to some extent from the " Menders of the Maimed," by Keith

Dr Osgood wisely declines any attempt to define orthopædic surgery, which, however, as he points out, did not really originate before 1800 After a short sketch of the medical art from the mythical Podalirius and Machaon to Francis Glisson, and a brief excursion into the history of the physiology of periosteum and growing bone, and a short notice of John Hunter and Sir (sic) Percival Pott, we come to the early orthopædic surgeon Delpech, who has received much unmerited credit for a share in the invention of subcutaneous tenotomy but whose book, " L'Orthomorphie," was the first really important contribution to the literature of the subject, seeing that Audry's Orthopædia contained little that was surgical Dr Osgood has enriched his pages with portraits and biographical notes of some of the leaders in surgery and its ancillary sciences who are not generally considered to have been orthopædic surgeons, but on the plea that they contributed to our knowledge of the framework of the human body their inclusion may perhaps be justified, but if Paget and Brodie are to be claimed as orthopædic surgeons, where is the line to be drawn ? The numerous reproductions in this little book of portraits of distinguished physicians, surgeons, and physiologists are not worthy of the high reputation of American book-illustration, they are for the most part disappointing

THE LAW RELATING TO INJURIES TO WORKMEN

Third edition By FREDK G NEAVE, LL D, Solicitor London Effingham Wilson 1926 Pp 160 2*s*

THIS new and revised edition of one of the series known as Wilson's Legal Handy Books deals concisely with injuries to workmen under the common law, under the Employers' Liability Act, and under the

Workmen's Compensation Acts, 1906–1924, as well as with the cases decided under these statutes. It is a judiciously compressed legal statement showing the workman's choice of remedies under the not very logical system of alternatives which Parliament will perhaps one day coördinate and simplify In a book so recently published it is unfortunate that the author was unable to include references to the consolidating Workmen's Compensation Act of last year. This Act, it will be remembered, came into operation on May 1st of 1926 and, with a few minor exceptions, replaces the previous Workmen's Compensation Acts ranging from 1906 to 1924 The author's general statement of the law, and (so far as it goes) of its historical development, remains unaffected by the omission, but his references to what are now repealed statutes are misleading Text-book writers deserve all sympathy when Parliament thus upsets their publications, but it was known last year that the process of consolidation was impending and it would have been better to delay this book till the effect could be stated

---

A HISTORY OF THE LONDON HOSPITAL.

Third edition By E W MORRIS, House Governor of the Hospital London: Edward Arnold and Co 1926 Pp 303 *7s 6d*

THE third edition of this excellent history, which first appeared in 1910 has been brought up to date, and gives information as to the various changes which have occurred during the intervening period. Many new departments have been organised, new buildings to house those departments have been erected and the staff also has suffered changes A notable date was the year 1921, when Lord Knutsford completed his twenty-fifth year of service as chairman of the hospital How much the hospital owes to Lord Knutsford's energy, tact and humour as a successful beggar for the charity over which he presides cannot be put down on paper The tabular chronology of the hospital at the end of the book is interesting as showing that the duty of almsgiving is still widely recognised amongst all classes; the sums received vary from small amounts and more and varying substantial donations to an anonymous gift of £50,000 for endowment for medical research to the new sun baths given by patients who had received Finsen light treatment The account of the treatment and accommodation at the hospital in its early days may well make the modern patient thankful that he did not live in those times, and there is a grim description, p. 57 et seq, of the course of a case of compound fracture in pre-Listerian days: "The patient did well for ten days, at the end of which he complained of his bowels and of a shivering, and that upon opening some abscesses, which were found gathering in his leg, the discharge was so great that he lost his appetite and sank under it. . . Mr Harrison had ordered him fish, chicken, or anything else he could eat, and large nosegays to prevent his being affected by the stench of his leg, and that the man was thankful and particularly so on the day of his death." Many a sufferer must have welcomed death as a release from a surgical ward in those days.

Mr Morris's book is worthy of the great institution of which he is so faithful and efficient a servant.

JOURNALS

JOURNAL OF PHYSIOLOGY. Vol. LXI, No 3 June, 1926 Pp 305–464 Cambridge University Press — Lady Briscoe reports investigations on Conduction of Respiratory Nervous Impulses through Regions of Block Produced by Pressure These investigations she has summarised in THE LANCET (July 10th, p 56) —Prof J Mellanby contributes an account of the Experiments on the Secretion of Pancreatic Juice referred to in his paper in THE LANCET (July 31st, p 215) —The other papers are as follows The Conduction of a Nervous Impulse in a Narcotised Region of a Nerve, by Sybil Cooper. Until challenged recently by Kato in Japan and Forbes in America (1924) it has been taken as an established fact that when subjected to narcosis or other depressing influence a nerve conducts with a decrement—i e. that the actual change observed is reduction of the ability of conduction through narcotised nerve. Experiments with frogs' nerves, narcotised with alcohol and chloral hydrate indicated that there is conduction with a decrement and no lengthening of the recovery. The author's results on the whole do not confirm the work of Kato, but they are in agreement with the work of Lucas and others.—The Blood Count and Body Temperature in Normal Rats, by Arthur Dighton Stammers The normal red cell count in rats is in the region of 8,700,000 per c mm. at sea-level At an altitude of 6000 feet (Johannesburg) there was an increase of under 6 per cent. as compared with the 20 per cent increase seen in normal human blood at this altitude The range of body temperature of the rats in the writer's colony was 96·8°–102·2° F. Under normal circumstances, and seemingly the same conditions, the temperature of the rat apparently varies within 2° or 3°.—On Cellular Activity and Cellular Structure as Studied in the Thyroid Gland, by W. Cramer and R. J Ludford. The thyroid was chosen for an attempt to establish a correlation between changes in functional activity and in the structure of the cytoplasm as indicated by alterations in the mitochondria and the Golgi apparatus—both of which structures can be seen in living cells, and are, therefore, not artefacts Conditions were established which induce intense activity and complete inactivity respectively of these glands. Exposure to cold and the injection of β-tetrahydronaphthylamin produce an intense activity of the gland, while a resting condition is induced by exposure to a hot environment and by thyroid feeding A very clear relationship could be demonstrated between the functional state of the gland and the mitochondria In the resting gland the mitochondria are barely visible. In the active gland they show an enormous enlargement. The condition of the mitochondria, therefore presents a criterion for the functional state of the gland, and may, as Goetsch has suggested, be useful in the study of pathological states of the gland The Golgi apparatus shows the same changes which have been observed in the other gland cells in rest and activity—a simple contracted form in the resting cell an enlarged convoluted form during activity, followed by a disintegration into granules Several illustrations show the appearance of sections of the gland of the mouse at room temperature, the immediate effect of cold following heat, and the immediate effect of heat following cold, the differences being most striking. A pictographic summary of sections of the gland under various conditions of activity is given, and the significance of the mitochondral changes from the point of view of cell mechanics is discussed. The mitochondria represent a mechanism by which the cell can produce great variations of surface energy within the cytoplasm On the basis of accepted views such variations must be accompanied by changes in the distribution of the lipoids within the cytoplasm and the cell membrane These changes in turn, would affect the permeability of the cell.—The Venous Pressure of the Eye and its Relation to the Intra-ocular Pressure, by W. Stewart Duke-Elder. The author describes the methods he adopted to measure the pressures in the intra-scleral veins in dogs, that in the extra-scleral veins the intra-ocular veins, and the variations of venous pressure with intra-ocular pressure —The Spleen and the Resistance of Red Cells, by D Orahovats R. M. Pearce has shown that the resistance of the red cells of the blood from the general circulation to hypotonic salt solutions is greatly increased after splenectomy. The resistance of the red cells of the spleen pulp was compared with the resistance of the red cells of the body (1) to *hypotonic salt solutions*, (2) to saponin solutions. It was found that the red cells contained in the spleen pulp are less resistant to hypotonic solutions than the red cells from the general circulation, and the former are more resistant to saponin solutions than the latter The statement of R. M. Pearce regarding splenectomy is confirmed —On the Output of Hæmoglobin and Blood by the Spleen, by E. W. H Cruickshank A method is described for estimating in cats the blood and hæmoglobin output of the spleen without exposure of the organ. It is shown that the capacity of acting as a reservoir for blood and of concentrating hæmoglobin is a peculiar property of the spleen not shared by other muscular organs—e g , the tongue —The other papers are The Osmotic Pressure of the Proteins of Human Serum and Plasma, by E B Verney; The Relation of Work and Heat in Tortoise Muscle, by Jeffries Wyman, jun , The Influence of Length on the Responses of Unstriated Muscle, by F R Winton, and Determination of the Hydrogen-ion Concentration of the Blood, by L E Bayliss, P T Kerridge, and Ruth Conway Verney —A paper by H H Knaus, on the Action of Pituitary Extract on the Pregnant Uterus, is reviewed on p 343

MEDICINE AND THE LAW.

Inquest Quashed Duty to View Body

AT a Lancashire inquest held last March the jury found that the deceased, a boy of 16, committed suicide by shooting Application was recently made to the Divisional Court for a rule *nisi* for a writ of *certiorari* directing another inquest to be held because the coroner had not viewed the body The rule has, after argument, been made absolute, a fresh inquest has been ordered, or rather it has been decided that the inquest without view was no inquest at all and that, therefore, an inquest must be held which may be held before the same coroner The coroner made an affidavit explaining that, owing to difficulties of transport, he arrived late at the inquest, he was told by the police officer that the jury had already viewed the body and were waiting for him In these circumstances, being a solicitor with no more medical knowledge than the jury, he considered (wrongly, as he now admits) that no useful purpose would be served by his viewing the body, especially as he had had a medical report before he had ordered the inquest But, though a solicitor, he forgot that Section 4 of the Coroners Act of 1887 says that "the coroner and jury shall, at the first sitting of the inquest, view the body" This omission was fatal to the validity of the inquest It was argued on behalf of the coroner that, by the passing of the 1887 Act, Parliament outlined (in Sections 4 and 5) certain routine proceedings, and authorised the High Court (by Section 6) to dispense with a further inquest at its discretion if any irregularity had occurred. The Lord Chief Justice, following the leading case of R. *v* Ferrand decided in 1819, rejected the argument and held it to be a condition precedent that there should be a view of the body. On an application for costs, the coroner, Mr. D M. Haslewood, was ordered to pay a sum not exceeding £10 towards the applicant's costs

It may be remembered that the Government's Bill dealing with the law of coroners proposes to amend Section 4 of the 1887 Act The Bill says: "At or before the first sitting of an inquest on a body the coroner shall view the body, and, if before the body has been buried, the coroner so directs or a majority of the jury so desires, the body shall be viewed by the jury also" View by the jury (which has been noted by observers as often a perfunctory performance where the jurors are persons of refinement) is scarcely necessary except where there are wounds or injuries which raise the question of self-infliction or otherwise The recent Lancashire case was of this nature The boy had a Mauser pistol, apparently taken with him for the purpose of shooting rabbits His body was found in a lane one morning, having apparently been in that position since midnight The pistol was lying near him There was a lacerated wound in the left temple and a punctured wound in the right Medical evidence indicated that the bullet entered on the left side The boy was left-handed and in his left hand was found a partly-smoked cigarette His relatives felt that a verdict of suicide was less probable than one of accident or murder, hence, their application to quash the inquisition In face of the coroner's statement and the fact that the jury had viewed the body, it does not seem that the coroner's omission to view made any difference to the verdict The view by the coroner, however, whether under the law as it was before 1887 or under the law since 1887, or under the law as it will be if the Coroners (Amendment) Bill passes, is an indispensable formality An inquest must be, in the old phrase, *super visum corporis* No view, no inquest

Professional Discipline Cases Appeal to High Court from Quasi-Judicial Bodies

It is notorious that from time to time there has been strong criticism of the decisions of the disciplinary tribunal to which Parliament has entrusted the task of dealing with "infamous conduct in a professional respect" It has been pointed out that in other professions than that of medicine there is the safeguard of a right of appeal to the High Court from the sentence of the professional tribunal Such a right of appeal is conceded, for example, to the solicitor whose conduct has brought him before the disciplinary committee of the Law Society It was observed in this column some weeks ago that an appellant must not expect too much of this privilege of appeal to the law courts. The Lord Chief Justice, presiding over the Divisional Court, which was hearing one of these appeals under the Solicitors Acts, said that the legislature had made the Law Society master in its own house, and added that, unless the Society had gone wrong upon some question of principle or law, the matter was one for the Society's discretion and the Court would be very reluctant to interfere This particular appeal has lately found its way to a higher court, where the Master of the Rolls has emphasised afresh the discretionary powers of the Law Society "It is impossible," he said, "for any Court to lay down the exact principles upon which the Law Society must base its decisions, the legislature has entrusted it with the duty of estimating the standard of conduct to which a solicitor must attain in order properly to carry out his duties, no one could be more competent, more wise, or perhaps more merciful in judging these cases than the Law Society" One can hardly doubt that the law courts would display the same reluctance to interfere with the decisions of the professional tribunal if Parliament were moved to grant, by way of safeguard, a right of appeal to the High Court in cases under the Medical Act

The professional discipline tribunals of lawyers and of doctors have been described as quasi-judicial, if they act judicially, the law courts will be slow to interfere with their decisions On the other hand, if they fail to give natural justice, interference will be speedy enough This principle is illustrated by the recent case of Captain Peter Wright against the Bath Club A club committee, acting without bias and in accordance with the club rules, can expel a member (if the rules so provide) after first notifying him of the charges made against him and after giving him an opportunity of answering those charges A club committee is a quasi-judicial body, it is necessarily invested with a discretion to act in what it deems the best interests of the club. Captain Wright won his action against the Bath Club because the committee had strangely failed to acquaint him with the charges against him and to give him a hearing This was a denial of natural justice, the quasi-judicial body had failed to act in a judicial manner, and so the law courts intervened If one could imagine the committee of the General Medical Council similarly lapsing from judicial standards and condemning a doctor unheard, the law courts could, and doubtless would, intervene even in the present condition of the law.

For Invalids

HORLICK'S MAL
Carbo-hydrates c
which affords a maxim
digestive effort It m
by making good the w
recuperation of the dig
preparing the way to a
in itself and ready in a
in hot or cold water

To secure the o

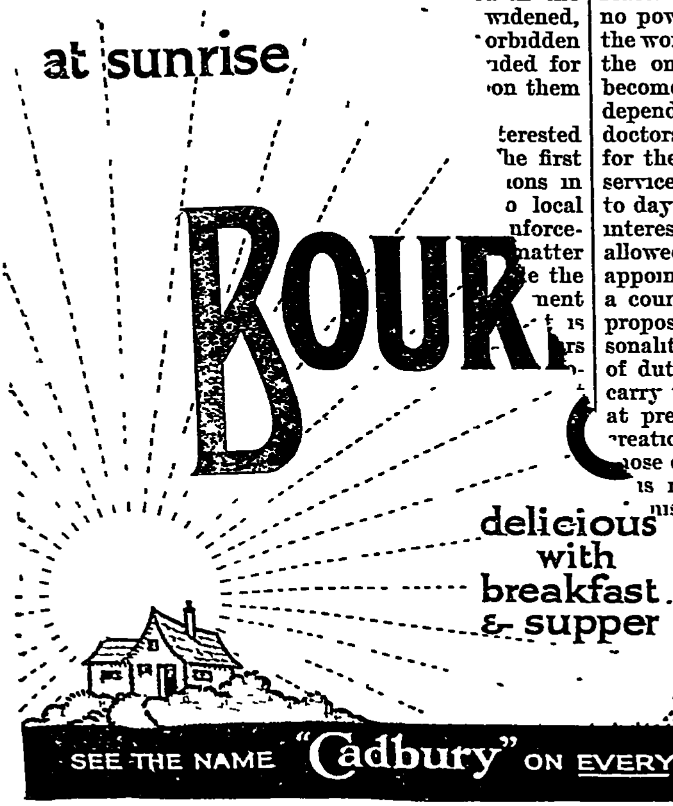
HORLICK'S MALTEI

Liberal samples

4, 1926

nce the last
the period
nd additions
n, but great
ok on such
if only on
ocedure of
roduced to
tered in 13
of this Bill
is one of the
f preventive
slation, as he
e past great
LEY, better
ers a century
nomists and
ictories won
consolidation,
t legislative
factories and
ween textile
eek limited
pted, per-
as been on
e structure
and so are
nsion In
ed in the
widened,
orbidden
nded for
on them

terested
he first
ions in
o local
nforce-
matter
e the
nent
t is
rs


at sunrise
BOUR
delicious with breakfast & supper
SEE THE NAME "Cadbury" ON EVERY PIECE O

are carried on Their claims are logical, since enforcement of all sanitation in each district would thus be unified Presumably the Government departments concerned have come to agreement but medical officers of health, as representative of local authorities, may yet object that their view-point has not been fully considered Possibly the balance for efficiency leans towards the procedure embodied in the Bill But whatever be the final issue, the present system of dual control is unsatisfactory.

The second matter of particular interest to doctors concerns the medical examination of young persons proposing to enter on factory life of any sort This work is laid down to be performed by "appointed doctors," and no allusion is to be found anywhere to the existing office of certifying factory surgeon, except where it is stated that under the Workmen's Compensation Act, 1925, references to a certifying surgeon shall be construed as references to an "appointed doctor" The provisions governing the examinations have been recast and strengthened, while local education authorities are called upon to produce to an "appointed doctor" the school medical record of young persons, and this officer is defined to mean a medical practitioner duly appointed to act, the appointment resting usually in the hands of the Secretary of State or chief inspector As he is to be appointed for individual factories rather than for whole districts, the assumption is reasonable that some choice of doctor may now be accorded to each establishment His fees and duties may be determined by the Secretary of State, but contracts for service are not ruled out, nor is extension of duties beyond the examination of young persons—indeed the possibility of such extension seems adumbrated elsewhere in the Bill when power is taken to arrange by order for special medical supervision of workers, where the amount of sickness or some other reason renders it desirable Somewhat unaccountably no power is given to an appointed doctor to inspect the work upon which a young person is to be employed; the omission ought to be rectified before the Bill becomes law Taken as a whole, while much must depend upon the way in which the scheme of appointed doctors is administered it seems to give opportunity for the development of an adequate factory medical service such as industry, in its own economic interests, to day badly needs In one direction, however, an interesting, but not very promising innovation is allowed for by permitting the transference of the appointment and duties of an appointed doctor to a county council Should use ever be made of this proposal, a factory would lose any say in the personality of its appointed doctor, while any extension of duties for supervising the health of adults would carry the whole-time public health staff into a realm at present unexplored by it and might end in the creation of another blind alley service, in addition to those of tuberculosis officer and school medical officer
is may be due to some interdepartmental com-
mise, but the factory medical service will have a chance if it be free from dual control

new Bill, of which our Parliamentary corre-
makes a full abstract elsewhere, contains,
ny useful health provisions, the power to
ent and suitable lighting in factories and
the precautions to be adopted in places
us fumes accumulate—for example, in
oiler flues It is a piece of useful and
ion, the result of careful preparation.
tered by Parliament before being
Book, it will rank as worthy
estry

are more resistant to saponin solutions than the latter. The statement of R M Pearce regarding splenectomy is confirmed.—On the Output of Hæmoglobin and Blood by the Spleen, by E. W. H Cruickshank A method is described for estimating in cats the blood and hæmoglobin output of the spleen without exposure of the organ. It is shown that the capacity of acting as a reservoir for blood and of concentrating hæmoglobin is a peculiar property of the spleen not shared by other muscular organs—e g, the tongue —The other papers are The Osmotic Pressure of the Proteins of Human Serum and Plasma, by E B Verney; The Relation of Work and Heat in Tortoise Muscle, by Jeffries Wyman, jun, The Influence of Length on the Responses of Unstriated Muscle, by F. R Winton, and Determination of the Hydrogen-ion Concentration of the Blood, by L E Bayliss, P T Kerridge, and Ruth Conway Verney.—A paper by H H Knaus, on the Action of Pituitary Extract on the Pregnant Uterus, is reviewed on p 343

MEDICINE AND THE LAW.

Inquest Quashed Duty to View Body.

AT a Lancashire inquest held last March the jury found that the deceased, a boy of 16, committed suicide by shooting Application was recently made to the Divisional Court for a rule *nisi* for a writ of *certiorari* directing another inquest to be held because the coroner had not viewed the body The rule has, after argument, been made absolute, a fresh inquest has been ordered, or rather it has been decided that the inquest without view was no inquest at all and that, therefore, an inquest must be held which may be held before the same coroner The coroner made an affidavit explaining that, owing to difficulties of transport, he arrived late at the inquest, he was told by the police officer that the jury had already viewed the body and were waiting for him In these circumstances, being a solicitor with no more medical knowledge than the jury, he considered (wrongly, as he now admits) that no useful purpose would be served by his viewing the body, especially as he had had a medical report before he had ordered the inquest But, though a solicitor, he forgot that Section 4 of the Coroners Act of 1887 says that "the coroner and jury shall, at the first sitting of the inquest, view the body" This omission was fatal to the validity of the inquest. It was argued on behalf of the coroner that, by the passing of the 1887 Act, Parliament outlined (in Sections 4 and 5) certain routine proceedings, and authorised the High Court (by Section 6) to dispense with a further inquest at its discretion if any irregularity had occurred The Lord Chief Justice, following the leading case of R. v Ferrand decided in 1819, rejected the argument and held it to be a condition precedent that there should be a view of the body. On an application for costs, the coroner, Mr. D M Haslewood, was ordered to pay a sum not exceeding £10 towards the applicant's costs

It may be remembered that the Government's
dealing with the law of coroners proposes to am
Section 4 of the 1887 Act The Bill says "
before the first sitting of an inquest on a bo
coroner shall view the body, and, if before th
has been buried, the coroner so directs or a
of the jury so desires, the body shall be view
jury also" View by the jury (which has
by observers as often a perfunctory
where the jurors are persons of refinem
necessary except where there are wor
which raise the question of self-inflict
The recent Lancashire case was of
boy had a Mauser pistol, appare
for the purpose of shooting ra
found in a lane one morning,
in that position since midnig
near him There was a la

ten
evid
side
was f
felt that
one of a
to quash
statemen
body, it d
view mad
by the c
as it was
under the
ment) Bi
An inques
corporis

Profes

It is no
strong cr
tribunal to
of dealing
respect"
professions
guard of a
sentence of
of appeal i
whose cond
committee
this colum
not expect
law courts.
the Divisio
appeals u
legislature
own hous
gone wro
matter w
Court wo
particula
court, wl
afresh t
"It is
down t
must l
it with
to wh
carry
more
cases
that
to i
tribu
of s
case
of
th

LD & SILVER.

OL (A.F.D.)

njected in time and in suitable
serious case of pneumonia,
s In all febrile conditions,
ay be used without hesitation,
sive and free from toxicity
ARGOL injections have been
are Influenza, bronchitis,
-pneumonia, *endocarditis* and
acute articular rheumatism,
tis, epidemic encephalitis, puer-
abscess

THARGICA.

severe type, treated success-
and Silver."
cet," July 24th, 1926, p 172.

OL
AL
LVER

DICATIONS.

Acute and Chronic *Infectious Conditions*,
(Septicemia, *Pneumonia*, *Influenza, etc*)

Internal and External Antisepsis (Intestinal
Intoxication, Wounds, etc)

Oto-Rhino-Laryngology

gol Ampoules and full particulars from—

LO-FRENCH DRUG CO, LTD.,
Gray's Inn Road, London, W.C. 1.

THE LANCET.

LONDON: SATURDAY, AUGUST 14, 1926

THE FACTORY BILL

A quarter of a century has elapsed since the last Consolidating Act of 1901, and during the period not only have considerable alterations and additions been made to our code of factory legislation, but great changes have taken place in the outlook on such legislation. A Bill, distinctly overdue if only on account of the need to simplify the procedure of enforcement, has now, however, been introduced to consolidate enactments at present scattered in 13 different Acts. The medical importance of this Bill is considerable, since the factory code is one of the greater arms of the spreading tree of preventive medicine. The student of factory legislation, as he peruses it, must inevitably think of the past great fights fought by Oastler, Lord Ashley, better known as Lord Shaftesbury, and others a century ago, of the opposition from political economists and the Manchester school, and of the great victories won to which we are heirs. In addition to consolidation the Bill proposes several important legislative advances. The old distinction between factories and workshops is to disappear, and also between textile and non-textile factories; a working week limited to 48 hours for protected persons is adopted; permission to use the shift system, which has been on trial since 1920, is included; work on the structure of ships in dock is brought within the Bill, and so are building operations—an important extension. In many directions provisions are strengthened in the light of administrative experience and are widened as, for instance, when workers are not merely forbidden to interfere with or misuse appliances provided for health, safety, or welfare, but have placed upon them the duty of using such appliances.

The medical profession will be particularly interested in two proposed variations in procedure. The first concerns the enforcement of sanitary conditions in workshops which is at present entrusted to local sanitary authorities. The new Bill transfers enforcement to the factory inspectorate, and over this matter controversy is certain to arise. On the one side the principle may be advanced that adequate enforcement with maintenance of the standard of equipment is best attained through the activities of expert inspectors who, moreover, are concerned with the other provisions of the measure, and have been in the past accustomed to deal with these provisions so far as all places, except workshops, are concerned; the principle is that of unification of inspection. Further, the inspection is entrusted to persons entirely independent of all local influences. On the other hand local authorities may claim that they should not only retain their present powers but have them extended to all places contemplated under the Bill; that the authority which is responsible for cleanliness, overcrowding, ventilation and drainage for all other purposes in a district should also control these matters in the factories of the district; that these are matters affecting the general health of the district for which they are responsible and calling for medical supervision rather than for non-medical inspectors; for only in this way can local authorities become acquainted with the way in which the industries of their districts are carried on. Their claims are logical since enforcement of all sanitation in each district would thus be unified. Presumably the Government departments concerned have come to agreement but medical officers of health, as representative of local authorities, may yet object that their view-point has not been fully considered. Possibly the balance for efficiency leans towards the procedure embodied in the Bill. But whatever be the final issue, the present system of dual control is unsatisfactory.

The second matter of particular interest to doctors concerns the medical examination of young persons proposing to enter on factory life of any sort. This work is laid down to be performed by "appointed doctors," and no allusion is to be found anywhere to the existing office of certifying factory surgeon, except where it is stated that under the Workmen's Compensation Act, 1925, references to a certifying surgeon shall be construed as references to an "appointed doctor." The provisions governing the examinations have been recast and strengthened while local education authorities are called upon to produce to an "appointed doctor" the school medical record of young persons, and this officer is defined to mean a medical practitioner duly appointed to act, the appointment resting usually in the hands of the Secretary of State or chief inspector. As he is to be appointed for individual factories rather than for whole districts, the assumption is reasonable that some choice of doctor may now be accorded to each establishment. His fees and duties may be determined by the Secretary of State, but contracts for service are not ruled out, nor is extension of duties beyond the examination of young persons—indeed the possibility of such extension seems adumbrated elsewhere in the Bill when power is taken to arrange by order for special medical supervision of workers, where the amount of sickness or some other reason renders it desirable. Somewhat unaccountably no power is given to an appointed doctor to inspect the work upon which a young person is to be employed; the omission ought to be rectified before the Bill becomes law. Taken as a whole while much must depend upon the way in which the scheme of appointed doctors is administered it seems to give opportunity for the development of an adequate factory medical service such as industry, in its own economic interests, to-day badly needs. In one direction, however, an interesting but not very promising innovation is allowed for by permitting the transference of the appointment and duties of an appointed doctor to a county council. Should use ever be made of this proposal a factory would lose any say in the personality of its appointed doctor, while any extension of duties for supervising the health of adults would carry the whole-time public health staff into a realm at present unexplored by it and might end in the creation of another blind alley service, in addition to those of tuberculosis officer and school medical officer. This may be due to some interdepartmental compromise, but the factory medical service will have a better chance if it be free from dual control.

The new Bill of which our Parliamentary correspondent makes a full abstract elsewhere, contains, among many useful health provisions, the power to secure sufficient and suitable lighting in factories and to insist on the precautions to be adopted in places where dangerous fumes accumulate—for example, in tar stills and boiler flues. It is a piece of useful and progressive legislation, the result of careful preparation. Unless profoundly altered by Parliament before being placed on the Statute Book, it will rank as worthy of a great legislative ancestry.

THE MICROSCOPY OF THE LIVING EYE.

THE eye is easily accessible and lends itself to objective examination because its media are transparent, slight subjective disturbances in function are regarded as important by everyone, and the consequence is that clinical investigation has reached a higher degree of exactitude in the eye than in any other organ Elsewhere the clinician reasons largely by inference, and medicine has to rely on morbid histology for the elucidation and interpretation of its clinical conditions While no one will deny the value of this indirect method of pathological investigation or the importance of post mortem lessons, undoubtedly they must give way to any technique which permits the direct study of pathological processes as they unfold themselves in the living tissues Ophthalmology has thus become the most exact of the branches of medicine, and each improvement in technique has given an immense stimulus to its progressive advancement The first of these advances may be said to have been the introduction of focal illumination by HIMLEY over 100 years ago, but the difficulties of the method and the limits of its effectiveness, on account of the indifferent optical appliances and means of lighting available at that time, set severe limitations on its immediate extension and value The second was the discovery of the ophthalmoscope by BABBAGE in the middle of last century, which, throwing open new and fruitful fields of study, was the prelude to the greatest activity that ophthalmology has ever known It is difficult and not a little dangerous to assess the ultimate value of contemporary events, but the introduction of the slit-lamp by ALVAR GULLSTRAND in 1912 bids fair to have begun a third epoch of stimulating progress, wherein old problems are being attacked and solved, new ones are being opened out, and a fresh perspective, presented with a precision hitherto unknown, is being unfolded

An account of the principles involved in the new method, and some of its practical applications, will be found elsewhere in this issue in the Montgomery lecture, delivered by Mr HARRISON BUTLER, who has done not a little to further this new branch of knowledge To the clinician practising ophthalmology the slit-lamp is invaluable, and what was a luxury yesterday promises to become a necessity to-morrow The fear that its complexity would necessitate its confinement to the field of clinical research and preclude it from routine practice is unfounded The expert—and it is within the powers of the average person to become to a very large extent an expert—in a period of time not much longer than it takes to read these lines, can bring successively into focus the corneal surface, its parenchyma and its endothelial layer, the aqueous, the intimate structure of the iris, the capsule, the complex configuration of the internal structure, the posterior surface of the lens, and the delicate framework of the vitreous These may be examined with an ease and precision hitherto unapproached, each presented with a wealth of detail, and localised in its true perspective in three dimensional space An additional complexity, the contact-glass, which is needed for examination of the posterior part of the vitreous and the retina, is unsuitable for the vast majority of patients, and in its present stage of development probably presents too many difficulties and takes up too much time to be of much clinical value The cornea, from its position and great transparency, is the structure most readily examined, but it is also the structure most amenable to detailed study by the older methods, and it is in the anatomy and pathology of the lens that the greatest increase to our knowledge has been made This tissue is found to have, optically, a most complicated formation, and cataract is found to be a disease showing many unsuspected different and well differentiated types The immense amount of data collected by VOGT and his co-workers during the last few years, which is being rapidly sifted and added to in this and other countries, is throwing new light on this condition With the slit-lamp the process of opacity formation can be detected in its most early stages before any change can be made out by the ophthalmoscope or any functional defect is noticed by the patient, exact localisation of its site and details of its structure can be obtained, a minute record of its progress can be made, and it is claimed that it is possible to reach some conclusion as to its probable rate of development and ultimate termination In many other conditions the observer can see fine points of diagnostic importance which could not formerly be made out at all or only with difficulty, or when they had reached a stage of development which we are now in a position to consider as gross these include slight vascularisation of the cornea, minute keratic precipitates, early opalescence of the aqueous, and small pigmentary remnants on the lens capsule The importance of their recognition can be realised when it is remembered that upon the presence or absence of such conditions rest some of the most grave decisions in ophthalmological practice

It is to be remembered, however, that the method has its well-defined limitations Enthusiasm for a new subject is apt to lead to an over-liberal estimation of its value Slit-lamp microscopy is merely an adjunct, a refinement, of the older methods of examination, it does not supersede but merely amplifies them, and it must be allotted not more than its due share in the general scheme of routine examination To rely upon its aid alone is to lose all sense of perspective, and to run a grave risk of misinterpreting the changes seen and of forming a wrong conception of their significance, it is to make the mistake of using the direct method of ophthalmoscopy without the indirect, of examining a microscopic slide with the oil-emulsion lens before the low-power objective Nor can the method supersede the study of minutiæ with the microscope The useful magnification is limited by the inability of the patient to maintain fixation, which places the slit-lamp outside the scope of cytological and bacteriological studies It provides no substitute for differential stains and reagents, and —what is often forgotten—the pictures it delineates are largely optical phenomena, capable of varying interpretation The interpretations of different observers are not always in accord, and long experience is required to form an adequate judgment on the finer points Many of the interpretations, now somewhat loosely accepted, will have to be revised, new appearances will be described, and new values put upon the old The study is still in its infancy, and it will be long before it has definitely established itself and given to us all the potentialities which it possesses To the clinician the slit lamp offers fresh opportunities for adding to the store of his knowledge pictures and conditions which are available by no other method, and it provides him with means for the easier and more confident detection of signs which may be of the greatest import at a stage at which they have hitherto been unrecognisable To the pathologist it discloses processes in significant detail as they occur topographically and unchanged by artefact, which are often without significance when considered post mortem as isolated findings To the anatomist it has opened up a new structure of the living eye; the anatomy of the lens is being elaborated at a pace which has made our most modern text-books obsolete, and ten years ago the structure of the vitreous was unknown To the embryologist it has given a new conception of the embryonic remnants, to the physiologist of the eye it gives new scope for the study of the activity of the pupil and the mechanism of accommodation, but by the general physiologist it seems to have been so far neglected. As far as we are aware no serious attempt has been made to turn to experimental purposes the physiological possibilities offered by observation, under microscopic magnification, of nerve-fibres or newly formed capillaries in the substance of the cornea, or of normal capillaries in the conjunctiva near the limbus in their natural surroundings We think we are right in saying that COCCIUS was the first in 1852 to study the minute limbic vessels and to observe the circulation in them, but this work seems to have been largely forgotten They are easily examined, their dilatations and contractions and periods of complete obliteration the stream of corpuscles within them progressing by pulsations, now proceeding and now stopping, just as described by KROGH and others in less accessible surroundings, are very evident New-formed vessels also, composed of a single endothelial layer and showing pulsatory activity, can be induced to wander into the transparent cornea after an inflammatory lesion The study of these, by means of the slit-lamp, in their natural environment, and the study of their reactions to stimuli and to drugs, might be useful in a branch of physiology upon which much attention is being focused

◆

ACID MILK IN INFANT FEEDING

THE recent minor heat-wave was associated with the usual sporadic outbreaks of acute gastro-intestinal disorder in infants, and serves to remind us that though many of the ætiological factors in such diseases are now more clearly understood than formerly, the story of their pathogeny remains far from complete The growth of the infant welfare centres has done much to diminish epidemics of summer diarrhœa, but the therapeutic problems in individual cases remain hard to resolve On page 322 of our present issue we publish an article by Dr. ETHEL CASSIE and Dr. URSULA COX recording results obtained at the Carnegie Institute, Birmingham, by the use of lactic acid milk in the feeding of babies suffering from wasting and gastro-intestinal symptoms In the first part of this article the writers discuss the factors governing the acidity of the gastric contents in infants. The problem is a difficult one owing to the limitations imposed on the observer in the choice of test-meal, and the necessity for avoiding the too frequent passage of stomach-tubes; the conclusions of the authors have consequently been given with considerable reserve The second part of the article deals with their clinical experience with sour milk feeding It must be noted that a preliminary trial of more orthodox methods eliminated the majority of simple cases, leaving a number of obstinate ones The success of the treatment shows it to be worthy of extensive trial, and we hope that these observers will soon be in a position to publish results from a larger series of cases, with fuller investigation of the nature of the changes in the intestinal flora which may occur as the result of feeding with milk thus impregnated with *B bulgaricus* It is still uncertain whether bacterial replacement is a feasible proposition, but the observations of most workers tend to show that milk for such purposes must always be prepared in the laboratory and that trade preparations claiming to yield cultures of *B bulgaricus* and *B acidophilus* are for the most part inert and useless Readers interested in this subject will find it admirably reviewed in a recent work[1] by N. KOPELOFF. Working chiefly with asylum inmates, he was able to relieve obstinate constipation almost without exception by giving daily doses of milk containing cultures of *B acidophilus* The results in cases of chronic diarrhœa were often extremely encouraging, though by no means so certain Bacteriological investigation of the fæces of these patients showed that it was necessary to give the milk cultures over rather long periods in order to obtain a free growth of *B acidophilus*, though subsequent arrest of treatment finally led to the organisms disappearing from the stools, this did not happen for a considerable period The bacterial flora of the intestine presumably may take some time to reach equilibrium after the introduction of a different type of organism, in somewhat the same way as the smooth working of a sewage purification system requires a few days to adjust after the introduction of the appropriate bacterial sludge, although, when equilibrium has been established, the process continues unchecked for an indefinite period without further interference. From the theoretical point of view there is little doubt that bacterial implantation offers immense therapeutic possibilities, and it is to be hoped that the next few years may see an increase in the clinical and experimental study of the subject. Relevant to this subject is the increasing vogue of milk pasteurisation to which Mr T. MCLACHLAN draws attention in an important letter in our present issue. Dr. ERIC PRITCHARD has stated more than once that his chief objection to the indiscriminate use of commercially pasteurised milk is the selective lethal influence which pasteurisation has on the bacterial flora, and this point is emphasised by Mr. MCLACHLAN. Dr. PRITCHARD laments our ignorance of the significance of a mixed bacterial flora in the alimentary tract. We hardly know, he has said, what is normal and what is not At the Infants Hospital, however, although the milk-supply is beyond reproach, a practice is made nevertheless of souring any milk which is supplied to premature or young babies who are not breast-fed Current American practice does not go as far as that, for Dr C G. GRULEE, one of the recognised experts in infant feeding, stated in a recent address[2] that acid milks are necessary in only 1 in 300 cases of infant feeding

---

[1] N Kopeloff Lactobacillus Acidophilus Baltimore Williams and Wilkins Company. 1926 12s 6d

[2] Jour Amer Med. Assoc, July 17th, p 139

RESEARCH IN BREEDING ANIMALS—The Rockefeller Foundation has offered £30,000 for the extension of the Animal Breeding Research Department at Edinburgh on condition that an equal sum is raised in this country The International Education Board is said to have come to the conclusion that this department, which is under the joint management of the East of Scotland College of Agriculture and the University of Edinburgh, is the best centre in the world for training in agricultural genetics. The donation is offered so that it may be able to provide for the training of students from all parts of the world The department is under the direction of Dr F. A. E Crewe and during the past year courses of lectures have been given by members of the staff to students of agriculture and veterinary science at many centres in England and Scotland.

Annotations.

"Ne quid nimis"

PRACTITIONERS AND DANGEROUS DRUGS.

Effect has now been given to the recommendation, made by the Departmental Committee on Morphine and Heroin Addiction, that a medical tribunal should be set up to consider the case of medical practitioners addicted to drugs or supplying them for purposes of addiction As already foreshadowed,[1] this tribunal is to consist of three medical practitioners, assisted by a legal assessor, and as from July 29th last the Home Secretary is no longer obliged to chase an offending doctor into the police-court in order to obtain the withdrawal of his authority to supply and possess habit-forming drugs It was the feeling of the Departmental Committee that a tribunal with a strong medical element would serve the double purpose of protecting from himself a doctor who had unfortunately become a drug addict and protecting his patients by preventing him from prescribing dangerous drugs in excess The new Regulations will achieve this purpose and at the same time avoid unseemly publicity in a distressing but happily very small class of cases The other Regulations which came into force on the same date make it an offence for a person to go to a second doctor for a supply or prescription of habit-forming drugs unless he first discloses that he has been receiving treatment from another practitioner Doctors, dentists, and veterinary surgeons are now required to keep records of all supplies of dangerous drugs purchased or obtained by them, whether or not they dispense or otherwise supply the drugs Copies of these Regulations, amending the Dangerous Drug Regulations of 1921, are obtainable from H M Stationery Office.

GASTROSCOPY

There is significance in the fact that endoscopic examination of the stomach was being attempted in London before the war, whereas to-day the practice is so rare as to be almost unknown. The difficulties and dangers of the procedure have caused it to fall into abeyance Nevertheless, it is still employed quite frequently both in Germany and in Austria, and it seems clear that if it could be brought to a more perfect state of technique it would be of the utmost importance both in diagnosis and for watching the effects of treatment When we realise the immense issues determined by the examination of an X ray shadow the potential value of a direct view of the gastric mucosa is apparent Stimulated by such views Dr. Jean Rachet,[2] working with Dr Bensaude at the Hôpital Saint-Antoine in Paris, has recently published a study of his clinical and experimental observations with this instrument The modesty and logic of his conclusions are such that we feel them worthy of reproduction here Gastroscopy must remain an exceptional method of gastric examination, it occupies a position in the means at our disposal after radiographic examination but before laparotomy Gastroscopy demands the exercise of the greatest prudence, the greatest patience, and the greatest gentleness The method cannot be looked upon as an everyday means of investigation and should remain in the hands of experts trained in its use The safety of its employment must not be sacrificed even for the benefit of progress It is impossible with a gastroscope to explore the whole of the stomach and consequently a negative finding does not permit of the exclusion of organic disease A straight, rigid gastroscope for indirect vision is advocated by Dr Rachet, and he insists on the importance of scrupulous preliminary examination of the patient The passage of the instrument is made with the patient in the position of left lateral decubitus, local anæsthesia is employed, and a guiding thread is first swallowed by the patient After detailing the technique necessary to obtain an adequate view of the greater part of the stomach, the author points out the value of the method for studying recent peptic ulcers and for identifying early malignant growths As regards the latter, he notes the disappointment that must result from the fact that patients experience symptoms so late that even by the most accurate means of diagnosis early cancer will rarely be discovered In the study of true gastritis the instrument holds out hope of progress in our knowledge, for it is only when direct vision is added to our armamentarium that we can hope for any real advance concerning this disease "Gastroscopy," Dr Rachet concludes, "appears to be a method promising rich results, but it requires great prudence and much further research to establish its final value It should in no case supplant other means of investigation, and it is by the accumulation of clinical facts that it will acquire its right to be quoted as a first-class means of examining cases of digestive disturbance"

MEDIÆVAL MEDICINE

An excellent epitome has been made from the four volumes already published of Mr R T Gunther's larger work, "Early Science in Oxford," in order that a large number of students for whom the cost of the original book was prohibitive may have an opportunity of studying some of the subjects therein mentioned The present work[1] is in seven chapters dealing respectively with Early Medicine, Medicine in the Seventeenth Century and After, Anatomy, Physiology, Zoology, Botany, and Geology The book is of a size handy to read, admirably printed, has many illustrations, and is altogether delightful Mr Gunther has a wonderful flair for extracting gems from the various ancient mines in which he has been working, and many of them show how true is the aphorism that there is nothing new under the sun For instance, the following excerpt, taken from the diaries of one Simon Forman (1552–1611), of Magdalen College, puts modern professors of rejuvenation in the shade "and myselfe did boill 2 snakes in my strong water when I distilled it and after I drank of that water and yt made me to be fresh and take away all my gray hairs when I was 56 yers old and many toke me not to be above 40 or 42" Another would, if he reads it, make Sir Arthur Conan Doyle extremely envious It concerns a Fellow of Trinity, by name Th Allen (1542–1632), noted for his skill in mathematics and astrology The vulgar looked upon him as a magician and his servitor would tell them "that he met the spirits coming up the stairs like bees" Few outside the medical profession, or we might even say within it, know that the architect of St Paul's was the same Dr Christopher Wren, Fellow of All Souls, to whom are due the beautiful anatomical drawings in illustration of Willis's work on the brain, and that he was also the originator of intravenous injections The discovery of a method of injecting bodies with a solidifying fluid is due to Boyle, as also the method of keeping moist anatomical preparations in spirit Richard Lower, a pupil of Willis, studied the anatomy of the heart (1669) and left some accurate drawings of the muscular fibres, showing the spiral arrangement of the muscular fibres, a fact almost forgotten until its revival by Pettigrew Robert Hooke, of Christ Church (1635–1702), who was not only a skilled microscopist but an architect of no mean talents (he built the new buildings of Bethlehem Hospital in 1675), was the first to record that the blue colour in a peacock's tail has no real existence, but is due to "a texture visible under the microscope"—i e, is due to interference, though, of course, he did not know the reason These quotations may suffice to indicate the interest of Mr Gunther's book Of the series of postcards issuing from the same press,[2] two especially are worthy of note, the one (dated 1631) shows the Castle of Health attacked by flying evils, an early forecast of microbial invasion, the other (dated 1660) is an amputation scene from a window in the Bodleian The patient is seated in a chair placidly regarding the operator, who is removing his leg with a hack-saw, no preliminary incision of the soft parts having apparently been made

---

[1] The Lancet, June 19th, p 1218

[2] La Gastroscopie By Dr Jean Rachet. Paris Octave Doin. 1926 Pp 117 Fr 20

[1] Early Medical and Biological Science, extracted from Early Science in Oxford, by R T Gunther M A., LL D Oxford University Press, Humphrey Milford 1926 Pp 246 7s 6d

THE ACTION OF PITUITARY EXTRACT ON THE UTERUS

IN 1924 Dixon and Marshall[3] showed the existence of a relation between the cyclic activity of the ovary and the pituitary gland, and stated that the amount of pituitary secretion discharged into the cerebrospinal fluid depends largely upon whether corpora lutea are present or absent They came to the conclusion that as the corpus luteum is supposed to undergo retrogression shortly before the close of pregnancy, the revival of the ovarian secretion causes a sudden increase of pituitary secretion, which by its action on the more irritable uterine muscle brings about labour According to this theory the increase of pituitary secretion is an important factor in starting parturition Subsequent observers, in studying the conduction of contractions in uterine muscle, found that there are distinct changes in the mechanism of this muscle at different stages of the œstrous cycle It was also found that remarkable changes take place under the action of pituitary extract, which seems to induce the same effect in the uterus at the diœstrous period as that which occurs naturally at œstrus and during early pregnancy In order to test the view that a steady or sudden increase of pituitary secretion at the end of pregnancy finally brings about labour, H H Knaus[4] has now reported on his further results obtained from injecting standardised pituitary extract into doe rabbits at various stages of pregnancy The duration of pregnancy in these animals is 31–32 days It was found possible to induce parturition by injecting a certain quantity of pituitary at any time after the twenty-ninth day of pregnancy. In experiments during the time from the eighteenth to the twenty-eighth day of pregnancy no quantity of pituitary was found sufficient to induce abortion on the day on which the experiment was carried out, but as a result of prolonged pituitary action—nine injections of pituitary were given at hourly intervals—the fœtuses were killed inside the uterus, and were cast some days afterwards In a group of experiments covering the period from the first to the seventeenth day of pregnancy, no matter what (reasonable) quantity of pituitary extract was injected, it was never found possible to disturb pregnancy Knaus considers that his results show that considerable changes occur in the relation between the hypophysis and the uterine muscle during pregnancy An interpretation of the results might apply to one of these organs or to both of them. He concludes that there is no increase of irritability or sensitivity of the uterus during pregnancy, but that, corresponding to the growth of each muscle cell, there is a regular rise of contractility of the muscle The larger the muscle cell the greater is its ability to shorten itself, and that is why the effect of pituitary extract upon the muscle increases steadily and pregnancy advances By the twenty-ninth day of pregnancy the uterine muscle cells have grown so large that their maximum contraction, caused by pituitary, results in delivery of the young, while in the last few days of pregnancy the uterus keeps on growing and increasing its contractility, so that eventually a maximum contraction is no longer needed to produce the young

RESPIRATORY ARCHIVES

THE first number of a new journal entitled *Archives Médico-Chirurgicales de l'Appareil Respiratoire* has just reached us, founded by Emile Sergent and Th Tuffier, its object being to collate the work of physiologists, physicians, and surgeons in its bearing on the pathology of the respiratory system The founders hold that recent knowledge of the physiology of the chest and precision in technique have given a fruitful stimulus to the clinical study of respiratory diseases and have contributed largely to the development of new clinical methods Artificial pneumothorax, phrenicectomy, and extrapleural thoracoplasty enable the physician to-day to contend against lesions thought, until recently, to be almost incurable Excision and destruction by cautery of lobes of the lung involved by suppurations or by tuberculosis are no longer considered in the light of forlorn hopes Each number of the journal (about 100 pages) is to comprise three parts, the first to be reserved for original contributions, the second for critical reviews, and the third for a digest of the principal papers published in France or abroad The *Archives* will appear at two-monthly intervals, the cost in England per volume of six numbers being 130 francs The publishers are Gaston Doin et Cie, Paris

The first number opens with an article by E Sergent on the interpretation of respiratory murmurs, in which he pleads for recognition of the fact that a pathological breath sound is not something adventitious or superimposed, as are râles and friction sounds, but is none other than the physiological laryngotracheal sound, transmitted by some pathological cause beyond those regions over which it is normally perceived and modified in its acoustic properties by the physical conditions associated with the pathological cause In the second original article Th Tuffier, to whom every credit is due for the origination of this method, deals with extrapleural pneumolysis which he has himself carried out 57 times in 55 subjects, 44 of whom were suffering from pulmonary tuberculosis He used fat grafts in 33 cases, paraffin in 8 cases At first sight his results appear happier than those obtained by other surgeons, but many of his observations are of short duration For example, while one case was seen eight years and another two years after operation, and both had done well, in 11 other cases of pulmonary tuberculosis reported as satisfactory an opinion was based on examinations made less than five months after operation The results in cases other than tubercle were less satisfactory Phrenicectomy is the subject chosen for critical review F Bordet discusses the results obtained in cases (1) of pulmonary tuberculosis, (2) of bronchiectasis, (3) of chronic basal suppurations In the first group the scope of the operation as a curative measure is very limited, although in Germany, Italy, and America improvement has been claimed in a number of cases As a preliminary to thoracoplasty, and in association with artificial pneumothorax, phrenicectomy is gaining adherents The curative value of phrenicectomy as the sole procedure in the treatment of bronchiectasis is regarded as doubtful, though there have been exceptional cases A Baumgartner and P Alary deal with the possible variations in origin and course of the phrenic and accessory phrenic nerves They favour the operation of evulsion (exeresis) over the radical operation of Goetze except in cases where difficulties arise and particularly when there is pleural effusion They do not discuss the difficulties caused by pain and transmitted pulsation during evulsion, which are very real to those who have had experience of the operation It is surely optimistic to state "When one has resected 7 or 8 cm of the phrenic at the base of the neck one can consider that the anastomoses have been destroyed"

The journal has been modelled on the well-known *Journal de Chirurgie*, and the idea and its execution are both excellent. It remains to be seen whether sufficient material can be produced in one country to maintain the output at a high standard.

---

[2] Old Ashmolean Postcards Oxford Science Series Five cards one in colour 6d Oxford University Press

[3] Journal of Physiology, lix., 276

[4] Ibid, June 1926

A SEPTEMBER POST-GRADUATE COURSE FOR PRACTITIONERS

A COURSE of instruction for qualified practitioners will be given at St. Bartholomew's Hospital during the summer vacation, beginning Monday, Sept. 6th, and ending Saturday, Sept. 18th. The object in view is to afford practitioners the opportunity of attending the practice of a large metropolitan hospital and medical college for a short period and of receiving systematic teaching from members of the hospital staff at a time when ordinary lectures and classes are in abeyance and comparatively few students are in attendance. The course includes the usual rounds of the physicians, surgeons, and specialists on the hospital staff, as well as demonstrations in the wards and in the out-patient departments. There will also be a series of special demonstrations on such things as the clinical significance of gastric secretion, carcinoma of the tongue, amputations in relation to artificial limb-fitting, the diagnosis and treatment of chronic sepsis of the lung and pleura, infections of the urinary tract, sanocrysin in pulmonary tuberculosis, artificial sunlight in general medicine, and regional and local anæsthesia. Practitioners attending the post-graduate course become temporary honorary members of the Students' Union and have the use of the Abernethian smoking and writing rooms and of the dining room. The composition fee for the whole course is 10 guineas, reduced to 8 guineas for practitioners who are perpetual students of the hospital, while either week of the course may be taken for the fee of 6 guineas (5 guineas). Every practitioner who enters for a course is required to call on the Dean and to sign the hospital register. Application should be made to the Dean, Dr. T. W. Shore, St. Bartholomew's Hospital Medical College, London, E.C. 4.

A NEW DUST TRAP FOR ROCK DRILLING

THE introduction of the percussive or pneumatic drill for carving granite and for boring holes in rocks into which explosive charges are inserted has added greatly to the dust danger of granite workers and miners, more particularly when the rocks contain silica, as in the case of granites and many metalliferous lodes. Many efforts have been made in the past to control the escape of the dust by the use of water either through hollow drills or by sprays, but they have proved little more than palliatives, and the incidence of silicosis has gone pari passu with increased use of the drills. Now, however, the welcome announcement is made from the Mines Department of an ingenious device for trapping the dust as it is formed.[1] It is sucked away from the place where the drill enters the rock by an exhaust draught which is actuated by spent air escaping from the drill. This air is made to pass off by a nozzle placed within a larger pipe when, on the ejector principle, it induces a considerable suction of air into the pipe. The more the drill works, the more does spent air escape to induce a greater exhaust draught for catching the dust, since the pipe is made to open where the tool is at work. The exhaust draught carrying the dust is discharged into a flannel trouser, the bottom of which fits on to an open metal box. The air escapes readily through the flannel leaving the particles of dust behind. These particles are automatically shaken off the flannel down into the box by the pulsating nature of the exhaust draught due to successive puffs of spent air escaping from the machine drill. The device only comes into play when the drill is in action and makes use of semi-compressed air which was otherwise wasted. For catching dust when holes are being blown out the ejector nozzle is attached direct to the compressed air supply. The efficiency of the device has been demonstrated by comparative dust counts which indicated from 58 to 198 dust particles per cubic centimetre of air with no work in progress, over 2000 particles (too many to count) with the drill at work without the device, and 163 to 332 with the device attached. In the South African gold mines the standard of safety adopted for dust concentration is 300 particles per cubic centimetre of air. This device may confidently be expected to save many lives from silicosis, and to go far towards banishing from the rock-drill the insidious and terrible risk which has always been associated with its use.

IN DEFENCE OF THE TOOTH-BRUSH

IN the *Scalpel* of July 10th Dr. F. Watry combats the indictment of the tooth-brush by Dr. M. Polet in a recent number of the *Annales de l'Institut Chirurgical de Bruxelles*. Dr. Polet accused the tooth-brush of being a cause of dental caries, gum trouble, and pyorrhœa, and would have us trust instead to thorough mastication, fruits especially apples and fibrous roots at the end of a meal, and rinsing of the mouth. He also advocates the use of liquorice root as a substitute for the tooth-brush. Dr. Watry claims, on the other hand, that the tooth-brush is invaluable as a weapon of oral prophylaxis, and that the harm is done by badly constructed tooth-brushes, generally dirty, and used in the wrong way. Very few people, he says, have such perfect mouths as to justify dispensing with the tooth-brush. The brush should have a light impermeable handle and the bristles should be arranged so that they will clean the dental interspaces and so that they can be readily cleaned and disinfected by allowing water or disinfectant vapour to get between and around them. The brush should be suited to the individual mouth and, if possible, chosen by a specialist. It should be disinfected before its first use and cleaned and sterilised after each subsequent use. Boiling is not possible but formalin vapour may be used. Dr. Watry admits that among the masses one will have to be content with careful washing and keeping in a clean place. Before using the brush the mouth should be thoroughly rinsed and gargled. The brushing should be vertical, from below upwards for the upper jaw, from above downwards for the lower jaw with an energy suited to the tone of the tissues, so as not to cause bleeding. Thorough rinsing and gargling should follow the brushing. It is a good plan to follow the brushing by the use of a thread to clear the interdental spaces. Some experts also recommend massage of the gums with the fingers. These rules do not apply to mouths in a pathological or inflammatory condition, in which event medical advice should be sought.

There is no reason to apprehend trouble owing to the moving of the buccal flora from one part of the mouth to another by a clean brush. The substitution of liquorice root for the tooth-brush cannot be considered an advance. Dr. Polet's paper, says Dr. Watry, will serve a useful purpose by drawing attention to the abuse and clumsy use of the tooth-brush. Dr. Watry reminds us that the International Dental Federation, under the presidency of Prof. Brophy, of Chicago, instituted more than a year ago a thorough inquiry into the question of the tooth-brush. The special committee appointed to conduct the investigation has not issued its final report but it made a provisional report to the Federation at the Geneva meeting of 1925. The provisional report confirms the value of the tooth-brush and attributes the harm imputed to it to its wrong use or to the use of unsuitable brushes, and attaches great importance to the education of the public as to the proper construction and use of tooth-brushes. The committee also proposes to go fully into the question of the alleged harm done by tooth-brushes, however small it may be.

---

[1] A Method of Trapping the Dust Produced by Pneumatic Rock Drills. By P. S. Hay. Safety in Mines Research Board Paper No. 23. H.M. Stationery Office. 1926. 6d.

LIGHT AND VITAMINS

LIGHT is gradually being shed on the nature of the vitamins by the agent itself It has already been shown by Hess and Weinstock that vitamin D is a photosynthetic body, being, in fact, built up by the action of light on cholesterol, and the observation has more recently been confirmed by Steenbock. In an interesting note from the Middlesex Hospital by Dr P. R Peacock, which we publish this week, it is shown that vitamin A is photolabile—that is to say. it is destroyed by light, provided that the light is of sufficient intensity Dr Peacock noticed that cod-liver oil lost its fluorescence when exposed to light for months on the working bench, and he set himself to discover whether its "delumination," as he calls it, bore any relation to the vitamin content of the oil He soon found that the deluminated oil failed to show the usual chemical test for the presence of vitamin A, but on following the matter up he discovered that delumination and destruction of this vitamin were parallel but not identical phenomena. since fully deluminated oil recovered its fluorescence when kept in the dark, although the colour test for vitamin A failed to return On the other hand, he found no evidence to suggest that the antirachitic vitamin D in cod-liver oil is destroyed by sunlight Light, he concludes, is thus a variable factor which must be taken into account in estimating the growth-promoting properties of cod-liver oil and attention must be paid to the manner in which the oil is stored While the essential chemical nature of the vitamins still remains obscure, observations such as those of Dr Peacock may serve to indicate into what categories they fall, and even to suggest types of molecular stability. There are apparently two changes in the absorption spectrum of cod-liver oil after exposure to light, one corresponding to the destruction of vitamin A and the other indicating a chemico-physical change of a reversible character. Such reversible changes initiated by light are on our present knowledge extremely rare, and it would be premature to state definitely that the changes observed are purely chemical in character Further researches on this point would be of great interest

HERITABLE HYPERGLYCÆMIA

WHEN hygiene begins to take eugenics seriously it will have no task more important than the identification of heritable characters and their modes of grouping and inheritance A knowledge of the possibilities and what is worth looking for in man must almost necessarily be derived from the study of some shorter-lived animal; the valiant contributions which thousands of mice have made to our knowledge of cancer before they died of old age, at about 2, have been extraordinarily useful, and it is in these same handy animals that Dr. P J. Cammidge and Mr H A. H Howard have made some highly suggestive observations on blood-sugar [1] In the ordinary run of mice the fasting concentration of blood-sugar is about 85 ± 5 mg. per 100 c cm A certain number show, however, substantially higher figures, ranging round 120 mg , and if these are bred together all the progeny have hyperglycæmia too Further appropriate matings showed that high blood-sugar is inherited in a straightforward way as a Mendelian recessive character and the results of crossing high with low and low with low depended on the genetical constitution of the animals exhibiting the dominant low character Incidentally the breeding experiments involved albinism—another recessive character—as well, and they show that the two are inherited independently of one another It will be of much interest to see whether these results apply also to man; they probably do Published collections of normal blood-sugar figures by H Gray[2] show a distribution of values in a tolerably normal curve without any suggestion of two modes But recessive characters are shy and especially if they involve a greater liability to death or a lesser likelihood of reproduction than normal. they may be obviously present only in a very small proportion of the population, as, for example, is feeble-mindedness What relation hyperglycæmia has to diabetes is uncertain It seems extremely probable that diabetes is usually caused by the wearing out by overwork of a congenitally weak mechanism for disposing of carbohydrates Hyperglycæmia is naturally an early symptom, but it cannot at present be affirmed that it is causally related to actual diabetes A heritable factor has been involved in the ætiology, as indeed it has in most diseases of which the cause is not known, but definite evidence is lacking, though diabetes insipidus is sometimes clearly inherited. Those who doubt the hygienic importance of tracing out as diligently as it can be done the facts of human inheritance should study the memoir on the relative factors influencing infant welfare by Dr. Ethel Elderton which is appearing in the *Annals of Eugenics.* Poverty, housing, and sanitation have little effect on infant mortality, compared with the influence of the father's health and habits and especially of the health of the mother. Whether health and habits cause environment or vice versa is as yet unsolved, but the general impression given by Dr. Elderton's work, expressed in terms less guarded than her own. is that the nature of the people concerned is more important than their surroundings and that their nature is inborn Parallel results are recorded by Prof. Noël Paton and Prof Leonard Findlay in their report on Poverty Nutrition, and Growth, reviewed in THE LANCET, July 31st, p 240. In this report similar emphasis is laid on hereditary as opposed to environmental factors as influencing the growth of children in slums

---

[1] Jour. Genetics 1926 xvi, 387.

[2] Arch Int Med, 1923 xxxi, 241

WE regret to learn of the death of Dr Robert Henry Cole, physician for mental diseases to St Mary's Hospital and last year's President of the Section of Psychiatry of the Royal Society of Medicine. Dr Cole succumbed on Tuesday last to an attack of angina pectoris.

AN Order of Council has been issued altering the composition of the Committee of Privy Council for Medical Research, the ministerial body under which the Medical Research Council conduct their work. The Committee originally consisted of the Lord President of the Council, the Minister of Health (England and Wales), the Secretary for Scotland, and the Chief Secretary for Ireland, but the last-named office has become obsolete as a result of the changes in the government of Ireland In view of this vacancy, and of the increasing relation of the Medical Research Council to research work in overseas parts of the Empire and in industrial medicine, the Secretaries of State for Home Affairs, for Dominion Affairs, and for the Colonies have now been added to the Committee.

INDEX TO "THE LANCET," VOL. I., 1926

THE Index and Title-page to Vol I , 1926, which was completed with the issue of June 26th. is now ready. A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 1, Bedford-street Strand, W C 2 Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now

METROPOLITAN ASYLUMS BOARD —A three months' course in hospital administration is to be held for the benefit of candidates for the Diploma of Public Health, at the North-Eastern Hospital, St. Ann s road Tottenham London N, by the medical superintendent, Dr F H Thomson The lectures will be given on Mondays and Wednesdays at 4 45 P.M., and on alternate Saturdays at 11 A.M., and will begin on Oct 4th Application should be made to the Clerk to the Metropolitan Asylums Board, Victoria Embankment, E.C 4.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CLXXXV

THE TREATMENT OF ANKYLOSTOMIASIS

FOR all practical purposes human ankylostomiasis may be defined as the sum of the effects of infestation with *Necator americanus* and *Ancylostoma duodenale*, one or both. Its treatment consists, first, in the poisoning and expulsion of all hookworms; and, secondly, in the counteracting of the ill-effects, particularly the anæmia, which they have produced.

The ideal anthelmintic would, in a single dose, kill all hookworms without endangering the host. No such drug is known. Accordingly, the dose of an anthelmintic drug is a compromise between efficiency and safety. Safety is mainly determined by the size of the dose; efficiency is presumably dependent upon the amount of the drug which comes into contact with the worms—that is to say, upon its concentration in the intestine—provided this be maintained for an adequate period.

With a view to intensifying this concentration it has become an established practice that, before giving an anthelmintic, the bulk of the intestinal contents shall be reduced by preliminary fasting and purgation. It will, however, be seen presently that this accepted procedure may be dangerous. It is a common practice to administer the anthelmintic in two or three equal fractions, generally at hourly intervals and in the early morning. Subdivision presumably lessens the intestinal concentration, but may increase the period over which the drug is present there in a degree poisonous to hookworms. It is further the practice to give a purgative with or after the anthelmintic, with the twofold object of eliminating the residue of the drug, thus lessening unwanted absorption by the host, and of removing the worms before they can either reattach themselves to the intestinal mucosa—should the poisoning be temporary and not fatal—or damage the host by absorption of any toxins which may be liberated by their dissolution. The purgative commonly takes the form of 16 to 32 g. of sulphate of soda or magnesia an hour after the last dose of anthelmintic.

Five Lines of Treatment.

Various lines of treatment have been advised for ankylostomiasis; of these five have obtained a vogue. They are—chloroform and eucalyptus, beta-naphthol, thymol, oil of chenopodium or its active principle, ascaridol, and carbon tetrachloride. Their anthelmintic value has been estimated (1) by post-treatment examination of the stools for ova (either crudely, for their presence at all, or accurately—and rarely—for the degree of their diminution in a unit quantity of solid fæces), or (2) by determining the percentage of worms expelled by any treatment compared with the total number expelled, both by the treatment under test and by a second treatment with a drug believed to be reasonably effective. The last year or two have shown that, as ordinarily carried out, both these tests are inaccurate. Accordingly, our knowledge of the efficiency of all lines of treatment is much less exact than it can, and it is hoped will, be made during the next few years, if what appear to be reliable forms of control are more widely adopted. Regarding the lines of treatment mentioned above, the position is as follows:—

Oil of Eucalyptus and Chloroform.—This treatment, at one time popular, consists of oil of eucalyptus 2.5 c.cm., chloroform 3.5 c.cm., castor oil 40 c.cm. The consequent symptoms have so often been provocative of anxiety that it now finds no advocates, at least for mass treatment.

Beta-naphthol, taken in excess, gives rise to vomiting and marked destruction of erythrocytes with the usual concomitants—namely, jaundice with hæmaturia or albuminuria—followed, it may be, by death. Such fatal consequences have been produced by a dose as small as 4 g. (R. Howard). Two deaths and a number of anxious cases have been produced among about 1000 persons taking an ordered dosage of 50 gr. (3.6 g.), the officer responsible questioning, however, whether they had received even as much as this. The drug in this instance was reported as being chemically pure. The optimum dose has been taken as 2 g., but even in this dosage there is clearly blood destruction since, as Ashford and Igaravidez have shown, it is invariably accompanied by the appearance of the diazo-reaction in the urine. As regards efficiency R. Howard, using the crude diagnostic methods available in 1918, reported that 9, 12, or more doses of 3 to 4 g. were required to disinfest. The best reported results appear to have been obtained by Ashford and Igaravidez, who continued treatment, with search of the stools for worms, so long as any were recovered. Of the total so found, 72 per cent. were recovered after the first treatment. In about 1000 cases similarly treated in India in 1916, and using the crude diagnostic methods then available, I found 25 per cent. still showing ova after five treatments.

Thymol has had a wide use in the treatment of ankylostomiasis. Its optimum dose is 60 gr. There seems to be no record of death with certainty attributable to thymol taken in optimum dosage. Vomiting, dizziness, and tinglings may be experienced. Including treatments and re-treatments, the writer gave about 50,000 optimum doses of this drug to some 20,000 persons in Darjeeling, India, without mortality or serious anxiety. It is the drug with the best record for safety. Regarding efficiency, Ashford and Igaravidez, using the methods already indicated, obtained from the first treatment 77 per cent. of the total worms recovered. It is thus somewhat more efficacious than beta-naphthol, but is more expensive. In the doses suggested as optimum, thymol produced no destruction of erythrocytes. It is apt to ball when given in powder form, considerable masses being found unchanged in the fæces. This wastefulness can be prevented by using powdered thymol and mixing it intimately with an equal quantity of sugar of milk, or the cheaper bicarbonate of soda, the kind of "adulterant" used being perhaps immaterial provided it mechanically separate the thymol crystals. Judged by the crude diagnostic methods available in Trinidad in 1915, this "adulteration" raised the cure rate after one treatment from 12 per cent. to 48 per cent. Thymol is soluble in alcohol and in oil. To avoid unnecessary risk of absorption these should be interdicted during treatment, the final purge not being castor oil.

Oil of Chenopodium.—The optimum dose of this oil was originally placed by Schüffner and Vervoort at about 48 drops, as furnished by the International Drop Counter, a total equivalent to about 1.2 c.cm. The measure has been misunderstood and the drop held equivalent to a minim, so that the dosage widely used has been 3 c.cm., and a number of deaths have followed. The toxic symptoms produced are epigastric heat, colic, nausea and vomiting, paræsthesiæ of all senses, weakness, incoördination and spasm, confusion, delirium, coma, and convulsions. Unaware of the actual position the experience of Darling and others reduced the dosage to 1.5 c.cm., which approximates to that from which Schüffner and Vervoort had never deviated. There seem to be no adequate figures available for the comparison of thymol and oil of chenopodium in their optimum doses. Darling compared 4 g. of thymol with 1.5 c.cm. of oil of chenopodium, and obtained relative efficiencies of 88.6 and 93.7 per cent. With the oil given in dosage of 1.2 c.cm. there is likely to be little to choose between the two drugs in efficiency or risk, and for mass work the choice will depend on convenience and cheapness of purchase and administration. This statement applies to

N americanus For *A. duodenale* chenopodium appears to be the more effective drug Its active principle, ascaridol was found by Nelson to comprise 50 to 70 per cent of the oil, and it has been stated that on keeping, the drug loses in efficiency and gains in toxicity When given mixed with castor oil it is less efficacious than when the purgative follows.

Carbon Tetrachloride, the popular anthelmintic of the hour, was introduced by Maurice C Hall in 1921 in dosage of 3 c.cm With this dose its efficacy is marked · and a number of deaths have occurred It seems definitely established that the chemically pure drug in this dose may kill with entire unexpectedness. The main lesions produced are fatty degeneration, with a subsequent necrosis, greatly aggravated by fasting of liver and kidneys—regeneration particularly in the former organ, being very rapid. Symptoms of poisoning include early nausea, vomiting, and epigastric pain, hepatic tenderness jaundice hæmaturia, and temporary suppression of urine. Hall and Cram point out that almost all deaths have followed what they call "therapeutic doses" and conclude that the drug has no minimum lethal dose. I would put the matter otherwise and suggest that the accepted is neither a therapeutic, nor the optimum, dose. Regarding a smaller dose, Smillie and Pessoa treated 15 cases with 1 5 c.cm. of the drug in two doses, and estimated that 62 per cent. of worms were removed and 12 5 per cent. of persons disinfested Even with this lessened dose one of their cases became gravely ill, with vomiting, much bile in the urine and a temperature of 104° F Straub and Kouwenaar, after 16 deaths with dosage from 1·5 to 3 c cm., disallow treatment by this drug. The drug may then kill with unexpectedness in doses of 1 5 c cm, in which dose it is less effective than are the older anthelmintics. Preliminary fasting increases risk of poisoning, as does ingestion of fats: glucose lessens it.

Carbon Tetrachloride Combined with Oil of Chenopodium or Ascaridol—A combination of these drugs has latterly been used in the hope that, their toxic effects falling largely upon different systems, the combination will be more effective than would either drug be separately, while toxicity will not be materially increased The efficacy of this combination merits, and will no doubt receive, a properly controlled trial

Conclusion.

From these considerations the following conclusions naturally emerge. If one place safety first and there is surely no possible justification for any other general attitude on the part of a medical man, carbon tetrachloride in advised doses does not occupy the premier position which is claimed for it; nor for analogous reasons is beta-naphthol a drug which can be recommended Thymol, and oil of chenopodium of known ascaridol content, used in respective dosage of 4 g and 1 2 c.cm. are safe drugs, the latter being, apparently, the more effective where *A. duodenale* is concerned The choice between the two will mainly be determined by secondary considerations such as palatability and, under mass conditions ease and cost of administration Medicinal iron is of little or no value in the persistent presence of hookworms After their expulsion it will be used as in any other anæmia whose cause has been removed, and there is evidence that arsenic may aid the bone-marrow in the formation of hæmoglobin The solution of the immense and important problem of eradicating ankylostome infestation so far as it depends upon mass treatment can only be effected by the discovery of some drug more specific in its toxicity to hookworms than any now known. The search for such a drug checked step by step by adequate controls is one of the most urgent matters for those who are concerned for the health of several hundreds of millions of the more humble dwellers in the tropics

CLAYTON LANE M D Lond
Lieut.-Colonel Indian Medical Service (ret.)

Special Articles.

THE HEALTH OF LONDON IN 1925.

Dr. F. N K Menzies presents the public health report which has been prepared in collaboration with Sir William Hamer, who was medical officer until the end of 1925 The report opens with a retrospect of public health effort in London since the appointment of the late Sir Shirley Murphy in 1890, and comparison is made with the survey of the same period made by the late Dr James Niven on his retirement from the post of medical officer of health of Manchester. There were many differences to record For example, London at the beginning of the period was already a water-carriage town, while Manchester had to grapple with the difficulties of middens, privies, and the pail system: on the other hand, Manchester had an *unexceptionable* water-supply, while London has had to put the finishing touches to that problem during the last three decades, and has done the work on quite different lines from those of Manchester. In both surveys *great importance is attached to the* removal of filth whether without or within the habitations of the people and both Murphy and Niven laid great stress on good systems of investigation of disease

Improved Environment.

In the present survey details are given to indicate the wonderful improvement in the environment of the Londoner The part played by education and more recently by the medical inspection and treatment of the school-children is emphasised and the following extract gives some idea of the change.

> Any observer who is old enough can recall the appearance of the poorer London children half a century ago when the London School Board was only just beginning to make its influence felt in the days of unregulated child labour, of boy bootblacks and child crossing sweepers: the days of "ragged schools" when bare feet were the rule and frost-bite ophthalmia running ears enlarged glands resulting from skin infestation malnutrition, and deformities were only too common and particularly any medical observer, familiar with the vermin-infested rooms of his midwifery experiences in the slums of London, or with the sight of the skins of children in out-patient departments many of which were peppered with hundreds of flea marks · such an one if he will stand and look at the scholars trooping into school nowadays will realise that the main cause of improved sickness and mortality statistics among the child population in the London of to-day is to be found in the heightened sense of parental responsibility, aroused in a generation of parents who have themselves passed through the schools.

The estimated population of the County of London for 1925 was 4 612 000 The birth-rate was 17·9, the death-rate 11 9, and the infant mortality-rate 68 The death-rate from phthisis was 0 95, from pneumonia 1·04, from bronchitis 0 9, and from cancer 1 44 The rates varied considerably in the 29 boroughs which make up the County of London. Thus excluding the small peculiar population of the City, the highest birth-rates were in Shoreditch 24 5, in Poplar 22 7 and in Bermondsey 22 6 while the lowest were recorded in Westminster 10 7 and in Holborn and Hampstead 12 2. Lewisham had the lowest death-rate, 10 4, while Hampstead, Battersea, and Wandsworth scored a *dead heat* for second place with 10 5 Fulham came next with 10 7 and then Woolwich with 10 8. The highest death-rate was recorded in Chelsea 13 7: Finsbury was next with 13 5 and Kensington Shoreditch, and Southwark were equal third with 13 2 Wandsworth had the lowest infant mortality-rate 54 Woolwich and Hampstead were second with 55 Lewisham had a rate of 56 and Battersea 58 The highest infant mortality-rate occurred in Shoreditch 88 · in Bethnal Green the rate was 81 in Kensington 79, and in Southwark 78 while Stepney, Poplar, and Bermondsey each had a rate of 76 The lowest phthisis rates were found in Hampstead, Lewisham and Paddington 0 59 0 61 and 0 65 respectively, while the highest phthisis-rates were in Finsbury 1 42

Stepney 1 26, Shoreditch 1 19, Bermondsey 1 17, and Woolwich 1·14

The lowest rates for pneumonia were recorded in Wandsworth 0 56, Battersea 0 62, and Hampstead 0 66, while the highest were in Bermondsey 1 59, Poplar 1 55, and Shoreditch 1 37 The lowest rates from cancer occurred in Shoreditch 1 13, Poplar 1 15, Greenwich 1 23, and Stepney 1 24, while the highest were in Chelsea 2,02, Kensington and Westminster each 1 76, and Islington 1 62

Changing Death-rates —Cancer, Small-pox, Influenza

A chart shows the changes in the rates for marriages, births, deaths, and infant mortality since 1840 Up to 1875 the marriage-rate was usually well over the mean figure of 19 and averaged over 20. Since 1875 it has usually been well below 19, but reached the figure of 19 in 1898, rose to 26 in the second year of the war, and was over 22 and 21 respectively in the post-war years of 1920 and 1921 The contour for the birth-rate remained above the mean figure of 30 5 until 1895, since which year there has been a steady decline interrupted by the post-war rise in 1920 The contour line for the death-rate has been below the mean figure of 20 2 since 1895, and has declined steadily since that date except for temporary rises in 1915 and the influenza year of 1918 The infant mortality-rate, unlike the last two, has only been permanently below the mean line since 1905. The average before that date was well over 150 and the decline since that date to the present figure has been very rapid, the chief temporary relapse to a worse state of things being in the hot year of 1911. Another chart shows the contours for groups of diseases and causes of death since 1840 Changes in nomenclature, however, in the classification of causes of death, and in the age and sex constitution of the population make it difficult to draw conclusions from these contours The authors of the report consider that "the view is still defensible that the increase in the mortality from cancer is very largely, at any rate, accounted for by increase in the population at high ages upon which the maximum mortality falls, and by the great improvement in accuracy of certification" They point out that among females the rate of increase has recently fallen They also express surprise that in an age which is reputed to be one of "nerve strain," "brain-fag," and "overpressure," diseases of the nervous system make so little impression upon records of mortality as compared with the far away 'sixties and 'seventies

How wonderfully clear London has kept of small-pox since 1911 is illustrated by a table The periodicity of influenza is discussed at some length and the conclusion is drawn that forecasts of the coming of influenza epidemics two years ahead cannot be made with accuracy The following rule is suggested as a guide, likely to prove more reliable than Dr Brownlee's 33 weeks' periodicity "When an epidemic of influenza reaches a maximum mortality in the half year between the ninth and thirty-fifth weeks (1) it will recur in the succeeding half year, (2) the two epidemics will, as to the time relation of their mortality maxima, tend to balance about the commencement of the thirty-fifth week of the year" A chart is given to illustrate the balancing of influence epidemics round the thirty-fifth week of the year both in the experience of London and Copenhagen A table is also given to illustrate the operation of this rule from 1890 to the present date According to this rule an epidemic should occur about the end of 1926 The epidemiology of typhoid fever in this country and the U S A. is considered, from which it would appear that in both countries the influenza of shell-fish was originally masked by the greater prevalence caused by infected water and infected milk, and that the elimination of drinking water infection in this country took place earlier than in the U S.A. and led to the recognition of shell-fish (and immature ungutted plaice) as a cause of "residual" typhoid at a correspondingly earlier date in Great Britain

The report from the bacteriological laboratory by Dr Graham Forbes illustrates how the examination of the cerebro-spinal fluid may aid the differential diagnosis between encephalitis lethargica, tuberculous and other forms of meningitis, and gross cerebral lesions Dr Forbes has also studied the rôle of the streptococcus in relation to throat infection and the transmission of puerperal fever and scarlet fever, and the remarkable chain of infection linking together cases of puerperal and scarlet fever recorded by Andrewes and Horder is cited

Tuberculosis —Venereal Disease

A history is given of the building up of the Council's tuberculosis scheme In June, 1915, the Council adopted a model for the establishment of tuberculosis care committees by the borough councils Owing to war conditions interim committees had to be appointed to the number of 30 These are being gradually replaced by permanent committees working under the borough councils, and at the present time all the boroughs except four have permanent committees at work In Islington and Bethnal Green the interim committees continue to function; in Lambeth the care work is carried out by the Lady Almoner's department of St Thomas's Hospital, and in Bermondsey the arrangement for this work is still in abeyance The chief duties of these committees are as follow —

(a) The provision of extra nourishment for the family (b) The provision of extra room or extra bed accommodation. (c) The provision of an open-air shelter for erection in the patient's garden (d) The removal of the patient to friends or relatives in the country, or the relief of the family by the boarding out of the children and the finding of suitable work for the patient or other members of the family (e) The care of the children and of the home during the absence of the mother and housewife (f) While avoiding anything in the nature of a sanitary inspection, which is carried out by officers of the borough council, the care committee bring to the notice of the public health authority any obvious defects, sanitary or otherwise, requiring investigation

The present method of selecting cases for residential treatment by clinical medical officers of the staff of the public health department aided by the use of observation beds gives more satisfaction than the methods tried previously The after-history of the patients who received residential treatment during part of 1914 and during 1915, and of insured persons recommended to sanatorium benefit in 1914, was not encouraging The number of cases inquired into was 2987 Of these 47 per cent were early cases, 20 per cent moderately advanced, and 24 per cent far advanced cases Of the early cases 15 per cent, of the moderately advanced 60 1 per cent, and of the far advanced cases 95 5 per cent. are dead

The need for improving conditions at the venereal disease centres which are likely to cause patients to default in attendance continues to receive careful attention The ratio of attendances to venereal cases during 1925 reached the very satisfactory proportion of 36 attendances to each new case, and it is claimed that this figure is not only an advance on previous years but compares favourably with the results obtained in countries where venereal diseases are compulsorily notifiable Another satisfactory feature about the London scheme is the increased use of the facilities for the examination of pathological specimens by medical practitioners There are now 423 practitioners entitled to free supplies of arsenobenzol preparations as compared with 108 at the end of 1917

Puerperal Sepsis

The midwives are supervised by four women medical inspectors, who pay special visits to midwives having cases of a septic nature or persistent high temperature or inflammation of the eyes. There were 316 cases of puerperal fever notified with 78 deaths, but in addition the Registrar-General recorded 26 deaths from puerperal sepsis unnotified during life About 41,000 confinements were conducted by midwives in independent practice, who summoned medical aid in about 17 per cent of their cases. In the practice of midwives there were 422 cases of true ophthalmia neonatorum Impaired vision in both eyes resulted in one case, in one eye in three cases, whilst in six cases the result could not be ascertained owing to removal Sixty-five cases received in-patient treatment at St Margaret's Hospital As regards beds available in London for maternity cases, it is estimated that about 37,000 patients could be accommodated, equal to 43 per cent of the total births Since 1915 the undesirable maternity home has disappeared, whilst the standard of efficiency in other homes has improved

THE POST-GRADUATE CONGRESS AT BUDAPEST

(FROM OUR OWN CORRESPONDENT)

THIS year the Hungarian post-graduate medical congress has been held in the neighbourhood of Lake Balaton Vast tracts of flower forests surround the lake which is so large that it is called the Hungarian Sea, and in the July weather it is an ideal place for a holiday Those who arranged the course of lectures did their best to make the occasion pleasant as well as useful The medical teaching was in the mornings only and the afternoons could be given over to bathing, fishing, and excursions An unprecedented number of doctors came to enjoy this happy mixture of relaxation and learning

The first lecture was delivered by Prof John Bokay, who spoke on his experimental results with the Dick prophylactic inoculations against scarlet fever He had been, he said, one of the first in Europe to try the method, and experience of more than 6000 cases had led to his complete agreement with the Dicks' opinions He saw the closest reaction between the positive result of the cutaneous test and susceptibility towards scarlet fever, and he regarded the Dick test as of great importance from the point of view of prophylaxis Active immunisation by the injection of toxins in gradually increasing doses transformed the reaction in 90 per cent of cases from positive to negative, and it appeared that the immunity thus produced was lasting His experience also corroborated that of American observers who could look back three years and who claimed that the immunity lasted at least for this time The disturbances which might occur during the production of immunity were very mild and were certainly not bad enough to stop the Dick method of inoculation spreading far and wide

Prof Csiky Jozsef, speaking on the pathology and treatment of headache, said that in his opinion the hereditary nature of neurasthenic headaches could not be contested Amongst the causes of headache arising outside the skull the greatest importance should be attached to rheumatism and it was remarkable that so little attention had been paid to this cause in Eastern Europe The treatment was very simple—systematic massage and warm fomentations

Dr Joseph Tornai gave an address on heart disease and pregnancy, in which he said that two or three decades ago the mortality of childbirth associated with heart disease was 30–60 per cent , nowadays it was only 12 per cent at the most Methods of examination, however, as he remarked, are more likely to reveal cardiac disease than they were formerly Besides the strain which pregnancy threw on the heart there was the fear that endocarditis might recur In general it could be said that in heart disease of slight degree, so long as the muscular action was strong the prognosis was fairly good Aortic disease was generally much more serious than mitral The law did not allow the doctor enough freedom of judgment in cases where abortion might be required It was very difficult to say when a patient ought to be advised against marriage but he thought that a girl and her parents should undoubtedly be told the facts

Prof Arthur Hasenfeld in a paper on angina pectoris, pointed out that even yet the ætiology of this disease was obscure From the point of view of prognosis and treatment he deemed it proper to discriminate between angina pectoris on the one hand and aorta syphilitica and aorta nervosa on the other As a prophylactic measure he thought it desirable that people who had contracted syphilis not more than 10 or 12 years before should receive specific treatment regardless of their condition or the results of a Wassermann reaction Prof Hasenfeld expressed himself as opposed to surgical treatment because it excited the patient and might provoke an attack, because it did not affect the fundamental coronary disease, and because pain was the natural warning sent by the heart when it was being given too much work to do

UNITED STATES OF AMERICA

(FROM AN OCCASIONAL CORRESPONDENT)

The Cost of Private Nursing.

SOME significant facts are emerging in the inquiry now being jointly conducted by the New York State Nurses' Association and the Committee on the Grading of Nursing Schools The practice of assigning one nurse on constant duty to attend one patient is now seen to be an anachronism. It dates from some 50 years ago when women's services were limited in scope, plentiful within their limitations, and consequently inexpensive To-day the reward paid for private nursing of $5 and $7 a day is not sufficient to draw large numbers to the profession and those who graduate as nurses are attracted in increasingly large numbers to salaried positions in institutions The daily pay after all is not large It was found that at a given time, and in the busy season (Feb 21st–28th), only 72 per cent of 1409 private duty nurses were at work , 23 per cent were at home, and 5 per cent were themselves sick in bed The nurse, therefore, is not at work all the year round And when she is at work her wage is found to average only 49 cents an hour, which is the equivalent of the earning capacity of "charwomen, servants, and unskilled labour " Nor is there prospect of advancement There are no grades in private nursing and a graduate of ten years' standing is not supposed to charge any more than a nurse fresh from her training Another count brought against private nursing is that the long hours of duty are unhealthy and demoralising, while the absence of professional occupation for a large part of the time adds to the demoralisation It was found that 80 per cent of the nurses at work were on 12-hour duty and 18 per cent on 24-hour duty Two solutions are indicated : the first is to increase the number of hospitals wherein each nurse can give attention to several patients ; the second solution is one which is already finding expression in the growing activity of the Visiting Nurse Associations Working for these associations the nurse visits several homes each day It happens sometimes that a patient is so seriously ill that one nurse is assigned for constant duty, but this is a service which is very rarely demanded even though it is available There may have been too much readiness to relegate to this system of care only those who cannot afford to pay for a full-time nurse There is no moral or economic justification for any professional worker spending 12 or 24 hours on work that can be done with efficiency in a small part of that time

The Spread of Tularæmia

The Bureau of Biological Survey has recently issued a warning on the prevalence of tularæmia Cases have been reported they say in 22 States, and in the district of Columbia which indicates in their opinion "that the disease probably occurs throughout the United States and that its recognition and occurrence in other States will be only a matter of time, as it was found in nine new States during the past year " The disease may be contracted by contact with the blood or internal organs of infected animals—jack rabbits, snowshoe rabbits, cottontails, and certain species of ground squirrels Many cases have occurred through dressing wild rabbits for the table or cutting them up for fish bait. Infection may also be transferred to human beings through the bite of blood-sucking flies and ticks In human beings the usual symptoms are headaches, chills, bodily pains, vomiting, prostration, and fever, followed by painful swelling and later suppuration of glands It is a disabling disease, incapacitating the patient for weeks or months and at times terminating fatally Occasional cases of conjunctivitis tularensis are also being brought to light. One that occurred early this summer was reported by Dr S W Jackson, of Atlanta, to the Georgia Medical Association A boy of 18 went hunting and killed and cleaned several rabbits Shortly afterwards his left eye became inflamed and assumed the appearance of acute purulent conjunctivitis The usual treatment gave no relief. Smears and cultures were negative, but a blood examination gave positive agglutination for *Bacterium tularense* This was said to be the fifteenth such case on record From the economic point of view tularæmia may prove a blessing It has virtually exterminated swarms of rabbits in some sections of Nevada, Arizona, Utah, and Wyoming, and it is now spreading to millions of destructive ground squirrels The fact that ground squirrels are susceptible reminds one of the anxiety in California recently from the infection of these same animals with plague Perhaps tularæmia may some day be used by health departments as a weapon against the latter more deadly disease

PARIS

(FROM OUR OWN CORRESPONDENTS)

The Coue Institute

NOT long ago the Minister of Labour and Public Health asked the Académie de Médecine to advise him whether the Coué Institute should be recognised as an establishment of public utility A commission of eminent neurologists was appointed to consider the question and reported to the Académie that although the study of metapsychics is of great interest the knowledge available in this domain is still too fragmentary and too controversial to be applied in scientific therapeutics All psychic and metapsychic institutes for treatment which are not wholly under the control of scientific men can have no scientific interest and may well be actually dangerous Accordingly the Académie has decided that it would be inopportune to recommend recognition of the Coué Institute as an establishment of public utility.

The Sale of Skim Milk

On behalf of the Public Health Committee of the Académie de Médecine Dr Jules Renault has lately published a report in which he concludes that skim milk and half-cream milk, whether in the form of condensed milk or powder, ought not to be put on sale unless clearly labelled " Not to be given to young children or to invalids except by the orders of a doctor."

Oriental Sore Contracted in France

As a result of the wars and massacres which have devastated the Near East, large numbers of refugees, most of them Armenians, have landed in France Generally their intention is to go on to the United States, but permits to enter America are refused to invalids A certain number of these refugees have been sufferers from oriental sore and Dr Jeanselme, professor of dermatology at Paris, reports the case of a Russian sailor who contracted the infection from one of them at Marseilles This is the second time that indigenous oriental sore has been noted in France The first case was that of a child who lived during the war in proximity to a company of Kabyles and other North African natives

Vaccinotherapy for Varicose Ulcers

Dr Léon Tixier and Dr P.-R Bize, of Paris, recently communicated a paper to the Société Medicale des Hôpitaux de Paris on the use of intramuscular injections of propidon for chronic ulcers of the legs It is given in increasing doses and the results are described as remarkable There is no doubt, they say, that vaccines have an action in restoring nutrition, acting at first on the ulcer by promoting granulation and reducing suppuration, and later on the peripheral tissues Congestion is reduced and finally disappears and pain is eventually abolished

Foreigners in Marseilles

For a long time past the large number of foreigners in Paris hospitals has been arousing comment The situation appears to be even worse in Marseilles, where in 1925, of 25,248 patients treated some 28 per cent were foreigners. Most of them are Italians, for in certain parts of Italy it is traditional to seek one's fortune in Marseilles It would be a good idea if Italy set up an Italian hospital in Marseilles, or at least gave a grant to the Marseilles hospitals, which find it difficult to carry on under the present strain Most of the other foreigners come from the Near East, and Mr Léon Imbert, who has issued a statement on the situation, holds that it would be suitable for the French Government which has allowed or even encouraged their entry into France, to make some contribution to the expenses which weigh so heavily on the city's budget.

League of Red Cross Societies

Colonel Ernest P Bicknell, chairman of the Central Committee of the American Red Cross, has been elected vice-chairman of the board of governors and will act temporarily as director-general of the League, in place of Sir Claude Hill, who has been appointed Governor of the Isle of Man Sir Claude Hill has been elected honorary director-general in recognition of the wise and valuable guidance which he has given to the League The new administrative commission of the League, appointed by the executive committee, consists of E J. Conill, Cuban Red Cross; H E Geoffray, of the French Red Cross; and Colonel Draudt, of the German Red Cross The board of governors is expected to meet at Paris on May 4th, 1927

French Flour

By decree of the Minister of Agriculture, French flour must now include by-products resulting from the grinding of the grain, these have hitherto been considered waste or have been used for feeding farm animals, or in other ways

Degrais has presented to the Société de Médecine de Paris an analytical study showing the superiority of radium to cryotherapy and other methods in the treatment of angioma Radium, he says, is perfectly safe when employed by competent therapeutists, it is applicable to angiomas of any size and occupying any site, it is painless, it gives perfect cosmetic results, it is applicable at any age, and it never fails

Acetylarsan has been tested for the treatment of yaws by Boisseau in the Congo region It proved efficacious, he says, in 80 cases, representing all ages Two injections of 0 23 g each, corresponding to 0 05 g arsenic, usually sufficed The injections were given 48 hours apart

There are still a few vacancies for the tour of the French spas of the Vosges region, which will be held from August 29th to Sept 8th The fee is 1050 francs, and particulars may be had from Dr Gerst, 94, Boulevard Flandrin, Paris

A post-graduate course on affections of the alimentary canal will be held from Sept 13th to 24th at the Medical Clinic of the Hôtel Dieu, under the direction of Prof Maurice Villaret A three days' study tour to Vichy will follow Further particulars may be had from the Secretary of the Faculté de Médecine in the University of Paris

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Summer Adjournment

PARLIAMENT adjourned on Wednesday, August 4th, for the Summer Recess The date of reassembling was fixed as Tuesday, Nov 9th, but if the stoppage in the coal industry is still proceeding a special sitting of Parliament will be called by Proclamation on August 30th, and monthly thereafter, in order to renew the Regulations under the Emergency Powers Act Among the measures which received the Royal Assent before the adjournment was the Midwives and Maternity Homes Act, 1926

Economy in Hospital and Medical Services

The Select Committee on Estimates have issued a second report to the House of Commons on the possibilities of greater coördination of common services between departments with special reference to the three fighting Services In a section of the report dealing with hospitals and medical services the Committee state —

"One of the recommendations of the Mond-Weir Committee was that a Joint Medical Committee representative of the three fighting Services and the Ministry of Pensions should be set up to secure greater coördination This Committee was appointed in July, 1923, but it has only met eight times in three years The Committee attempted to obtain some standardisation of medical returns for the three fighting Services, but their labours only resulted in the combination of two of the forms used by the Army and Air Force Your Committee were also informed that this Committee had never been able to consider the relative cost of the hospitals maintained by their respective departments because the methods of costing were different They strongly recommend that similar methods of costing should be adopted, and that as far as possible, all forms serving a similar purpose should be standardised

"Although the Mond Weir Committee recommended that greater use should be made of Army mechanical transport by the Navy and Air Force, your Committee regret to find that no steps appear to have been taken in this direction, apart from some experiments in the standardisation of ambulances, which are still going on

"One of the functions of the Joint Medical Committee is to consider the amalgamation of hospitals where possible The amalgamation of the hospitals at Gibraltar and Chatham was carried out in 1922, before the Joint Committee was set up Since that date a scheme for the amalgamation of the three hospitals at Hong-Kong and Kowloon has been prepared, but has been delayed owing to recent events in that part of the world. Schemes for the amalgamation of the naval and military hospitals at Devonport and Plymouth and the two Air Force hospitals at Baghdad are under consideration, and your Committee hope they will be pressed forward Your Committee also recommend that further consideration should be given to the possibility of combining the Army hospitals at Dover and Shorncliffe, of accommodating the wives and children of Army ranks stationed at Chatham in a wing of the Naval Hospital there, and abolishing the small Army hospital still maintained for this purpose Your Committee also consider that the military hospital at Cosham might be absorbed either by Netley or the Naval Hospital at Haslar Under existing circumstances the number of equipped beds maintained at both Netley and Haslar is too large, even allowing for the trooping season, and should be reduced

"The naval and military hospitals at Malta are only some five miles apart, and there is ample vacant accommodation in the naval hospital for Army purposes With modern motor transport such a distance is not insurmountable, and the only other argument against amalgamation advanced by the War Office—namely, that the Admiralty found their hospital too small for their own requirements—is not correct Your Committee consider this question should receive early consideration.

"Your Committee investigated the scale of hospital accommodation provided for the Royal Air Force They noticed that there did not appear to be any general fixed scale, even as a basis of calculation of hospital accommodation to establishment Where accommodation was required it was provided on the basis of the requirements of the year immediately preceding that in which the demand was met This does not appear to the Committee to be a scientific or economical method of laying down a scale of hospital accommodation

"The Ministry of Pensions is unable to utilise military hospitals to any appreciable extent, as they are not situated in large centres of population, where most of the ex-Service men reside

"Your Committee consider, however, that a section of the surgical hospital at Roehampton should be set aside for nurses and the small nurses' hospital at Fernbank closed down "

On the subject of contracts the Committee state that the Air Ministry and Ministry of Pensions have a joint contract with the War Office for the supply of medical stores The Committee see no reason why the Admiralty should stand out of this contract Under the heading of Works Services the Committee state —

"In your Committee's detailed examination of the works under execution by the Royal Air Force it was brought to notice that at Halton a dental hut was being erected at a cost of £1,700 in the middle of the camp They were informed that this was solely to suit the convenience of the establishment although accommodation could have been made available in the hospital which is also being erected in the same camp

Your Committee were also informed that, although the new hospital at Halton will have nearly a hundred fewer beds than the existing one accommodation for the same staff is being provided. The Air Ministry stated that this was due to the fact that the existing hospital is under staffed After comparing the existing staff with that of other hospitals, your Committee do not agree with this statement, and consider the estimate for the new staff to be excessive "

Among the Committee's principal recommendations are the following —

That in the case of the hospital services of the three fighting Services and the Ministry of Pensions, similar methods of costing should be adopted and medical forms standardised to facilitate comparisons

That the question of the amalgamation of the naval and military hospitals at Malta, at Devonport, and Plymouth, the two Air Force hospitals at Baghdad, and the military hospital at Cosham with either Netley or Haslar should receive early consideration

That the War Office civilian hospital at Chatham and the Ministry of Pensions hospital at Fernbank should be closed.

That the estimate of the Air Ministry for the staff of the new hospital at Halton should be reduced.

The Factories Bill.

The text of the Factories (No 2) Bill, which was given a first reading in the House of Commons on Monday, August 2nd, has now been published (Stationery Office. 2*s*) It contains 140 clauses and is a measure which has been under the consideration of the Home Office for a considerable time While it is similar in some respects to the Bill brought in, with the approval of Mr ARTHUR HENDERSON, by the Labour Party, which was discussed in the House of Commons on March 6th, it differs from that measure in important particulars, and should be studied therefore as a new Bill

An official memorandum explaining the extent to which the Bill differs from the existing law was published simultaneously by the Stationery Office (3*d*) This memorandum states that—

The Bill has been introduced in order that the different industries affected may have the opportunity during the autumn and winter of examining the proposals for the amendment of the Factory Acts, which are being put forward by the Government for consideration, of consulting among themselves with a view to arriving at agreements on disputed points, and of submitting any representations they desire to the Government The Bill is the result of a very careful review of the results of the long experience which has been acquired by the department concerned in the administration of the existing Act of 1901, of the inquiries of the numerous committees which have considered different parts and aspects of the wide field of industrial regulation and of experiments and investigations conducted by the industries themselves and by individual manufacturers

The Government do not expect that in a Bill of this kind, affecting many industries of widely varying character and dealing with a wide range of problems arising over the whole field of industrial health, safety, and welfare, there will not be many points in regard to which differences of opinion, possibly wide differences, may prevail in different quarters, but they believe that on the whole the Bill raises the general standard of factory conditions to the level of the better managed and more efficient factories, without placing any undue financial burden on industry, and that the result will be to promote the efficiency of industry as well as the welfare of the workers

The Bill abolishes the distinction which exists in the present law between factories and workshops and between textile and non-textile factories and employs only the one term "factories"; and, except where otherwise expressly provided, the provisions of the Bill apply indifferently to factories of all descriptions. Under the existing Acts, the provisions relating to the sanitary condition of workshops cleanliness, overcrowding, ventilation, and the drainage of floors, are enforced in the first instance by the local sanitary authorities and not by the factory inspectors (as in factories), and the provisions as to sanitary conveniences, both in factories and in workshops, are, in London and in any place where Section 22 of the Public Health Acts (Amendment) Act 1890, is in force, also enforced by the sanitary authorities.

Under the Bill, all the corresponding provisions are enforceable by the factory inspectors, except that in any factory in which mechanical power is not used and which forms part of a dwelling house or shop, or is adjacent to a dwelling house or shop in the same occupation the provisions are to be enforced by the sanitary authority and in the case of any other factory in which mechanical power is not used the Secretary of State if satisfied that the provisions would be satisfactorily enforced by the sanitary authority is to delegate the duty to them

These alterations are of general application The other alterations are alterations of particular provisions and are indicated in a table subjoined to the memorandum in which, however, only alterations of substance are noted

Part I contains general provisions in regard to health. Clauses 2 to 8 relate to cleanliness of factories and workshops, overcrowding, temperature, ventilation and lighting, the drainage of floors, and the provision of sanitary conveniences Freedom from effluvia arising from any drain, sanitary convenience, or nuisance is insisted upon, and all accumulations of dirt and refuse must be removed from the floors and benches of workrooms as well as from the staircases and passages, and among other things it is provided that all inside walls, partitions, and ceilings shall be washed or recoloured every 14 months A factory is to be deemed to be overcrowded if the number of persons employed in any workroom is such that the amount of cubic space allowed for each employee in the case of factories constructed before the passing of the Act is less than 250 cubic feet, or, in the case of any other room, less than 400 cubic feet Measures are to be taken to prevent the escape of injurious or noxious fumes into the air of any workroom, and in every workroom in which a substantial proportion of the work is done sitting the temperature must not, after the first hour during which the work is going on, fall below 60° In regard to all these clauses the Home Secretary may make special orders dealing with the standard of cleanliness, temperature, the provision of fresh air, and so on

Clauses 9, 10, and 11 deal with the power of district councils to enforce certain provisions of Part I, the powers of an inspector as to sanitary defects remediable by the district council, and the powers of the Secretary of State in cases where he is satisfied that there has been default on the part of the district council Under Clause 10 an inspector is empowered to take with him into a factory a medical officer of health, sanitary inspector, or other officer of the district council Clause 12 enables the Home Secretary, after consultation with the Minister of Health, to make provision for the special medical supervision of the workers in any factory, or class or description of factories, where such action appears to be necessary

Part II of the Bill (Clauses 13 to 36) deals with general provisions as to safety Under Part III (Clauses 37 to 41) general welfare provisions are included in regard to the supply of drinking water in factories, first-aid facilities, the provision of seats sufficient to enable all female workers to rest during intervals in their work, the supply of protective clothing against acids and noxious or offensive substances, and the powers of the Home Secretary in regard to welfare orders

Special arrangements for health safety and welfare are also made in Part IV (Clauses 42 to 58) Among the most important of these are the removal of dust or fumes, the prohibition of spitting, the meal rooms of workers in dangerous trades, the prohibition of the use of "white phosphorus" in the manufacture of matches, the prohibition of the employment of female young persons in certain processes, of women and young persons in lifting excessive weights, of women and young persons in certain processes connected with lead manufacture, and of women and young persons in processes involving the use of lead compounds Underground workshops will be prohibited in certain prescribed industries where the inspector for the district certifies the room to be unsuitable for the purpose as regards construction, light, ventilation, or in any other respect Basement bakehouses, except such as were in existence before the passing of the Act, will not be permitted In Clause 55 the Home Secretary is given power to make regulations which appear to him to be reasonably practicable for securing the safety or health of persons employed in industries requiring special measures

The notification and investigation of accidents and industrial diseases are dealt with in Part V (Clauses 59 to 64) Clause 61 provides —

(1) Every medical practitioner attending on or called in to visit a patient whom he believes to be suffering from lead, phosphorus, arsenical or mercurial poisoning, or anthrax, contracted in any factory, shall (unless such a notice has been previously sent) send to the Chief Inspector of Factories at the Home Office, London, a notice stating the name and full postal address of the patient and the disease from which, in the opinion of the medical practitioner, the patient is suffering, and the name and address of the factory in which he is employed or in which the disease was contracted, and shall be entitled in respect of every notice sent in pursuance of this section to a fee of two shillings and sixpence, to be paid as part of the expenses incurred by the Secretary of State in the execution of this Act (2) If any medical practitioner, when required by this section to send a notice, fails forthwith to send the same, he shall be guilty of an offence, and liable to a fine not exceeding 40 shillings (3) Written notice of every case of lead, phosphorus, or arsenical or mercurial poisoning, or anthrax, occurring in a factory shall forthwith be sent by the occupier in the prescribed form and accompanied by the prescribed particulars to the inspector for the district, and the provisions of this Act with respect to the notification of accidents shall apply to any such case in like manner as to any accident as is mentioned in those provisions (4) The Secretary of State may by special order apply the provisions of this section to any other disease contracted in a factory

Clause 62 provides that where a coroner holds an inquest on the body of any person whose death may have been caused by any accident or disease of which notice is required to be given under the Act the coroner shall adjourn the inquest unless an inspector or some person on behalf of the Secretary of State is present to watch the proceedings Among other provisions in the clause there is a subsection which states that where evidence is given at an inquest at which an inspector is not present of any neglect as having caused or contributed to the accident or disease, or of any defect in or about the factory appearing to the coroner or jury to require a remedy, the coroner shall send to the inspector for the district notice in writing of such neglect or defect Clause 63 gives the Home Secretary power to direct a formal investigation of any accident or disease occurring or contracted in a factory and its causes and circumstances

Clause 64 provides —

(1) It shall be the duty of the appointed doctor to investigate and report (*a*) upon cases of death or injury caused by exposure to fumes or other noxious substances, or due to any other special cause specified in instructions of the Secretary of State as requiring investigation, and (*b*) upon any case of death or injury which the inspector for the district in pursuance of any general or special instructions of the Secretary of State may refer to him for that purpose, and (*c*) upon any case of disease of which notice is sent under this Act (2) The appointed doctor, for the purpose of an investigation under this section, shall have the same powers as an inspector, and shall also have power to enter any room in a building to which the person killed, injured, or affected has been removed

Part VI prohibits the employment of children in factories and prescribes the conditions under which women and young persons may be employed Women and young persons may not be employed for more than ten hours in any day, or 48 hours in any week, and their employment shall not begin before 6 A.M. or end later than 8 P.M. on week-days and 2 P.M. on Saturdays Not more than 4½ hours may be worked without an interval of half an hour for a meal Notwithstanding these provisions such persons may work 100 hours overtime in the year, provided such overtime does not exceed six hours in any week. It is further provided that young persons under the age of 16 shall not remain in factory employment after a specified period unless they have been examined by an appointed doctor and certified to be fit for the employment In the section which deals with home work a clause is inserted providing that —

"Where work in respect of which this section applies is carried on for the purpose of or in connexion with the business of a factory in any place which is, in the opinion of the district council, injurious or dangerous to the health of the persons employed therein, the district council may give notice in writing to the occupier of the factory or to any contractor employed by him that the place is so injurious or dangerous, and if the occupier or contractor after the expiration of one week from the receipt of such notice gives out work to be done in that place he shall, unless it is proved to the satisfaction of the Court dealing with the case that the place is not in fact so injurious or dangerous, be guilty of an offence and liable to a fine not exceeding £20"

Clauses 112 and 113 deal with the appointment, duties, and fees of appointed doctors under the Act Clause 112 provides —

(1) The Secretary of State, and, if the Secretary of State so directs, the chief inspector, may appoint a sufficient number of duly qualified medical practitioners to be appointed doctors for any of the purposes of this Act, and may revoke any such appointment Provided that where under this Act the duty of arranging for the medical examination or certification of young persons has been transferred to the local authority for any district, the appointed doctor for those purposes in that district shall be appointed by the local authority (2) A medical practitioner who is the occupier of a factory, or is directly or indirectly interested therein, or in any process or business carried on therein or in a patent connected therewith, shall not be the appointed doctor for that factory (3) The appointed doctor for any factory shall have power at all reasonable times to inspect the general register of that factory (4) The Secretary of State may make rules prescribing the duties of appointed doctors (5) If and so long as there is no appointed doctor for a factory, the Poor-law medical officer for the district in which the factory is situate shall act as the appointed doctor for that factory (6) References in the Workmen's Compensation Act, 1925 to a certifying surgeon shall be construed as references to an appointed doctor appointed by the Secretary of State or chief inspector under this section

Clause 113 provides that the fees paid to doctors shall be such as may be determined by the Home Secretary, and such fees shall in the case of any examination or certificate with respect to the fitness of a young person for employment in a factory and in the case of any examination in pursuance of regulations of a person employed in a factory be paid by the occupier of that factory, and in any other case shall be defrayed as an expense of carrying the Act into effect

By Subsection 3 of Clause 114 it is provided that the medical officer of health of every district council shall—

(*a*) in his annual report to the council report specifically on the administration of and furnish the prescribed particulars with respect to the matters under Part I (Health) and Part VIII (Homework) of the Act which are administered by the district council, and shall send a copy of his annual report or so much of it as deals with those matters to the Secretary of State and (*b*) give written notice to the inspector for the district of any factory coming to his knowledge in which no abstract of the Act is affixed in accordance with the Act

Part XII, which deals with penalties and legal proceedings, provides that the owner or manager of a factory guilty of an offence in contravention of the Act shall be liable to a fine not exceeding £20, and in the case of a continuing offence to a fine not exceeding £5 for each day of its continuance In cases of death or injury it is provided .—

"If any person is killed, or dies, or suffers any bodily injury or injury to health in consequence of the occupier or owner of a factory having neglected to observe any provision of the Act or any order or regulation made in pursuance of the Act, the occupier or owner of the factory shall be guilty of an offence, and, without prejudice to any other penalty, liable to a fine not exceeding £100 and, in the case of a second or subsequent conviction in relation to a factory within two years from the last conviction for the same offence, not less than £10 for each offence, and the whole or any part of the fine may be applied for the benefit of the injured person or his family, or otherwise as the Secretary of State determines "

HOUSE OF COMMONS

MONDAY, AUGUST 2ND

Accident at Orpington Hospital.

On the motion for the third reading of the Consolidated Fund (Appropriation) Bill,

Mr HAYES raised a question in regard to an ex-Service man named William Richardson, who while a patient at the Ministry of Pensions Hospital, Orpington, in 1921, was knocked down and run over by a motor-car within the grounds of the institution. In a question which he had asked the Minister of Pensions on June 17th he suggested that the treatment which the man received in the hospital was not qualified or proper treatment The reply of the Minister, which he regarded as unsatisfactory, was that the Ministry could not accept liability in the matter because the accident occurred at the hospital gates, and was caused by a private motor-lorry which had no connexion whatever with the Ministry The Minister had added that he could find no grounds which in any way supported the suggestion of neglect or improper treatment on the part of the hospital staff During the time that had passed since the question was last raised he had been able to obtain information which not only confirmed the statements he had made, but added to them and he hoped that the Parliamentary Secretary, who he understood would reply on behalf of the Minister, would see the necessity of an inquiry into the matter In July 1921, Richardson was sent to Orpington Hospital for treatment for neuralgia and nerves On Nov 27th he was inside the grounds talking to a military policeman. A motor-car proceeding outside the hospital grounds came into collision with the corner of the wall of the hospital grounds and dashed into the grounds of the hospital When it was six or eight yards inside the grounds it struck Richardson He was seriously injured and taken into the hospital He was not seen by the hospital surgeons in fact he was in his own ward for two or three hours before he was seen by a doctor at all. He was then seen by a physician and not by a surgeon. The physician said that his leg was badly bruised. No further steps were taken, and the man lay for 21 hours in the greatest pain with no further attention. Another 24 hours passed before the leg was X rayed, and it was only on Tuesday afternoon at 1 o clock—the accident had occurred on the Sunday afternoon—that he was visited for the first time by a hospital surgeon The limb was then examined and the surgeon said that it must be put into splints as soon as possible Two hours later, or 51 hours after the accident, the sister in charge of the ward with two orderlies commenced to set the limb without any anæsthetic local or general, and without any qualified assistance It might be that up to that point there was no direct negligence or improper treatment, if it were the practice in any hospital for fractured limbs to be set by persons other than qualified surgeons But he submitted that even if that was the practice, or if a limb could be set by a nurse assisted by orderlies it was a highly improper proceeding that a man who was known by X ray examination to be suffering from a fracture should be treated in that way The man s description of what he went through was something of this kind - ' The sister got two orderlies and three or four patients to hold me down and then started pulling and twisting my limb unmercifully before applying the splints." That statement could be supported by substantial testimony For 17 weeks the man lay in his bed and when the splint was removed the limb was bent and twisted out of all recognition Five days after the splint was removed the man received orders to leave the hospital immediately After protest the man left and on his return home saw his panel doctor who after examining him said that he could do nothing in view of his terrible state The man then went to the Sussex County Hospital for treatment. There he was examined by a surgeon a Dr Turton who was also a doctor or surgeon of the Ministry of Pensions Dr Turton was aghast as was also the surgeon-specialist who collaborated with him They found that little or nothing could be done except by amputation and the limb was subsequently amputated He submitted that the man was inside the hospital grounds when the accident occurred, but even if he were not he would not have been at Orpington at all but for his condition which was directly due to his war service. The responsibility for his presence in that hospital ought to be accepted by the Government.

Lieut-Colonel STANLEY (Parliamentary Secretary to the Ministry of Pensions) said that he realised that Mr. Hayes was raising this matter because of his interest in the man's case, and not from the party point of view, but there were one or two statements in his narrative with which he could not agree. At the time of the accident the man was standing at the gateway of the hospital, and in a thick fog a motor-lorry mounted the pavement and ran into him and knocked him down Clearly the Ministry were not responsible, and attempts were made to trace the responsible party. The lorry itself was actually traced to a firm in the town, but they were able to prove that it was taken out without their consent or knowledge, and they could not be held liable. Mr Hayes had made accusations which he (Colonel Stanley) thought he could hardly believe himself In effect he said that the treatment of this man in the hospital was extremely brutal and that he was not attended to for two or three hours after the accident. He had gone through the whole case carefully and as he read the evidence the man was seen by a doctor at once and was X rayed on the following day It was not until then that it was ascertained that he had broken his leg There were plenty of cases where a fracture was not revealed except as a result of an X ray photograph, and that was the case on this occasion. As soon as the discovery was made that the leg was broken the limb was set. There was no evidence that it was not perfectly properly treated and every possible care taken of the patient. All the time that the man was in the hospital the man made no complaint whatever of his treatment to the head of the hospital When he was discharged five months later the X ray photograph showed that his leg had joined satisfactorily and was in a good condition A court of inquiry which was held as soon as possible to investigate the whole case found that the accident was not the fault of the man nor was it the fault of any official or servant of the Ministry He could not see on what grounds, legal or moral Mr Hayes could claim that this man should be pensioned for his disability If the hon. Member had fresh evidence it would be examined, but unless it was something completely new which could be corroborated he honestly did not see how he could claim that this man should be pensioned for anything else except his war disability

The Bill was read a third time.

TUESDAY, AUGUST 3RD

Rural Housing Bill

Mr NEVILLE CHAMBERLAIN (Minister of Health), in moving the second reading of the Housing (Rural Workers) Bill said there were two features which distinguished the rural housing problem from the urban problem. One was that in the country districts they had a population which was, generally speaking stationary, if not declining and the other was that even in pre-war times the agricultural labourer was never in a position to pay an economic rent for his house. Perhaps to that fact must be ascribed the practical stagnation of house building in rural districts for a great number of years. While the rural housing problem was certainly strictly limited in its extent he did not want to convey the impression that there was no shortage of houses in the country districts As a matter of fact there was a considerable amount of overcrowding in the villages. That overcrowding was partly due to the economic position which had caused a large number of houses to fall into disrepair and become according to modern ideas uninhabitable, though that did not always mean that they were uninhabited It was also partly due to the fact that in many districts there had been an invasion of the country by the town dwellers This had deprived the agricultural workers of the opportunity of getting improved houses

This Bill did not attempt to deal with the question of new building Even the increased subsidy given under the Act of 1924 had not been sufficient to produce any marked activity in the rural districts but it had produced some. Up to the present about 200 local authorities had submitted for the approval of the Minister of Health schemes for providing some 7100 houses The cost, however was very high. The capital value of the Exchequer contribution towards these agricultural houses might be put at about £220 per house and to that they had to add another £80 which was the capital value of the extra subsidy to be provided by the local authority Our country villages contained a great deal that was characteristic of old England in style and material and in the architecture of the cottages It would be something like an act of vandalism if they were to destroy these remainders of an older and more picturesque world in order to replace them with buildings which though they might be sensible, were of a different style and could not be said to harmonise with their surroundings There was, therefore a strong case for the underlying idea of the proposals in this Bill—namely, that they should devote themselves now to an attempt to recondition the old houses in the country and bring them up to modern standards of comfort and of sanitation where they were substantially built It might be asked why the Government proposed to use public money to induce landlords to do what they ought to do themselves without public assistance The answer was that a good many of these landlords were people of small resources who had not the capital necessary to make even such comparatively small alterations as the Government had in mind, and it was not likely without some extra stimulus that they would do in the future what they had not found it possible to do in the past

Proceeding to describe the Bill in detail Mr Chamberlain said that Clause 1 enabled local authorities to submit for the approval of the Ministry of Health schemes for the improvement of houses in the country The second clause defined the power of the local authority to give assistance, and stated that the assistance may either be by way of grant or by way of loan, or by both The assistance is to be given only to houses whose value after they have been altered does not exceed £400 No assistance may be given where the total cost is less than £50 The local authority can refuse to give any assistance at all if they are not satisfied that the house when it is completed is going to be satisfactory for habitation, and a special provision prevents the clause being applied to slums There is a time limit on the operations of the Bill, and applications for assistance must be put in within a period of five years Where the assistance is by way of grant, the grant may be made either by way of lump sum or by way of an annuity It must not exceed two-thirds of the estimated cost of the works, and it is also limited to a maximum of £100 per house It is also subject to various conditions which restrict the rent and limit the class of occupants If any of the conditions are afterwards broken the grant becomes repayable together with compound interest, and is made a first charge on the house Where the assistance is given by way of loan the loan may be made on mortgage up to 90 per cent of the value of the altered house, and advances may be made while the works are in progress up to 50 per cent of the work which has at any time been done

In Clause 3 it was provided that for a period of 20 years the house must not be let to anyone whose income is not comparable with that of an agricultural worker, and furthermore during the same period the rent must not be more than the normal agricultural rent plus 3 per cent upon the amount expended upon the alterations by the owner himself The normal agricultural rent was defined for the purposes of the Bill as the average rent paid during the preceding five years, or if it had not been so let, the rent generally paid in the district by agricultural labourers The owner may rid himself of the conditions which he has undertaken providing that he repays to the local authority the grant which he has received, together with compound interest up to date Clause 4 defined the Government contributions to the expenses of the local authorities The Government contributions must not exceed one-half of the assistance given by the local authority, and as the local authority's assistance was two-thirds of the total cost it would be seen that they contemplated dividing the cost equally, one-third being borne by the Government, one-third by the local authority, and the remainder by the owner himself Clause 5 defined what was to be a local authority for the purpose of the Bill He had come to the conclusion that on the whole the county council was the best authority to undertake the work in the majority of cases, but in cases where the district council ought to be the authority that matter could be adjusted at the discretion of the Minister Clause 6 dealt with the application of the Bill to Scotland

Mr A GREENWOOD, in moving the rejection of the Bill on behalf of the Labour Party, said that the sum which the Minister of Health took away from the insured persons earlier in the year was to go to provide an additional subsidy to the many already enjoyed by the landlords of the countryside The Bill was full of deceptions, and its principle was one with which the Labour Party could not agree

Lieut -Colonel FREMANTLE said there were two things which were particularly piteous to those who had the practical dealing with housing difficulties on the spot The first was that the obvious needs of housing were made a cockpit of politics and were opposed not for housing reasons, but for reasons of political theory pure and simple That was the reason of the opposition to this Bill The second thing was that one saw the old long-tried remedy repeated in different forms again and again brought into the House and put into legislation with the same kind of ideas and ideals, only to prove perfectly useless and worthless in actual practice He wanted to follow out those two remarks from the point of view of an old and tried medical officer of health On paper it was obvious that it would be better to sweep away old and bad housing and to rely on new housing They had tried that method for the past seven years, and they had tried it for years before the war The result had been a few thousand houses built in the country, but that had not touched the real problem, especially the need of the labourer The people could not possibly wait until they could build the necessary number of new houses and close the old ones It had been the one constant endeavour of medical officers of health, especially under the 1909 Act, to pull together the work of all the district officers throughout the county, to summarise their reports, to bring the results before the county council, and to work hard in coöperation with the district authorities in order to see that action was taken where they could not induce the county council itself to use its powers or to take more drastic steps The result of all this procedure officially was very slight, but in actual practice he would not say that it had been so slight This procedure had applied all kinds of pressure and had resulted in education of a most valuable kind It had been found, however, that the district council was too close to the man to be coerced to be able to use powers of coercion properly If they took the larger area—the area of the county—he hoped that they would be able to act more effectively But mere coercion would not solve the problem they must look the economic facts in the face Would they get managers to run estates any more cheaply than the landlords did now? He believed that the present way of running them was the cheapest, but like many other cheap things it did not give altogether satisfactory results He was disappointed that the Opposition had not put forward some constructive proposals calculated to lead to more effective results He was perfectly certain that it would be impossible for the State to take over these bad houses, put them into repair, and manage them They must at the present moment deal with the situation as they found it On the question whether the county council or the district council should be the authority in this case he could conceive of only one way in which the county council could properly manage public health affairs, and that was by the firmest coöperation between the two bodies The district council was in many cases quite unequal to the responsibilities which a much higher standard of public health wished to impose upon them, and it was there that the county council must come in In this Bill the authority was given in the first instance to the county council, but they had power to devolve it in certain cases to the district council He thought that that was probably the right line

The Bill was read a second time by 213 votes to 71

Lead Paint Poisoning

On consideration of the Lead Paint (Protection against Poisoning) Bill, as amended in Standing Committee,

Mr RHYS DAVIES moved a new clause to prohibit the use of lead paint in painting the interior of buildings He said that it was an erroneous deduction that the Government and their supporters had arrived at that Regulations would prevent lead poisoning There was, in fact, no way of dealing with the question except by the total prohibition of the use of white lead in paint This new clause, if carried, would ratify what was termed the Geneva Convention

Mr MONTAGUE seconded

Major HILLS supported the clause The Geneva Convention was signed by the British delegates at Geneva, and he did not wish to see this country fall behind in leadership in industrial reform.

Captain HACKING (Under Secretary for the Home Department) said there was no breach of faith in this matter Sir Montague Barlow, who signed the Geneva Convention, had declared that he voted as he did on the basis of the compromise being a satisfactory one acceptable to all It was clear that the compromise was not acceptable to all A Departmental Committee afterwards reported, and Sir Montague Barlow said that the report seemed to indicate that in view of recent discoveries some of the restrictions embodied in the Draft Convention were no longer of such vital importance as they had been Prohibition for indoor painting and regulation for outdoor painting would be a difficult arrangement to carry out. Regulation as a whole would be much easier to put into operation with success These regulations were only in the nature of an experiment If they failed the Government would not hesitate to bring in another Bill far more drastic with prohibition as its essence He appealed to the employers to coöperate in making the Regulations a success

The new clause was rejected by 198 votes to 74

Dr WATTS moved an amendment to Clause 1 to provide that a medical examination of those engaged in the industry should take place monthly He said that he had had 25 years' experience with regard to lead poisoning and he attached the greatest importance to the method of preventing lead poisoning by medical examination Hon Members had spoken as though lead poisoning were an acute disease and might arise from one exposure to infection He would remind them that it was a chronic disease, which often took months, and even years, to develop Fortunately, it had certain well-marked premonitory symptoms by which it could be easily recognised by medical examination, such as the progressive anæmia and the destruction of the red corpuscles of the blood, which could be easily recognised by the analyst and by the medical examiner, and there was the power under these Regulations to suspend from employment a workman whose health was or appeared likely to be injuriously affected, such as had been found previously, in the case of carbon bisulphide poisoning and mercurial poisoning to be quite sufficient. In order, however, that the examination might be absolutely efficient it was necessary that it should be carried out at certain stated intervals, and that was why he suggested the insertion of the word "monthly."

Captain **HACKING** said he could not accept the amendment, but if his hon. friend would agree to the word "periodical" he would accept that

Dr **WATTS** withdrew his amendment and the word "periodical" was agreed to

Dr. **WATTS** moved an amendment to provide that the medical examination should be made by a certifying factory surgeon. He said that under the Bill the examination could be made by any medical man, but he wished to restrict the department to an examination made by a certifying factory surgeon—that was a surgeon who had had considerable experience in examining and treating cases of lead poisoning

Captain **HACKING** said he could not accept the amendment Whilst almost always the Home Office had the examinations made by certifying factory surgeons, it might be necessary in certain cases that a specially appointed doctor should be substituted. But the great qualifications of the certifying factory surgeon would not be overlooked.

The amendment was negatived

Sir **ROBERT NEWMAN** moved an amendment to Clause 2 to omit the provision excluding women from working in the industry.

Dr **HADEN GUEST** said he hoped the Government would not be led into adopting the reactionary course advocated by Sir R. Newman. There were real physical differences between men and women. The fact that lead poisoning was one of the causes of abortion, and a very important and serious cause, was a sufficient reason in itself to justify a very careful examination of this case, even if it was desired to go back on the proposals of the Bill, which he hoped would not be done. There was a very considerable death-rate from lead poisoning Why should women and children be exposed to the risk of that death?

Captain **HACKING** said the chief reason why he could not accept the amendment was that lead poisoning was a greater danger to women than it was to men. Sir Thomas Oliver, one of the greatest authorities on lead poisoning, said "On the whole females suffer more severely from plumbism than males" Sir Thomas Legge, the Chief Medical Inspector of Factories at the Home Office, said: "Women are more susceptible to poisoning by lead than men." If there was a discrimination in this matter it was a discrimination in the interests of the health of the women.

The amendment was negatived and the Bill was read the third time.

Venereal Disease

The Venereal Disease Act (1917) Amendment Bill, a measure presented by Mr **BASIL PETO**, to permit the sale by chemists of disinfectants for protection against venereal disease, was read a second time and committed to a Standing Committee.

Housing Subsidies

Sir **JOSEPH NALL** asked the Minister of Health if he could make any further statement regarding future policy as to the housing subsidies—Mr **NEVILLE CHAMBERLAIN** replied: It is the general policy of the Government to bring to an end the subsidies under the Acts of 1923 and 1924 as soon as practicable, but it is recognised that this can only be done gradually and with sufficient notice to enable local authorities and those engaged in the building industry to accommodate themselves to the position, in order to avoid breaking the continuity of house production The statutory review under the Act of 1924 falls to be made after Oct 1st next, and I cannot at the present time say what reduction of subsidies, if any, may be made by order under that Act. Any such order, however, must be confirmed by resolution of this House before becoming operative. In the meantime I have decided that houses completed by Oct 1st, 1927, will be eligible for the present rate of subsidy.

Air-craftsman and Tuberculosis.

Mr A R **KENNEDY** asked the Secretary of State for Air whether his attention had been called to the case of Mr F S Smith, ex-leading air-craftsman, No 150,945, Royal Air Force and to the fact that this young man had been discharged from the Air Force suffering from acute tuberculosis after several years' service, including service in the East, and had been refused disability pension, though he had no previous tubercular history, and his medical advisers were of opinion that the disease was directly attributable to his service, and whether he would appoint an appeal tribunal which would ensure a fair consideration of the testimony on both sides in this and similar cases, or would take other steps to remove the sense of injustice caused by an adverse decision arrived at in the absence of medical testimony offered by the applicant.—Sir **SAMUEL HOARE** replied: As the answer is rather long I will, with my hon. friend's permission, circulate it in the official report. As regards the first part of the question, I am advised that the Royal Air Force medical authorities were unable to discover any specific incident of this airman's service in the Royal Air Force which could be regarded as a factor either in the production or in the aggravation of the tuberculosis for which he was invalided. The incidence of this disease amongst Royal Air Force personnel at home and abroad is practically the same and compares favourably with the incidence amongst the civil population of England. There is no evidence to show that general service conditions in Iraq, Egypt, Palestine, or India, are provocative of the onset of tuberculosis. The fact that the disease manifested itself after the airman's entry into the Service does not prove that Service conditions played any part in producing it. As regards the second part of the question, I would refer my hon. friend to the answer given by the First Lord of the Admiralty on May 18th.

Appointments to Senate of London University

Dr. **LITTLE** asked the Vice-Chamberlain of the Household, as representing the Lord President of the Council, upon what advice, if any, he made his selection of persons whom he might recommend for appointment by His Majesty in Council to serve upon the Senate of the University of London. —Major **HENNESSY** replied: My noble friend the Lord President regrets that he is unable to comply with the request of the hon. Member

Fatalities in the Air Force.

Colonel **ENGLAND** asked the Secretary of State for Air if he would give the total number of fatalities to members of the Royal Air Force since Jan. 1st, 1926, indicating the countries in which these fatalities had occurred and the causes, so far as they were known, of the different accidents. —Sir **SAMUEL HOARE** replied: On the assumption that the hon. and gallant Member requires particulars of fatalities in accidents of all kinds, they are as follows, for the period Jan. 1st to July 27th, 1926:—

(*a*) Deaths due to flying accidents, 44; other accidents, 14. total, 58

(*b*) The number of flying accidents was 25, and their causes and the countries in which they occurred were as follows:—

(A.) Home. (B.) India (C.) Iraq (D.) Egypt and Palestine. (E.) Mediterranean.

	A.	B	C	D	E
(1) Error of judgment	8	3	2	4	2
(2) Weather	1	—	—	1	—
(3) Aircraft defect	1	—	—	—	—
(4) Cause not yet known or indeterminable	—	1	1	1	—

(*c*) Particulars as to the 14 non-flying accidents are as follows.—

	A.	B	C	D	E.
(1) Struck by air screen	—	—	—	—	1
(2) Bomb accident	—	1	—	—	—
(3) Motor-car and cycle accidents	12	—	—	—	—

Cost of Poor Relief, Unemployment Relief, and School Feeding

Sir **HARRY BRITTAIN** asked the Chancellor of the Exchequer what money had been spent out of public funds on relief of the poor, relief of unemployment, and school feeding during the past financial year and during the present coal stoppage respectively; and what proportion of this expenditure was attributable to mining areas—Mr R **MCNEILL** (Financial Secretary to the Treasury) replied: The total cost of domiciliary relief for the year 1925–6 was £15 326,700 while the corresponding figure for the eight weeks to June 26th last was £4,025,000 £2,400,700, or 15 7 per cent. of the former amount and £1,352 000, or 33 6 per cent., of the latter amount was incurred in 31 Poor-law unions specially affected by the coal dispute, though the dispute has affected other areas in less degree It is estimated that during the 12 weeks ended July 24th the cost of feeding school-children in the mining areas was about £225,000, or about 25 per cent. in excess of the expenditure on this service for the whole country during the whole year ended March 31st 1926 As regards other expenditure on relief of unemployment I find that an allocation between mining areas and the rest of the country could only be made to a limited extent, and would take some time to work out

Nurses in Prisons

Mr. **PETHICK-LAWRENCE** asked the Home Secretary what number of trained male nurses were employed in His Majesty's prisons, what training and what certificates of efficiency such male nurses held, what was their proportion to the daily average number of prisoners, whether any trained women nurses were employed in His Majesty's prisons for men, and, if so, how many women nurses were so employed and what was their proportion to the daily average number of male prisoners —Captain **HACKING** (Under Secretary for the Home Department) replied 131 male hospital officers, certified efficient by a board of medical officers after training at Parkhurst, are employed in prisons Their proportion to the daily average number of prisoners for 1924–5 is about 1 to 75 Forty-seven of them are on the State Register of Nurses In prisons for men, women nurses are only employed when the medical officer thinks that necessary in special cases

Mr **PETHICK-LAWRENCE** Does that mean that there are no permanent working nurses and that they are only brought in in case of emergency?

Captain **HACKING** Yes, that is what it means

Mr **PETHICK-LAWRENCE** asked the Home Secretary what number of women nurses were employed in H M prisons for women, what training and what certificates of efficiency such nurses held, and what proportion they bore to the daily average of women prisoners —Captain **HACKING** replied Twenty-three registered nurses and 18 hospital officers are employed in women's prisons The registered nurses hold such certificates of training as are required by the General Nursing Council for registration The hospital officers were trained in the larger prison women's hospitals and passed as efficient by the medical officers The proportion of the 41 to the daily average female population for 1924–5 is about 1 to 23

Lancashire Coroner's Error

Colonel **DAY** asked the Attorney-General if his attention had been drawn to the failure of Mr D N Haslewood, a Lancashire coroner, to view the body of George Frederick Margerison, upon whom an inquest was held in accordance with Section 4, subsection (1), of the Coroners Act, 1887, and whether the Lord Chancellor had taken any action in the matter —Sir D **HOGG** replied The Lord Chancellor's attention has been drawn to the case alluded to It appears that by an error the coroner omitted to view the body Proceedings have been taken in the King's Bench Division and a proper inquest has been directed to be held The Lord Chancellor does not propose to take any action in the matter

The Services.

ROYAL NAVAL MEDICAL SERVICE

Surg Lt-Comdrs to be Surg Comdrs R A W. Ford, C. H M Gimlette, W H A. Sinclair-Loutit, W I Gerrard, R Buddle, and W P Vicary

ROYAL ARMY MEDICAL CORPS

Cols H P W Barrow and D Harvey to be Maj -Gens

P F Palmer and G A Walmsley to be Temp Lts

ARMY RESERVE OF OFFICERS

Lt-Col and Bt Col Sir A L A Webb and Lt-Col and Bt Col P S Lelean, having attained the age limit of liability to recall, cease to belong to the Res of Off

TERRITORIAL ARMY

Lt-Col S J Fielding to be Bt Col

Maj (Prov) E M Douglas-Morris is confirmed in his rank.

Capts G E Lindsay and J A Fretton, late R A M C, to be Lts, and relinquish the rank of Capt

J Rannie, late Surg Sub-Lt, R N V R, to be Lt

2nd Lts C D Bruce, late R G A, and E L. Martin, late Welch R, to be Lts

M R Coolican to be Lt

Hygiene Companies A O'Hanlon to be Lt

ROYAL AIR FORCE

J O Priestley is granted a short service commission as a Flying Officer for three years on the active list.

The undermentioned Flying Officers are promoted to the rank of Flight Lt on promotion to the rank of Temp Capt, General List, Army A. Rhodes, H R Peek, and N F Smith.

Flight Lt A. W Comber relinquishes his temporary commission on ceasing to be employed

INDIAN MEDICAL SERVICE.

Temp Lts Gurdat Singh Gill and Lal Singh Anand to be Temp Capts

The King has approved the retirement of Lt-Col E C G Maddock

DEATHS IN THE SERVICES

Lieut-Colonel Rochfort Noel Hunt, D S O, R A.M C, died suddenly on July 26th aged 53 He was educated at the University of Dublin, where he graduated M B, B Ch in 1900 He received his first commission in the Service in November, 1900, became Captain in 1903, Major in 1912, and Lieut.-Colonel on March 2nd, 1923 During the war he commanded the hospital ship *Nevassa* No 135 Field Ambulance No 7 and No 42 Casualty Clearing Station, and No 35 General Hospital, the latter for over four years, and saw service in Egypt and in France Twice mentioned in despatches in 1917, he was awarded the D S O in 1918 and in 1919 he was the recipient of the Medaille des Epidemics (Vermeil, France) On account of heart trouble he was placed on the half-pay list and retired on retired pay on Nov 23rd, 1925

Surgeon-Captain John Charles Groscort Reed, R N, retired, died on August 2nd aged 53 He was appointed surgeon in the Royal Navy in 1896, and four years later was at the taking of the Taku Forts during the war in China in the *Algerine* (China medal and Taku clasp) He was on duty at the time in a temporary hospital between the attacking ships and the forts Later he accompanied the first water party for the relief of Tientsin He was serving at Bermuda when war broke out, and for the last two years of hostilities was afloat as senior medical officer of the battleship *Thunderer* in the Grand Fleet He reached the rank of staff surgeon in 1912 and retired in 1923 after being surgeon-commander in the *Actaeon*, Torpedo School, Sheerness, and in Chatham Naval Barracks

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED JULY 31ST, 1926

Notifications—The following cases of infectious disease were notified during the week —Small-pox, 66 (last week 91), scarlet fever, 1245, diphtheria, 728, enteric fever, 65, pneumonia, 376, puerperal fever, 38, cerebro-spinal fever, 6, acute poliomyelitis, 25, encephalitis lethargica, 44, continued fever, 1, dysentery, 6, ophthalmia neonatorum, 123 There were no cases of cholera, plague, or typhus fever notified during the week.

Deaths—In the aggregate of great towns, including London, there were no deaths from small-pox, 4 (0) from enteric fever, 14 (1) from measles, 3 (0) from scarlet fever, 23 (3) from whooping-cough, 21 (4) from diphtheria, 70 (20) from diarrhœa and enteritis under 2 years of age, and 14 (2) from influenza The figures for diarrhœa and enteritis for the last July week show a comparatively small rise on those of the previous week—namely, 68 (12) The figures in parentheses are those for London itself

Typhus Fever in Glasgow—A small outbreak of typhus fever has been reported to the Public Health Department in Glasgow, seven persons (six of them belonging to one family) having been removed to hospital during the first week in August The cases all came from the Govan district and the immediate contacts are being kept under observation at the reception house, where one has since been taken ill with similar symptoms No definite conclusion has yet been reached regarding the source of infection

DANISH HOSPITALS.—Dr Ralph Picken, medical officer of health for Cardiff, has reported to the Corporation upon a recent visit to eight general hospitals in Denmark There are in that country 173 hospitals with four beds per 1000 of the population, and Dr Picken found that the bulk of the accommodation is equal to that of the British voluntary hospitals, and that "the best is better than anything we have." The most marked divergence between the practice of the two countries is in ward accommodation Instead of wards holding 18 or 20 patients, and sometimes more, in Denmark the unit is arranged somewhat on the lines of our own sanatorium or tuberculosis pavilions, a wide corridor at the rear giving access to a series of rooms of various sizes, all of them with windows to the south. Even the smaller hospitals are equipped with new X ray plants, and provision for light treatment, hydro-therapeutics, mechanical treatment, massage, and electro-therapeutics

Correspondence.

"Audi alteram partem."

PASTEURISATION OF MILK

To the Editor of THE LANCET.

SIR,—At a time when it is becoming the general rule for dairies to supply their consumers with "pasteurised" instead of raw milk, it is well to consider the advantages and disadvantages of heated as compared with fresh milk. There is a large proportion of people using "pasteurised" milk under the impression that they are receiving the raw product, and the medical officer of health for Poplar is right in holding that when "pasteurised" milk is sold to the public the purchaser should be informed of the fact Forming as it does the basis of diet for infants and young children, milk should be supplied as clean as possible, and at a price which is not prohibitive to the poor, but it should also retain the greatest amount of its natural vitamins and ferments

During "pasteurisation" the lactic-acid, but not the putrefactive or sporulating, bacteria are destroyed, with the result that the milk may go bad without curdling if kept for any length of time Curdling is still looked on as the signal of milk going bad, and the public should be educated not to drink products which are totally unfit for consumption, simply because there is no clot Dr Eric Pritchard,[1] while supporting the general use of "pasteurised" or scalded milk, mentions the fact that at the Infants Hospital the milk supplied to premature or young babies who are not breast-fed is deliberately soured with lactic-acid bacteria, since it is thereby rendered more digestible than "pasteurised" milk Vitamins are partially destroyed on heating, and Prof Plimmer[2] reminds us that heating twice is totally destructive to vitamin C, as in the boiling of already "pasteurised" milk This is especially important in the preparation of many proprietary infants' foods where starch or partially digested starch is present and where it is necessary to make the food with boiling milk and water

Although it is frequently stated that heating to a temperature of 145° F does not impair any of the characteristics of the milk, it can be shown by simple tests that the reductase is destroyed Since enzymes are placed in milk by nature for definite physiological reasons, there is no justification for removing them unless some definite advantage is gained thereby.

In 1883 Richet, working on his patient Marcelin, discovered that whereas fresh cow's milk was digested in three and a half hours, boiled milk required four hours for digestion In this connexion results which I obtained by peptic digestion in vitro are of interest

—	Hours incubated		
	2	18	36
Cold milk	C	M.L, small, broken heavy curd	Nearly digested.
Milk warmed to 50° C =122° F	Well c	M L small compact curd	Not so well digested
Milk boiled and cooled	C l	Flocculent heavy curd	
Cold milk and water in proportion of 7 to 5	C	M L, small, broken heavy curd	Nearly digested.
Milk and water warmed to 50° C =122° F	C	M L, small compact curd	Not so well digested
Milk and water boiled and cooled	C l	Flocculent heavy curd	

C =Curdled l =Lightly M L =Mostly liquid

If pasteurisation is only used for the benefit of the consumer there is much to be said in its favour. But since sporulating bacteria are not destroyed the milk should be consumed within 18–24 hours of pasteurisation, whereas it has been admitted to me by a dairy manager that he keeps milk at his shop for 36 hours before sale, a thing which would be impossible without heating Another manager has told me that "pasteurised" milk goes bad at times in his shop before sale, also pointing to the fact that it is not disposed of quickly enough

At the present time there appears to exist great confusion as to the various grades of milk according to the Ministry of Health regulations, and I know of at least one manager of a multiple company who regularly sells "pasteurised," not Grade A milk, as Grade A and maintains that it is all one and the same product In my opinion, all shops selling any of these graded milks should possess a copy of the regulations affecting their sale, both in their own and in their customers' interests To sum up, it seems doubtful whether the best interests of the public are really being served at the present time by more or less general pasteurisation of milk without educating the consumer on the advantages and disadvantages accruing from the process

I am, Sir, yours faithfully,
THOMAS MCLACHLAN, D C M, A I C.

August 4th, 1926

---

[1] Brit Med Jour 1925, ii 247
[2] Practitioner, 1925, i 31

STATUS LYMPHATICUS.

To the Editor of THE LANCET.

SIR,—An annotation in your issue of June 12th contains comments upon a case of status lymphaticus published by me in the May number of the *Canadian Medical Association Journal* As some criticism is levelled against the diagnosis, perhaps you will allow me to supply additional information regarding the case

Your annotation suggested that the case might have been one of myocardial degeneration and that death was due to this cause Exigencies of space precluded a minute and detailed account of the histological investigation of all the organs The myocardium was, however, carefully examined microscopically and no changes of an inflammatory or degenerative type were found Special attention was paid to the sections stained with Scharlach R and no evidence of fatty degeneration could be seen Another possible omission is suggested by your article—namely, that we were dealing with an early case of acute meningitis and that cultures should have been made from the brain As I had some experience of sudden death from fulminating cerebrospinal meningitis during the war, this was a matter towards which I specially directed my attention at the time of the post-mortem examination It is true that no cultures were made from the brain, but there was not the faintest trace of inflammatory change in the meninges I am interested to know that Prof Glynn has found cases which give positive results bacteriologically when the disease (meningitis) is "practically not demonstrable" otherwise But I take it that there must be something visible to the naked eye As we were on the look out for the condition, and carefully inspected the middle ear, mastoid, ethmoidal and sphenoidal sinuses as well as the meninges I think that possibility may also be eliminated Apart from the generalised lymphoid hyperplasia, the scarring at the lung apices, and the enlarged thyroid, the striking features at the post-mortem examination were the intense venous congestion of the organs associated with a dilated right heart, petechial hæmorrhages, and the pulmonary emphysema The congestion, dilated heart, and the hæmorrhages were all probably associated and were due to the mode of death The emphysema of the lungs was sufficiently striking to suggest an anaphylactic element in the case

I admit the unsatisfactory nature of the diagnosis and our ignorance as to the pathology of the condition

We can only hope that the labours of the Committee of the Pathological Society will result in something more tangible and a better definition as to what exactly is to be understood under the term status lymphaticus.—I am, Sir, yours faithfully,

JAMES MILLER

Queen's University, Kingston, Canada, July 29th, 1926

SURGERY OF ELONGATED PELVIC COLON.

To the Editor of THE LANCET

SIR,—Mr E. G Slesinger's paper on this subject in your last issue will create widespread interest. The elongated pelvic colon is a serious cause of stasis In its extreme form the elongation is enormous and is an insuperable obstacle to successful treatment Its surgical removal offers great attraction, and Mr. Slesinger's cases prove that success may follow resection of redundant bowel with end-to-end union But success is not invariable I have records of a good many X ray observations after resection (for cancer, diverticulitis, &c). Union is perfect, but function remains imperfect and does not improve with time. There is a break in peristaltic continuity, due to division of Auerbach's plexus The peristaltic waves do not bridge the gap Fæces accumulate at the union until enough has been thrust through to start an independent wave in the distal section. Mr Slesinger gets over this difficulty by giving paraffin and by enemata if paraffin fails My own conviction is that a case severe enough to warrant surgery is best treated by complete colectomy, for then the distal section receives no solid matter and cannot become obstructed. I am well aware that colectomy is a serious responsibility. If Mr Slesinger's less drastic operation can be made to succeed, it will be a boon indeed.—I am, Sir, yours faithfully.

ALFRED C JORDAN

Upper Wimpole street, W , August 7th, 1926

THE DEFINITION OF DRUNKENNESS

To the Editor of THE LANCET

SIR,—As a police surgeon it is my unpleasant duty to examine persons accused of drunkenness, and like Dr. N. I Spriggs I have been unable to find a satisfactory definition of the condition

The committee appointed by the British Medical Association to consider the tests for drunkenness will doubtless formulate a concise and comprehensive definition Meanwhile I define drunkenness as an obvious impairment of the functions of the nervous system due to alcohol Alcohol disturbs first the higher intellectual faculties, then the motor centres If a suspected person sways or staggers in his gait, slurs his speech, or makes clumsy and ill-adjusted movements when he sits down, handles his cigarette case or other familiar things, I assume that there is a disturbance in equilibrium in the coordination of the muscles This loss of control of the motor mechanism, when due to alcohol, indicates a more pronounced impairment of the higher functions of the brain and is definite evidence of drunkenness And as arrests for drunkenness are rarely made unless the suspected person smells of alcohol, and has the muscular incoordination and disorderly behaviour peculiar to alcohol, very few sober people are taken into custody.

When there are no motor symptoms, and one has to rely on mental changes only, drunkenness is not always easy to detect, for the medical man does not know the normal condition of the drinker, and has no standard of comparison The mental derangement which attends the slighter forms of intoxication is usually revealed by the self-satisfied behaviour of the affected person The drunken man is pleased with himself and his conduct; he has a diminished sense of his responsibility, and if a motorist makes light of any accident that may have occasioned his arrest Although accused of drunkenness he loses his caution, and states the kind and number of drinks he has had He breaks the convention in a way he would not do when sober , he wears his hat indoors, sits when he should stand, smokes without permission, and is familiar and facetious He is talkative and argumentative, and may wander off to irrelevant subjects He loses control of his emotions and becomes maudlin or too genial

When these mental symptoms are combined with muscular incoordination there is no doubt about the diagnosis. When, however, the mental symptoms are present without motor derangement the suspected person is often said to be under the influence of drink but not drunk. This phrase is misleading and is better avoided. It led to the acquittal of Dr Spriggs's "drunken" motorist and has been equally serviceable to many another drunken man It is probable that half the adult population is under the influence of alcohol at some time in the day, but not every person so influenced is drunk. If, however, the mental effects of alcohol can be readily detected, not only is the subject under the influence of drink, but according to my definition he is drunk He may be steady on his legs and correct in his speech, but his sense of responsibility, his judgment, his estimation of distances, and his caution are all gravely impaired and replaced by a reckless sense of well-being and disregard of danger which make him a greater menace to society than any person who is drunk and incapable

I am, Sir, yours faithfully.

Birmingham, August 9th, 1926 G. A WILKES.

DEFENCE OF ASSISTANTS AND LOCUM TENENTS.

To the Editor of THE LANCET

SIR,—I am instructed by the Council of the Medical and Dental Defence Union of Scotland Limited to bring before the notice of your readers the fact that this Union, which enrols medical and dental practitioners in any part of Great Britain and Northern Ireland, has always accepted responsibility for the acts of their member's assistant or locum tenent If, therefore, a claim is made, or an action raised against a member of this Union in respect of a negligent (or alleged negligent) act of his assistant or locum tenent, the Union will defend the case The Union's indemnity insurance scheme, under which members are protected in the event of an action against them being unsuccessfully defended, also covers the member, not only against his own negligence, but that of his assistant or locum tenent

I am, Sir, yours faithfully,

W FINDLAY,

Secretary and Treasurer to the Union.

155, St Vincent street, Glasgow, C 2, August 3rd, 1926

CERTIFICATION OF INJURY UNDER THE WORKMEN'S COMPENSATION ACT

To the Editor of THE LANCET.

SIR,—I see from your report of the Representative Meeting (THE LANCET, July 31st, p 229) that the British Medical Association is considering a form of certificate to be issued to injured employees at the request of the employer, who acts on the instructions of the insurance company This question has interested me for some years, and I made inquiries about it from two solicitors, one barrister, and one representative of an insurance company who was calling on me in reference to insurance work The first three said the employer had no right to ask for a certificate from the employee , the insurance man said, as nearly as I can recall his words, "I am giving the show away, but we have no power to ask for a certificate" The employer has the right to have the employee examined at his own expense I believe there is nothing in the Acts requiring the employee to go to a medical man If my contention is correct why should any concession be made to the companies? The only reason given at the meeting was that some medical men charge sixpence each for these certificates —I am, Sir, yours faithfully,

F DE COVERLY VEALF

Market Lavington August 5th 1926

CERTIFICATION OF INCAPACITY FOR WORK

To the Editor of THE LANCET.

SIR,—Has it ever occurred to those responsible for certain clauses of the National Health Insurance Act that they have put into the hands of panel patients a weapon which is used alarmingly and which is now producing the new memorandum of the Ministry of Health? In these days of competition the practitioner has to keep a practice together, to lose a practice is easy, and one method of doing so which is extremely efficacious is to question too frequently the patient's demand for a certificate Patients know only too well they can change their panel doctor daily if they desire, and they do not hesitate to tell you and do so The remedy is to control this liberty, and when the panel doctor is thus safeguarded, and his sense of security heightened, probably his moral integrity will improve Doubtless this has escaped observation, but a return to the six months or even three months limit for changing the doctor will be worthy of trial, it can at least do no harm —I am, Sir, yours faithfully,

August 9th, 1926 PANEL DOCTOR

To the Editor of THE LANCET.

SIR,—As far as this area is concerned, there has certainly been an increase of the number of references to the regional medical officer, though as there are a number of pits working my impression is that the increase is not as large as elsewhere. The circumstances are also different, as in one coalfield most of the miners have chosen a particular approved society which has an amount of sickness greatly in excess of the normal, as much as 99 per cent of what is provided for under the Acts (so the secretary told me some time ago), as compared with 75 or 80 per cent for other societies In order to save themselves from bankruptcy and knowing their members well, the local officials of this society are down at once on their younger members on the sick funds whom they suspect in a time of strike The result is a tremendous rise in the number of references, and from my own experience of such cases it is evident to me that many men fall back on sick pay as a convenient method of getting money in an emergency

This undoubtedly has thrown on to doctors practising in such areas a very thankless and onerous work, and all the more so owing to the number of doctors who have no conscience about giving certificates These doctors are largely "black-leg" doctors who in previous years have been got in by the miners Though in great minority they are sufficiently numerous to make the position of the remaining doctors very difficult This has become more so since the time when a patient could change his doctor at any time I have come across cases where the doctor who has been in attendance has signed off a man because he was convinced of his ability to work, and by so doing has lost not merely his patient but a whole family In one case 35 insured persons left one doctor because he signed off one man In this case a deputation from the miners' lodge waited on the doctor and demanded that he should alter his certificate which he refused to do I know of the case of one insured person who getting a final certificate from one doctor, went the same day to another doctor who gave a continuation certificate and got the insured person transferred to his list

My sympathies are increasingly aroused for those doctors who try to do their duty under such circumstances In a big town a doctor is not exposed to such risks or temptations, but in a mining village where the doctor's whole livelihood depends on one set of people it is very different.

I am, Sir, yours faithfully,

August 10th, 1926 GIDEON GRAY.

THE MEDICAL DIRECTORY.

To the Editor of THE LANCET.

SIR,—The annual circular has been posted to each member of the medical profession. If the form has not been received, a duplicate will be sent on request We shall be grateful for the return of the forms by an early post We are, Sir, yours faithfully,

J. AND A. CHURCHILL

7, Great Marlborough-street London, W. 1,
August 10th, 1926

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND —The Diploma in Tropical Medicine and Hygiene has been conferred upon the following candidates from the London School of Hygiene and Tropical Medicine —

M. A. Azim, G C Bergman, Ellen M. Clow, R. Crawford, E H L Le Clezio, H M. O Lester, I G MacGregor V. J G MacGregor, I Magdi, P Milne, J C Paisley, C L D Roberts, Q M. Said, G Sanders, V. A. Stookes, C C. Taffs, R. W Thomas W Thomson, W. S Urquhart, B. G Wheatley, and W. Z. C Yuen.

At the Final Examinations of the Conjoint Board, held from July 6th to 30th, the following candidates were approved in the undermentioned subjects, but are not yet eligible for diplomas :—

Medicine —W. M. Abdel-malek, Birmingham, A. Ali, St Bart.'s, G F Andrews, Middlesex; H W. Applin, Guy's, Rosie B Becker, Leeds, H O Blauvelt, Univ Coll E. J C Bockett, King's Coll., E S Bolton, Leeds F W. Bradley, Guy's, Helen M. Browne, St. Mary's, Catherine F Cameron, Royal Free, C J N. Cameron, Univ Coll, G S Clouston, Liverpool, M Coll, Durham; C R Cooke-Taylor, Univ. Coll, C E. Corrigan, Manitoba, K. E D Dauncey and Daphne W. Dear, King's Coll., C H Dhala, London; A. A. Digges la Touche Cambridge and Leeds, Doris V. Douglas Norman King's Coll, A. S El Katib, Cairo and St Thomas's, F M. M. Eyton-Jones, St Bart 's A H Gale, Univ Coll., Edith Giles, Charing Cross, Marion L Grimmer, Westminster, H L Gulati, Charing Cross, G S Hall, Birmingham, S W. Hardwick and A. C de B Helme, St Bart 's, Lilian M. J. Henry, King's Coll. Catherine E. Hill Royal Free; C B Huss St Bart.'s, R. F. Jayne and F E Kingston, London, Flora W Lloyd, St Mary's P V MacGarry, London, D J MacMyn, King's Coll., P C Mallam, St Mary's, R. Maneschewitz, Guy's, Beryl Mappin, St Mary's, J N Martin, Guy's, A D Miller Durham, E W T Morris, St. Thomas's, B E T Mosse, St Bart.'s, J L Newman King's Coll Audrey S Nunn, Charing Cross, Catherine J Ormerod and N F. Pearson, King's Coll Janet R. Phillips, Birmingham, Winifred A. L Pollock, Westminster, P N Ray, Calcutta, E R. Rees and E E F Rose St Bart 's, A. P Ross, King's Coll.; A. V Russell Liverpool C H St. Johnston Birmingham T F McN Scott, St George's, Kathleen Sheehan, Manchester, F C Smith and C L Stote London, H Teitelbaum, Cardiff L Wakeley, King's Coll., J Walker, Leeds, C F Watts, St Bart.'s, Edith V E. Whidborne, King's Coll. Florence Whitrow, Manchester, Addie Wilkes Charing Cross, N J Willians, Middlesex, A. G Wilson St Thomas's, and A. H Wortman, Univ Coll

Surgery —V H Abrahamson St Bart 's R. Andrews, London, Grace L Austin Univ Coll, G C Babington, St Thomas's J D Bailey, St. George's, R Bandyopadhyay St Thomas's, R. N Berry, Univ Coll, C P J Bester, St Thomas's G W Black, Middlesex, E. J. Boschi Leeds H W Bowen St. Thomas's, W A. Briggs and M Bryer St Bart 's S M Burrows, St Thomas's A. Carr, Guy's K B Chakravarti London J A Cholmeley and B M Clark St Bart 's S L A Clarke Guy's Geraldine H Cowle Westminster, H T Cox St Thomas's, R. Cunningham and E. S Curtiss St Bart 's R. P P Davies St. George's S Douglas and Phyllis M. Edgar Univ Coll, H M. Elliott St Bart.'s H K Evans, Middlesex W G Evans, Cardiff S Farfel St Bart 's A. McK. Fleming Middlesex. R. M Gilchrist St Bart 's A Golombek King's Coll, J Gough Cardiff P A Graff Middlesex, F L Griffiths St Bart 's G S Hall Birmingham E O Harris Middlesex, C A N Hicks Guy's, O Hooper London, C W Hope Gill, St. Thomas's P N Lahiri, Calcutta, F R Laurgnald Middlesex Greta M Langdon Royal Free C A Levy St Thomas's, J Lloyd Cardiff Joyce McConnell Royal Free G E Macdonald London J I Macdougall St Bart 's W McLaren Durham H E

McLaughlin, St Bart 's, G McLoughlin, Liverpool, G S Malik, Univ Coll, M. Malk and G R Malkin, St Bart 's, H Mallinson, St George's, H Mannington, Middlesex, E R Matthews, St Mary's; F J Mayne, Guy's, S P Meadows and J W Melville, Liverpool, R J Milbank, Guy's, Barbara H Mitchell, Royal Free, J C Neely, Guy's, Greta K Olsson, Westminster, F G Parker, Guy's, G E Parker, St Thomas's, L L P Paterson, St Mary's, P P Peries, King's Coll, R A Phillips, St Thomas's, C B Picken, Guy's, H A Pim, St Thomas's, J C C Poole, St Bart 's, H W A. Post, Guy's, E N Price, St Mary's, B D Rawlin, Sheffield, D V Rice, London, A H Richardson, Birmingham N Rizkalla, Manchester, E H Roberts, St Bart 's, Phyllis M Robottom, Westminster, N Rosen and A H Russell, Guy's, R H Scott, St Mary's, G C Shepherd, Charing Cross, M R Sheridan, Liverpool, Catherine E M Siddall, St Mary's, R. B S Smith, Durham, E R Smithard, Middlesex, W R C Spicer, Guy's, Florence V Stephen, Manchester, Kathleen M Stuart-Harris, Royal Free, R Stuppel, Univ Coll, C N Suter, St Mary's, F J Swinton-Esher, Birmingham, C I Tuckett, St Thomas's; Winifred M. Turner, Royal Free A C Welch, Leeds, C H C White, Guy's, R W Windle, St Bart 's, and F. H Woolley, Bristol

Midwifery—G M Addison, St Thomas's, B W Alexander and A Ali, St Bart 's, H Allan, Middlesex, Sophia A P Allen, Charing Cross, J M Anderson, Durham, G F Andrews, Middlesex, M. C Andrews, Univ Coll, R Andrews, London; H W Applin, Guy's, R G Apthorpe, J M Ashton, and G C Babington, St Thomas's, Fanny H Bachrach, St Mary's, L G Backhurst and C J Bashall, St Thomas's, Grace Batten, King's Coll, Charlotte Belinky-Raguinsky, Charing Cross, S Bernstein, Manchester, C P J Bester, St Thomas's, Constance M H Bishop, Charing Cross, G W Black, Middlesex, H E Blake and W Blayney, St Thomas's, F W Bradley, Guy's, J G Brandon, St Thomas's, W A Briggs, St Bart 's, Ruth M Brittan, Royal Free, Helen M. Browne, St Mary's, M Bryer, St Bart 's, C P Campion, Univ Coll, A Carr, Guy's, R. L Cheverton, Birmingham, B M Clark, St Bart 's, S L A Clarke, Guy's, E Colin-Russ, Middlesex, W K Coombes, St Mary's, Geraldine H Cowle, Westminster, H T Cox, St Thomas's, A. T Croucher, St Mary's, F H N Cruchley, London, A R. Culley, Cardiff, D Curran, St George's, B G Dain, Birmingham, P McL Davidson, London, C Davies, Birmingham, R. P P Davies, St George's, J Dean, St Bart 's, Doris V Douglas-Norman, King's Coll, Phyllis M Edgar, Univ Coll, A R Edwards, Liverpool, Jessie Edwards, Charing Cross, E A R. Ennion, St Mary's, D K Evans, Cardiff, Enid C Evans, Westminster, H K Evans, Middlesex, Muriel F M Evans, Charing Cross, W G Evans, Cardiff, A M. Fleming, Middlesex, A E Fraser-Smith, St Bart 's, H W Frickel, St Mary's, A H Gale, Univ Coll, H C Geldard, Middlesex, J H Gillatt, Sheffield, N Gindi, Birmingham, H Girling, Guy's, Anna R. Glover, St Mary's P N Gokhale, London, A Golombek, King's Coll, J Gough, Cardiff, R A Graff Middlesex, C C Griffiths, Liverpool, T R Griffiths, St Bart 's, A. L Gunn, Cardiff, Vivienne M Gunson, King's Coll., A K Gupta, Calcutta, V F Hall, King's Coll, D G Hamilton, St Thomas's, E O Harris, Middlesex, J A Hartley, St Thomas's, Eunice M Hatch, St Mary's, J E Heggart, Middlesex, G F Henderson, Univ Coll, Kathleen Heyes, Royal Free, Marion Hook, Tufts Coll, Boston, F S Hubbersty, Univ Coll, A L Hyatt, Middlesex, R Illingworth, Manchester, M I Jackson, Cardiff, H M Jaques, Middlesex, R. F Jayne, London, J L G Jenkins, Cardiff and St Bart 's, V Kathir gamatamby and M S Katre, Madras, C E Kellett, Univ Coll, F Kellett, St George's, A. B Kettle, Guy's, S M. Kharegat, St Bart 's, F R. Langmaid, Middlesex, G Lee, St Thomas's, H C Lee, Guy's I N Lewis, St George's, J T Lewis, Cardiff, A. W. Lilley, Man- chester, Margaret I Little, St Mary's, D A Llewelyn, St Bart 's, Flora W Lloyd, St Mary's, J Lloyd, Cardiff, J McFadzean, Glasgow and London W McLaren, Durham, H E McLaughlin, St Bart 's, W N Maclay, St George's, G McLoughlin, Liverpool, M Malk, St Bart 's, H Mallinson, St George's, R. Maneschewitz, Guy's, C Mani, Birmingham, H Mannington, Middlesex, T E Matthews, St Mary's, F J Mayne, Guy's, Gwendolen E M Meyer, Charing Cross; R J Milbank, Guy's W E Mitchell, Manchester, E W T Morris, St Thomas's, F Mulvany, London, W C Munro, St Bart 's, W D Neill, London, J L Newman, King's Coll., R Nicklin, Birmingham, Mary O'Leary, St Mary's, R O'Meara, Birmingham, W Panes, Cardiff, G E Parker, St Thomas's, W S Parker, Dublin and Man- chester Muriel V Paton, Royal Free, G E B Payne, Univ Coll., R H Pearce, Birmingham, P P Peries, King's Coll, R A. Phillips, St Thomas's, C B Picken and H W. A Post, Guy's, W H D Priest, King's Coll, L M C Probyn, Charing Cross, W Ralston, London, R H Rattray, Edinburgh and Charing Cross B D Rawlin, Sheffield, P N Ray, Calcutta, E R. Rees, St Bart 's, H L Rees, King's Coll A H Richardson, Birmingham, Elsie E A. Ridley, Royal Free, E H Roberts, St Bart 's, D A Rolfe, Birmingham, N Rosen and W. Rosenberg, Guy's, A P Ross, King's Coll, G P Roxburgh, St Bart 's, A H Russell, Guy's, A V Russell Liverpool, R Rutherford, King's Coll, J C Saldanha, Univ Coll, T F McN Scott, St George's, S Segal, Oxford and Westminster B C Singh, Univ Coll, L A P Slinger, St Bart 's D H Smith, London, E R Smithard, Middlesex, W R C Spicer, Guy's, Florence V

Stephen, Manchester, C E. R Stephenson, St George's, G R S Stewart, Guy's, Kathleen M Stuart Harris, Royal Free, R Stuppel, Univ Coll, Dorothy Taylor, St Mary's, H Teitelbaum, Cardiff, C G Townsend, Cambridge and Guy's, C I Tuckett, St Thomas's, L P Tupling, Guy's, Ruth M. W Turner, St Mary's, E S Vergette, St Bart 's, L S P Wakeley, King's Coll., A S Wallis, St Thomas's, E Ward, Manchester R Watson, Univ Coll, M G Williams, Cardiff, R A. Wilmshurst, St Thomas's, R W Windle, St Bart 's J Winter, Middlesex C S Wise, St Bart 's, and Elsie B Wright Royal Free

ROYAL COLLEGE OF PHYSICIANS OF LONDON The College will close for the long vacation on Saturday, August 14th, and reopen on Monday, Sept 20th.

UNIVERSITY OF LONDON—*Thomas Smythe Hughes Fund*—A grant of £20 has been made to Dr K N G Bailey towards the cost of an investigation of certain strains of the *Bacillus coli*

Negotiations are proceeding with the trustees of the Bedford Estate regarding the acquisition of a part of the Bloomsbury site, and at its meeting on July 21st the Senate passed a resolution —

That the Coördination and Developments Committee be authorised to take immediate steps to secure for the University the longest possible continuance of the temporary occupation of the Malet-street site, on the understanding that the Senate will be prepared to continue negotiations for the acquisition of so much of the Bloomsbury site as is practicable having regard to the urgent importance of increased accommodation for the University at South Kensington

HOSPITAL PENSIONS SCHEME—The Provisional Council of the King Edward's Hospital Fund for London is inviting hospitals to submit any points of detail in connexion with the scheme on which they may desire information or decisions These questions should, if possible, be sent before Sept 25th, and in any event not later than Nov 1st Hospitals wishing to notify their readiness to participate and to send representatives to the next meeting of the Provisional Council, should write to the Provisional Executive Committee not later than Nov 15th.

SELLING GAME FOR HOSPITALS—The Mackintosh of Mackintosh, President of the Northern Infirmary at Inverness, has addressed a circular letter to shooting tenants in the Highlands asking them to help the collection of £100,000 for the extension of the infirmary by selling some of their grouse and other game for its benefit The game is to be sold to a specified firm of dealers in London at ordinary market prices

JOINT TUBERCULOSIS COUNCIL—A post-graduate course on non-pulmonary tuberculosis will be held at Heatherwood Hospital, Ascot, Berks, from Sept 23rd to 25th next The lecturer will be Dr J G Johnstone, the medical superintendent, and a fee of 1½ guineas will be charged The course has been approved by the Minister of Health as ranking for grant Applications and inquiries should be sent to the hon secretary, Joint Tuberculosis Council, Post-graduate Courses, at 19, Brunswick-square, Camberwell, London, S E 5

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION—Starting on August 16th the Queen's Hospital for Children will hold an all-day course on the medical and surgical aspects of children's diseases The course will last a fortnight and the entire practice of the hospital will be thrown open. A simple luncheon and tea will be provided A brush-up course in medicine, surgery, and the specialties will be given at the Queen Mary's Hospital, Stratford, from August 23rd to Sept 4th Instruc- tion will be available throughout each day, and the hospital is equipped with a new pathological department and maternity wards Continuous weekly courses in obstetrics are given at the City of London Maternity Hospital, and the Fellowship can arrange practical courses in anæsthetics for graduates From Sept 6th for four weeks special lecture- demonstrations on diseases of the eye will be held at the Central London Ophthalmic Hospital, where the clinical practice of the hospital will also be available From Sept 6th eight bi-weekly lecture-demonstrations in psycho- logical medicine will be given by Dr Porter Phillips and the medical staff of the Bethlem Royal Hospital From Sept 13th to 25th the Infants Hospital will hold a course under the direction of Dr Eric Pritchard for medical officers of welfare centres and others From Sept 20th to Oct 1st the Westminster Hospital will provide an intensive course in medicine, surgery, and the specialties, and the National Orthopædic Hospital staff will hold an all-day course from Sept 20th to Oct 2nd Copies of all syllabuses, of the General Course programme, and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1, Wimpole-street, W 1

International Physiological Congress.—The twelfth meeting of the Congress was opened on August 3rd at Stockholm by Prof. J E Johansson. Sir Frederick Gowland Hopkins gave an address on the Mechanism of Biological Oxidations

Chelmsford Poor-law Infirmary.—This new infirmary was opened recently It contains accommodation for 120 beds, chiefly in four main wards, each of which has attached a large sun-room facing south. The flat roofs can be used for open-air treatment

Newcastle-upon-Tyne Royal Infirmary.—The annual report of the house committee states that 13,281 patients were treated during 1925, the highest number on record. During the year 2000 extra beds were put up to relieve the pressure, and 17,496 accident cases were dealt with

Princess Mary and Northern Hospitals—Princess Mary on August 6th opened an extension of Ripon Cottage Hospital as a memorial to King Edward and Queen Alexandra. The extension includes a Princess Mary Ward for children given by Miss Cross Next month Her Royal Highness will open a large addition to Stockton and Thornaby Hospital which will increase the accommodation from 72 to 135 beds

Cancer Research in the University of Sheffield—At a meeting of the Yorkshire Council of the British Empire Cancer Campaign held on July 26th it was agreed that the University of Sheffield should receive £10,000 over a period of five years for carrying out work on dietetics under the direction of Prof. E Mellanby and with the approval of the Director of Cancer Research. Accommodation and full equipment will be provided out of this sum. Over £100,000 has now been subscribed to the Yorkshire Council of the British Empire Cancer Campaign, but £30,000 more is asked for

The Future of Voluntary Hospitals—On August 6th the Minister of Health opened in Glasgow a new hospital for the treatment of ear, throat and nose diseases In his speech Mr Chamberlain said that until the 13,000 additional beds which are needed in the voluntary hospitals of England, Wales, and Scotland are provided and the maintenance costs assured, the voluntary system would not have entirely consolidated its position When he came to recast the Poor-law he hoped to devise a scheme which would enable the municipal hospitals, which contain 30,000 beds, to work in close coöperation with the voluntary institutions He thought that ' we might do worse than aim at the establishment of some central health authority in every district," which would decide what hospital accommodation was necessary and make sure that it was forthcoming.

Donations and Bequests—The late Mr Charles Edward Craston, of Oldham-street, Manchester who left a fortune of £79,462, left a large residue to the Manchester Royal Infirmary and Dispensary, St. Mary's Hospitals, Manchester, the Royal Manchester Children's Hospital, Ancoats Hospital and Dispensary, and the Manchester Royal Eye Hospital, the Hospital for Consumption and Diseases of the Throat, Manchester—By the will of the late Mr Thomas Harrison Evans of Walsall, the testator left £1000 each to the Walsall and District Hospital, the Walsall Victoria Nursing Institution, the Wolverhampton and Midland Counties Eye Infirmary, Dr Barnardo s Homes, and the Queen's Hospital Birmingham—The late Mr T Bailey, J P, of Hessle, Hull among other bequests left on his wife s decease a certain large capital sum as to £10,000 to the Hull Royal Infirmary, £1500 to the Hull Royal Infirmary for the Withernsea Convalescent Home, £1000 to the Hull Royal Infirmary for the Withernsea Sanatorium for Consumptives £10,000 to the Victoria Hospital for Sick Children Hull, £2000 each to the Hull and Sculcoates Dispensary, the Hull Jubilee District Nursing Association, £1000 to the South Hunslet Nursing Home, Hessle, and certain sums to the Hull Royal Infirmary And the residue of his property as to one-fifth (together with any lapsed shares) to the Hull Royal Infirmary one-tenth each to the Victoria Hospital for Sick Children, Hull and the Hull Blind Institution.—Mr Edward John Dent, of Belsay Northumberland left £1000 to the Royal Victoria Infirmary, Newcastle-on Tyne to endow a cot—Miss Violet Wills of Haytor has given £1000 towards the proposed hospital for Devon and Cornwall Crippled Children—The Hon Louisa Elizabeth Kinnaird left £2000 to the Instruction Society of the Zenana and Medical Mission.—Major Francis Barrow Pearce, C M G of Shanklin Isle of Wight who left £21,974 after several bequests gave the residue of his estate to be divided between the Westminster Hospital, St George s Hospital, and St Thomas s Hospital

Lancashire's Fight against Tuberculosis—The Rufford Pulmonary Hospital, near Ormskirk. was opened on August 5th. It was formerly Rufford Hall and was bought by the county in 1919. The total cost of the hospital and estate was nearly £32,000, towards which about £8000 was contributed by the Lancashire Insurance Committee and a substantial sum by the Ministry of Health There is accommodation for 50 patients Since the end of the war the tuberculosis death-rate for Lancashire has fallen from 107 per 100,000 of the population to 67 in 1925 Rufford makes another link in the county council's chain of four pulmonary hospitals and three sanatoriums The county tuberculosis death-rate is now lower than the general average for England and Wales

The late Dr W. Bruce Bell—For many years a well-known and busy practitioner in the High Broughton district of Manchester, Dr William Bruce Bell died at Paignton in Devon on August 4th. Born at Falkirk in 1871, he was educated at Blairlodge School and at the University of Edinburgh, where he graduated in medicine with distinction in 1893 He held medical and surgical appointments at the Edinburgh Royal Infirmary and was house surgeon at the Edinburgh Hospital for Sick Children. Settling in practice at Manchester, Dr. Bell became medical officer to the post office and medical referee to several assurance companies In 1907 he was admitted to the Fellowship of the Royal College of Surgeons of Edinburgh. The state of his health prevented active service during the war, but he did excellent work as medical officer in charge of the Grecian-street Branch of the Second Western General Hospital. He was a keen politician, and at the time of his death chairman of the North Salford Conservative Association. He leaves a widow, a son, and a daughter

MALARIAL PARASITES AND METHYLENE-BLUE

Methylene-blue was used in the treatment of malaria as long ago as the 'nineties of last century and various investigations into its value have been made Writing in The Lancet (1920, i 1334), D G Marshall recorded his experience of its use at the Edinburgh War Hospital, Bangour, where over 3000 cases of malaria were treated, and disagreed with the view that it has toxic properties "In acute malarial attacks," he said, "it was found that though in many cases favourable results were obtained, the efficacy of methylene-blue in cutting short attacks was distinctly inferior to quinine On the other hand, it frequently proved a valuable remedy in preventing relapses, especially in cases where quinine, administered by the mouth or by intramuscular or intravenous injections, had signally failed." He came to the conclusion that "in methylene-blue we possess a remedy of great value, and that provided a pure supply is obtainable, it may be freely used without fear of 'toxic' symptoms resulting"

An investigation of the effects of methylene-blue on the parasites themselves has lately been made by Dr Apostolescu, as is recorded by our Bucharest Correspondent, who gives the following account of his work.

"Dr Apostolescu administers methylene-blue in three daily doses of 25 cg each to patients in whose blood tertian parasites have been found The first changes observed begin at the end of the second day and affect only the full-grown forms, the smaller, younger forms remain unchanged The adult organism shows diminished movement and breaking up of the protoplasm into lumpy rounded bodies, which lie in the blood-cell apart from one another, or are connected by minute bands of protoplasm and pigment granules The protoplasm of these lumps is shrunken. The nucleus of the parasite is generally found near the periphery of the blood cell, and on staining with carmine violet its appearance is granular. Among the sporulation forms Apostolescu found besides normal sporozoites, others which were not fully formed The pigment is gathered in patches, and these are irregularly distributed The chief points noted in the action of methylene blue on the tertian forms were destruction of the protoplasm and absence of alteration of the chromatin In the parasite of æstivo-autumnal fever no changes were observed In the crescent forms there was shrinking and granulation of the protoplasm He noticed a more equal staining of the whole parasite than normal and that the pigment granules appear coarser and are grouped in an irregular mass which projects from the surface of the shrunken protoplasm The destructive process of the protoplasm of malarial crescents goes on until there is nothing of the parasite left except the pigment.'

Medical Diary.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, London, W

AUGUST 16th to AUGUST 21st —QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E All-day course for two weeks Work available in all departments of the Hospital Further particulars from the Secretary

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square, W C

MONDAY, August 16th —9 P M, Mr Donald Armour will open a Discussion on Head Injuries

THURSDAY —9 P M., Dr Harold Scott will open a Discussion on Some Points in Tuberculosis among Wild Animals in Captivity

Appointments.

SUTHERLAND, D P, M B, B S Lond, has been appointed Honorary Lecturer in Clinical Tuberculosis at Victoria University, Manchester

Certifying Surgeons under the Factory and Workshop Acts McCOULL, G, M B, B S Durh (Wylam, Northumberland), McWHIRTER, J. G, M B, Ch B Glasg (Whithorn, Wigtown)

Vacancies.

For further information refer to the advertisement columns

Barnet, Wellhouse Hospital —Asst Res M O £150

Birmingham City Mental Hospitals —Asst M O £350

Bolton Infirmary and Dispensary —H S £150

Bradford, Municipal General Hospital, St Luke's —H.P.'s and H S 's Each at rate of £200

Bristol General Hospital —H P 's, H S 's, &c Each at rate of £80

Bristol, Ham Green Fever Hospital and Sanatorium —Asst Res M O £300.

Bristol Royal Infirmary —H P 's, H S 's, &c Each at rate of £80

Bristol University —Asst to Professor of Surgery £400

Cardiff, Prince of Wales's Hospital —H S £100

City of London Maternity Hospital, City road, E C —Asst Res M O At rate of £80

Essex, Administrative County of —Asst County M O H £600

Halifax County Borough —Tuberculosis O £650

Halifax Royal Infirmary —Fourth H S At rate of £100

Huddersfield Royal Infirmary —Jun H S At rate of £150

Hull Institution and Infirmary, Anlaby road —Asst Res M.O £300

Leicester Royal Infirmary —Second H P

Leicestershire County Council —County M O H £1200

Manchester Ear Hospital, Grosvenor-square, All Saints —H S. At rate of £150

Manchester Royal Infirmary —Asst Surg O £75

Newcastle-upon-Tyne, Royal Victoria Infirmary —Res M O £300

Northampton General Hospital —H P and H S Each at rate of £150

Poplar Hospital for Accidents, East India Dock road, Poplar, E — Second Res O £175

Queen Charlotte's Maternity Hospital, Marylebone-road, N W — Dist Res M O Also Asst Res M O Each at rate of £80

Queen's Hospital for Children, Hackney-road, E —P for Skin Dept Also H P and H S Each at rate of £100

Redhill, Surrey, Royal Earlswood Institution —Jun Asst M O At rate of £250

Rhondda Urban District Council —Dental Surg £500

Royal Chest Hospital, City-road, E C —Res M O At rate of £150

Royal Northern Hospital, Holloway road, London, N —Cas O At rate of £90

St Peter's Hospital for Stone, &c, Henrietta street, Covent Garden, W C.—H S At rate of £75

Salisbury General Infirmary —H S £150

Sheffield University (Dept of Pathology) —Asst Bacteriologist £300

Watford, Herts Peace Memorial Hospital —Res M O At rate of £150

West London Hospital Hammersmith road, W —One H P and Two H S 's Each at rate of £100

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Musselburgh (County of Edinburgh), Falkland (Fifeshire), and Twickenham (Middlesex)

Births, Marriages, and Deaths.

BIRTHS

ABEL.—On July 31st, at Adelaide road, N W, the wife of A Lawrence Abel, M S, F R C S, of a son.

FRANCIS —On August 4th, at Launston House, Hereford, the wife of Cyril Francis, M.D., B S, L R.C.P. Lond., M.R.C S Eng, of a son

SHORE —On July 31st at Devonshire street, W, to Janet, the wife of Dr T H Gootwyck Shore—a daughter

MARRIAGES

BEITH—PELL.—On August 7th, at All Saints, Leicester, Dr Andrew Edwin Beith, to Rose Bigot, elder daughter of Dr and Mrs William Pell, Leicester

HART—MCINTYRE.—On August 9th, at St Mary Abbot's, Kensington, Charles Herbert Hart, M B, to Constance Cecilia, only child of Mr and Mrs John McIntyre, of Cape Town.

LANE—DUPRÉ —Were married on August 3rd at St Brelade's Church, Jersey, Cyril Rickword Lane, M.B, youngest son of Mr and Mrs H Lane, of "The Querns," Cheltenham, to Margherita Lucille, second daughter of Mr and Mrs G Luce Dupré, of Corbière, Jersey.

DEATHS

BELL.—On August 4th, at Paignton, South Devon, William Bruce Bell, M.B, Ch.B, F R C S Edin., late of Brae Lossie, Higher Broughton, Manchester.

COLE.—On August 10th, at 25, Upper Berkeley street, W, from angina pectoris, Robert Henry Cole, M.D, F R C P

O'HARA —On August 6th, at Carysfort-road, Boscombe, Colonel William O'Hara, I M S (retd.), aged 74

OWLES —On August 4th, at Folkestone, James Allden Owles, M D, in his 86th year

REED —On August 2nd, at Montague Villas, Salisbury, peacefully in his sleep, Surgeon-Captain John Charles Groscort Reed, R.N (retd), aged 53

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

THE Kent Local Medical and Panel Committees propose to move a resolution at the forthcoming annual Panel Conference to the effect that "in the opinion of this Conference the keeping of records of attendances, visits, and certificates by each individual practitioner is neither necessary, useful, nor desirable, and should be abolished in favour of a method by which the statistical material required can be obtained from selected practitioners who are in a position to make accurate returns"

THE LANCET: SUBSCRIPTION RATES

		£	s	d
INLAND	One Year	2	2	0
	Six Months	1	1	0
	Three Months	0	10	6
ABROAD	One Year	2	10	0
	Six Months	1	5	0
	Three Months	0	12	6

Subscriptions not paid in advance are charged out at the published price of 1s per copy, plus postage. Cheques and P O 's (crossed "Westminster Bank, Ltd, Covent Garden Branch") should be made payable to THE MANAGER, THE LANCET Offices, 423, Strand, London, W C 2

SMALL ADVERTISEMENT RATES.

Books and Publications Official and General Announcements Trade and Miscellaneous Advertisements	Four lines and under 6s 0d.

Every additional line 1s 6d

For complete scale of advertisement charges apply to THE MANAGER

Notes, Comments, and Abstracts.

THE PATHOLOGICAL SERVICE OF THE GENERAL HOSPITAL

A PATHOLOGICAL department is now recognised as essential to every hospital but there is still uncertainty about the part it should play in the hospital economy. In different places and under different systems there are wide variations in its organisation and in its relation to other branches of medical practice. In a paper read before the annual meeting of the British Hospitals Association on June 25th Dr S C Dyke discussed the means of securing efficient pathological service in the smaller general hospitals and offered suggestions on the coördination of such a service with insurance and private practice in its area The following summarises some of the views he expressed.

The Hospital Pathologist and Outside Practice

After referring to the value of accurate records, which he described as for the most part sadly lacking in the smaller hospitals, Dr Dyke turned to the pathologist's work outside the hospital itself. The work done for the wards, he said, must be the justification for the existence of the laboratory The laboratory will, however, be open to the receipt of work from the outside and this private work should form a source of income to pathologist and hospital alike. The most satisfactory arrangement seems to be that under which the pathologist is paid a salary or retaining fee from the hospital, is allowed to use the laboratory for his own work, and receives a proportion of the fees coming in for services rendered.

The work sent from outside will fall into two classes—that done for private practitioners and that done for public bodies It is very desirable that the pathological department of a general hospital should be a centre for the exchange of views among medical men and a place to which they may take the problems occurring in their practices for such light as the pathologist can throw upon them. Sporadic visits from medical men may interfere with the smooth running of the laboratory, but they are to be regarded as an essential part of the daily round. The laboratory, in fact, must be looked upon as instituted not only for the benefit of the hospital, but also for that of the practitioners of the surrounding district. The work done for public bodies will be largely on contract and will consist of such items as the examination of throat swabs for diphtheria, of sputum for tubercle bacilli, and so forth. Such work will usually be catered for at special rates It is advisable that the laboratory should not be swamped with work of this sort, but a certain amount of it is very desirable as bringing a steady and certain income into the department Most local authorities arrange for the performance of examinations of this sort free of charge to the practitioners, the cost being a charge upon the rates

Important as this work is however, it should not be allowed to overshadow the other activities of the laboratory A tendency has arisen, and is unfortunately growing, to regard a pathological laboratory as a sort of slot machine which, in return for a specimen be it a swab or a bottle of sputum or of urine, will supply a diagnosis and even a cure in the shape of a jorum of vaccine Such is not its function. In many cases the pathologist faced with a specimen can have no idea in what direction the investigation should proceed without information from the clinician or without himself seeing the patient Coöperation between pathologist and medical staff is necessary for the efficient working of the practice of the hospital and the rule applies exactly to the relations of the pathologist to the practitioners served by the hospital and its laboratory.

In many instances local authorities have provided their own laboratories for the performance of such pathological work as is paid for out of the rates So long as this step results in saving the ratepayers' money it cannot be regarded as other than admirable, but in one recent experiment the result was to deprive the laboratories of the general hospitals in the county of a large part of their income, to burden the county rates with an expenditure for which there was no justification, and to give a further fillip to the unfortunate tendency to expect the State to pay for everything In the majority of instances it should be said, no such clash has arisen between the laboratories of the general hospitals and those supported out of the rates, for county and municipal laboratories usually confine their activities to the sphere of public health If local authorities generally were to throw open their laboratories to all the practitioners in their area for the free performance of investigations of all kinds, in the long run it would not bring about any improvement in medical practice On the contrary, such a step would distract the specialists in the pathology of public health from their own field and would ultimately have the inevitable effect of rendering the ground work of medicine a State department. It seems inadvisable that any branch of medicine—and in particular such an important one as pathology—should become bureaucratised.

Panel Practice.

There is every indication that in the near future the laboratories of the general hospitals should be able greatly to extend their sphere of usefulness. It is one of the anomalies of the panel system that, although from its inception it has given every facility for the treatment of disease in so far as treatment can be carried out by bottles of medicine, it has provided no facilities for diagnosis. For 16 years now the panel practitioner has been left to make his diagnoses as best he can, but one of the steps recommended by the recent Royal Commission upon the National Health insurance system was that provision should be made for pathological investigations for panel patients The need for such provision is obvious and offers the sole excuse for such a step on the part of a county council as offering to perform such investigations in its own laboratory To offer to perform them free of charge is, however, to take liberties with the ratepayers' money For the performance of such investigations for panel patients ample funds exist in the reserves of the approved societies, while private patients have always been in the habit of paying according to their means. As pointed out above, it is further desirable that pathological investigations concerning the individual rather than the national health should be made in the laboratory of the general hospital to which the patient will himself come for treatment when he is ill.

In some areas provision has been made in advance of any alterations in the panel system for the investigation of panel cases in the laboratories attached to the general hospitals Thus the Chester Royal Infirmary undertakes pathological investigations for panel patients and their dependents at something below the rates charged to private patients and Wolverhampton and Staffordshire General Hospital has recently inaugurated a similar scheme in association with the Wolverhampton panel committee. Under this scheme certain examinations will be performed at half rates for panel patients and their dependents.

The justification for such a step exists in the fact that in the vast majority of cases no examination would be made were full fees charged Some such arrangements will undoubtedly become general when the recommendations of the recent Royal Commission are given effect This being so, there are two points to which all interested in the welfare of the voluntary hospitals should give their attention. These are —

1. That reasonable fees shall be paid to the departments for the work done

2 That all such investigations shall be carried out in the laboratory attached to the general hospital serving the district in which the patient resides.

These two points are mutually dependent. In the absence of some regulations concerning them it is inevitable that a large number of the investigations under the scheme will be done at cut rates in commercial laboratories having no connexion with the hospital to which the patient will go when in need of hospital treatment This appears undesirable from the patient's point of view

The first point might form the basis for consultations between the British Hospital Association and the Ministry of Health. Hospital pathologists have no representative body which might draw up a scale of fees for pathological work but in conjunction with the secretaries of their hospitals who are also concerned they would be willing to give their assistance in drafting such a schedule for submission to the Ministry The suggestion that all pathological investigations be carried out in the laboratory of the general hospital serving the district in which the patient resides is of equal or greater importance Such an arrangement would be of enormous benefit to the voluntary hospitals throughout the country, in that it would assist them in the equipment and maintenance of efficient pathological departments. Apart from the question of adequate payment there is no measure more calculated to improve the status of pathology and by so doing to raise the standard of medicine generally throughout this country

---

THE mother of the late Sir Ernest Shackleton and her daughters are in straitened circumstances, and as Sir Ernest Shackleton's father was a medical man, it is right to commend to the notice of our readers a fund which has been started on behalf of the widow and family. Contributions should be sent to Mr Percival [illegible] Parliament-street, S.W.

PUBLIC HEALTH IN BECHUANALAND

THIS Protectorate is a country of British South Africa, in the centre of the vast tableland stretching north to the Zambesi, and the population at the census of 1921 was 152,983, of whom 1743 were whites, 52 Indians, 1003 coloured, and 150,185 natives Mr C L O'B Dutton, Government Secretary, in his report for 1924 states that the health of the territory was very good throughout the year The relative incidence of disease remains the same, malaria, syphilis, and bronchial affections prevailing in the order given The high place occupied by catarrhal diseases of the chest cannot, however, be assigned to them as separate entities They are often the concurrent or remote manifestations of malarial infection, which thus, as always, maintains its great preponderance There were no acute, severe, or widespread outbreaks of fever or epidemic disease except eight cases (one European) of cerebro-spinal meningitis which occurred at different centres, of which seven terminated fatally During the year the rainfall was the heaviest within the last two decades This would presume, prima facie, an increase in malarial incidence But it is not necessarily in seasons of heaviest rainfall that fever and its attendant complications and sequelæ take their heaviest toll—it is in seasons of drought and scarcity with their consequent lowered standards of living and powers of resistance With the heavier rainfall there is a corresponding improvement in grazing conditions and an abundance of staple agricultural products

There is evidence, in the steady increase of applications for antisyphilitic remedies at the various centres throughout the territory, of a growing eagerness to benefit by the provision of free treatment of venereal disease At Molepolole alone, where a Government dispenser has been in charge for the past nine months, 500 cases have been treated From Mochudi, where in the absence of a Government dispensary the issuing of medicines is entrusted to the representatives of the Dutch Reformed Mission, the reports are equally favourable Although no statistics have been submitted, the nurse in charge of the Mission dispensary reports that the demand for free treatment is very great, a fact confirmed by the Gaberones medical officer during his monthly visits At Kanye 464 cases have been treated A fresh extension of the work is contemplated in visits by the district surgeon of Kanye to Moshupa and Manyana In the northern part of the territory, owing to changes and interruptions throughout the medical service, exact statistics are not available But the reports from various reliable sources are all encouraging, and, with the gradual completion and stabilising of the medical service, and increased resources for accumulating stocks of the necessary novo-arsenical preparations, the possibilities in this particular field are very great and to a large extent realisable

The death of one of the medical officers during the year led to a certain amount of disorganisation The consequent changes and service requirements have been met by a temporary arrangement, the permanent readjustment to be postponed pending the selection of a suitable whole-time officer An important step in the extension of the medical service has been the appointment of a medical officer to N'gamiland Discussions have taken place as to the possibility of making a beginning with the building of small modern hospitals at one or two of the principal centres, and, financial circumstances permitting, provision will be made on this behalf in the next estimates The daily average of patients treated at Gaberones during the year was 7 78, of whom 0 01 were Europeans, making the total number of treatments 2346

The prevalence of plague, bubonic and pneumonic, in certain portions of the Union contiguous to the territory, and particularly at De Aar and Kimberley, which are situated on the direct line of railway from the south, prompted the administration to take certain precautionary measures, both within and without the territory For some time past the most effective trap procurable both for rats and mice has been in use in all public offices, stores, and buildings, and monthly returns of captures are rendered *to*, and collated by, the principal medical officer The European officials and other residents of the territory have also been made alive to the need for destroying *rodents* wherever seen. Particulars as to the life-history of the flea and the several methods of destroying the insect have been disseminated amongst *the inhabitants*, European and native, with a plain intimation that fleas were the carriers to human beings of plague germs from plague-infected rodents and other furred animals, and an intensive campaign of destruction was encouraged The P M.O has under consideration a scheme for preparing and assembling in advance all the essential elements of an organisation which would be capable of dealing with plague in territory should *an outbreak* suddenly occur In this respect he is fortunate in having the assistance temporarily of Dr P Targett Adams, late medical officer of health for the *Orange* Free State, whose experience of plague in the Union is almost unrivalled

HAY FEVER, TRUE AND FALSE

THIS year hay fever seems to have been discussed more *than usual in the press* and in lay circles, but it would be rash to draw the conclusion that it has been more prevalent Some twenty years ago it was customary for practitioners to dismiss this distressing *complaint as* mere neurosis, of which any worthy citizen ought to be rather ashamed Nowadays, hay fever is as respectable as a broken leg, and just as any acute fever is liable to be *called influenza, doctors* are tempted to diagnose any rhinorrhœa as hay fever We may point out that for this year true hay fever has ended, for it only lasts so long as the pollen cloud lasts over England In the south this period extends almost exactly from May 20th to July 15th—a little earlier or later according to the weather, and certainly a little later this year But it varies less than might be imagined, since it depends more on length of daylight than on temperature Symptoms do not coincide exactly with these dates for two reasons (1) conditions are described as hay fever without adequate reason, (2) concurrent illness may supervene and blur the outlines of true hay fever Anyone called on to treat "hay fever" after the middle of July should first consider whether pollen ever had anything to do with the symptoms and if so what other sensitisation is now keeping them going, infected *throat*, teeth, and tonsils—and possibly infections elsewhere—may be incriminated Other possibilities must be borne in mind, including substances in food or in atmospheric dust—e g, horse-dung to those who are horse sensitive In the treatment of pseudo hay fever, specific therapy can be expected to do little or nothing *unless a more accurate diagnosis* can be made There remain for consideration shock tactics, suggestion, and ointments or washes containing mild local anæsthetics or adrenalin—*according to the taste* or idiosyncrasies of the practitioner

AN IMPROVED SPOON THE "*CACHON*"

THE accident of a spoon slipping into a plate of soup or other liquid or semi-liquid food is annoying, and to prevent such contretemps "cachon" table ware has been devised by Messrs Joseph Gilbert and Sons, of Sun Works, Bissell street, Birmingham At the handle end of the spoon or fork, and underneath it, a slight projection, technically called a nib, is made at right angles to the plane of the article in such a manner as to prevent it slipping beyond the edge of the plate or vessel in or on which *it may be resting* The "nib" is in no way conspicuous, does not affect the balance or handling of the article, and does not detract from any beauty of design *that it may possess* Table spoons or forks, salad servers, butter knives, dessert spoons or forks, and tea spoons are made with the non slipping device in Era Silver, *Nuva Plate* Gilbert Plate, and in other materials for table ware manufactured by the firm

A HASTY GENERALISATION

THE following reached us unvouched for by signature, but it is worth printing as showing how the estimate of one angry man, probably in connexion with one piece of tactlessness, may produce sweeping denunciations, damaging *to the medical profession* —

> *The Infirmaries and Hospitals*
>
> All over the country these institutions are getting into the control of cliques of unscrupulous guinea *snatching doctors*
>
> Doctors get put upon the staffs of hospitals, through various forms of influence, nepotism, freemasonry, and the like, seldom or never through any special merit
>
> By or through their connexion with a hospital these men are enabled to pretend to be specialists, and to charge three guineas a visit or even a consultation There is no such thing among them as a specialist in surgery, medicine, or midwifery, indeed, many of these frauds have been common panel doctors and they would remain such but for their hospital appointment
>
> People who can visit these humbugs and pay *them* three guineas can get a bed without any waiting, often next day
>
> Poor people have to wait months and mostly go into the workhouse wards Mostly they go unrelieved.

These hasty generalisations, though sincere, are mischievous The *development* of local consulting, based upon local esteem, is exactly the outcome of panel practice which is most to be desired Patients seen *privately* are often found to need prompt hospital treatment, and no general indictments of hospital administration or professional conduct can be founded upon this situation No doubt abuses occur, but certainly not to the extent that warrants an attack of the above sort, *which* we publish in order to deny its accuracy as a series of generalisations *Of the* particular episode which led up to the communication we know nothing

Hunterian Oration

ON THE

HÆMORRHAGIC DIATHESIS: ANGIO-STAXIS.*

By H LETHEBY TIDY, M.D. Oxf,
F R C P. Lond,
PHYSICIAN, ROYAL NORTHERN HOSPITAL, AND ASSISTANT PHYSICIAN, ST. THOMAS'S HOSPITAL.

The existence of a hæmorrhagic diathesis is generally accepted but the term is little used in medical literature Patients come under observation suffering from various types of hæmorrhage and from forms of anæmia for which it is frequently difficult to find a definite diagnosis Often such cases are finally entitled "primary purpura" or simply "severe anæmia" Such well-recognised entities as leukæmia, acholuric jaundice, hæmophilia, and congenital syphilis are not referred to here, nor are cases where the symptoms are secondary to some other cause such as sepsis We shall be considering the shadowy group of primary purpuras and hæmorrhages from the mucous membranes Purpura is the predominant manifestation but the clinical variations are innumerable

The types of primary purpura usually described in text-books in the past are (1) purpura simplex, (2) purpura rheumatica, (3) Henoch's purpura, and (4) purpura hæmorrhagica

Single cases appear in the literature with very varied blood pictures under titles such as "acute purpura," "recurrent hæmaturia and severe anæmia," "purpura hæmorrhagica," "chronic purpura hæmorrhagica," "chronic purpura hæmorrhagica without skin lesions," "hereditary purpura," and many others, and also in recent literature as "essential thrombopenia," "aleukia," and various titles relating to changes in the platelets and the effects of splenectomy The question is how far these are to be regarded as separate conditions or as various grades and stages of the same entity.

CLINICAL ASPECT

Two clinical features which have attracted much attention in the past are joint pains and abdominal pains The classification of primary purpura given above largely depends on these features, but little attention is paid to them in recent writings Joint pains are a feature of nearly every case of purpura of more than the slightest severity, and hence do not justify the separation of a special group Henoch's purpura, however will for the present be left out of consideration as it appears probable that escape of fluid from the vessels, apart from the solid constituents, is a special feature of this type, which thus justifies the term, "anaphylactoid" purpura, used by the French

No two accounts agree as to the characteristics of purpura hæmorrhagica On such points as the size of the spleen, the number of the white cells and changes in the bone-marrow the accounts are vague and usually incomplete The clinical points apparently relied upon for diagnosis are the severity of the symptoms and the occurrence of hæmorrhage from the mucous membranes, especially the gums It is remarkable how many writers ascribe great importance to hæmorrhage from the gums It is clear however, that the diagnosis usually rests clinically on the severity of the hæmorrhages

Now it is possible to trace, not only in different individuals, but sometimes even at various periods in the same individual every grade between purpura simplex and purpura hæmorrhagica There are families in which one member exhibits slight chronic purpura alone, another member hæmorrhages which may be confined, for example, to hæmaturia or epistaxis, while yet another member may exhibit the severer types [1] Cases also occur where an individual may at one time pass through severe and dangerous attacks and then for long periods exhibit mild grades of purpura or perhaps epistaxis or hæmaturia alone. Several cases were recorded by Osler,[2] but, in fact, in varying degrees they are by no means uncommon in practice In such cases no dividing line can be drawn between different types and groups, and the manifestations are evidently those of the same entity occurring in varying grades of severity .

Recently a separate group of purpura has been described under the title of "Essential Thrombopenia" or Thrombocytopenia.' Frank,[3] who is responsible for this, definitely stated that he considered the entity as identical with what has been described as purpura hæmorrhagica in the past It appears from a study of his cases (and still more from those of other authorities described under this title) that he includes grades far less severe than would have been classified clinically as purpura hæmorrhagica The justification of such an entity, therefore, cannot rest on the clinical manifestations and must depend on features in the blood, which will be referred to subsequently This is a question of special importance, since it is widely stated not only that splenectomy is indicated in this group, but that it should be performed in no other type The study of cases published recently by authors other than Frank under this title with successful results from splenectomy show that they have drifted, and in my opinion correctly so, still further from cases which would have been diagnosed in the past as purpura hæmorrhagica and it is doubtful whether some of them would have been accepted originally by Frank as his entity on clinical or even on hæmatological grounds The cases now being regarded as purpura hæmorrhagica or essential thrombopenia are mainly those that in the past would have been regarded as severer or more chronic forms of purpura, but not of the severity which used to justify the term purpura hæmorrhagica; many would have been placed in the group of purpura rheumatica. Clinically there is no definition which will differentiate them, they do not correspond to a separate type but only to a certain grade of severity As evidence of the unity of the various groups, a recent statement of Kaznelson[4] may be quoted to which Bruce Williamson[5] has referred, "that the effect of surgical treatment in this case was to transform purpura hæmorrhagica into purpura simplex."

It is evident that no clinical distinction except degree of severity can be drawn between these various forms with the exception, perhaps, of anaphylactoid purpura.

EFFECT OF CAPILLARY HÆMORRHAGES ON THE BLOOD AND HÆMOPOIETIC TISSUES

The Bone-marrow

It may be accepted in general, without entering into details, that the marrow supplies red cells, polymorphonuclear leucocytes, and platelets [6] The response of the marrow to the escape and loss of blood from the vessels and to the resulting demand for replacement will vary with the severity the frequency of the occurrence, and the acuteness or chronicity of the hæmorrhages The effect on the bone-marrow may be summarised as follows —

1 *Sudden Severe Demand*—The marrow and hæmopoietic tissues though normal at the time may be unable to supply from its reserves sufficient cells to maintain life, other changes have not time to occur Thus in the extreme types recorded as "acute purpura hæmorrhagica or "purpura fulminans, the marrow at autopsy rarely shows any definite changes It may be noted that the colour and apparent extent of the red marrow present in all these conditions is influenced by (1) the actual amount of red marrow tissue present (2) the degree of anæmia and consequent

---

* Based on the annual Hunterian oration (1926) of the Hunterian Society

5373

pallor, and (3) hæmorrhages into the bone-marrow itself which may closely simulate red marrow tissue and give the appearance of an increased area and activity

2. *Milder Grades of Hæmorrhages.*—The marrow may be able to cope with these losses sufficiently for life to continue The output may be insufficient completely to replace the losses, and various degrees of anæmia and of deficiency of platelets may be directly due to this cause There is little direct evidence of the state of the bone-marrow in such stages, but apparently it may be in varying grades of slight hyperplasia or anaplasia.

3 *Repeated Hæmorrhages* —These may continue to be just a little more than the marrow can replace, until finally chronic exhaustion occurs and the marrow becomes aplastic As repeated severe demands would lead to rapid failure, as in Group 1, it would be expected that in this group the hæmorrhages cannot be very marked, at least until the terminal stages, and clinical records are consistent with this The patient is indeed more anæmic than purpuric, a condition often observed in childhood With aplasia or with the slighter condition of anaplasia there will be diminution even of the normal supplies of cells, and this at a time when the demand is greater than normal

Effects on the Spleen.

The functions of the spleen as regards the blood fall under three main headings 1. Action as a reservoir 2 Destruction of defective cellular and formed constituents 3 Formation of lymphoid cells

(1) The action of the spleen as a reservoir for the blood has been emphasised by Barcroft and his co-workers[7] It is evident that a normal spleen during life holds a considerable amount of blood in reserve

(2) It may be accepted that the spleen will destroy cells which are below a certain standard, either from senility or defective production Unfortunately we have no means of judging when red cells are effete In the hæmorrhagic conditions it may be expected that the marrow will produce a higher proportion of defective red cells when working under unusual demands In any case the spleen will be destroying red cells which could partially function and in the circumstances be of advantage to the organism This undoubtedly occurs in acholuric jaundice and is the reason for the benefit of splenectomy The position with regard to platelets will be similar to that of the red cells

Whether the spleen enlarges or not will depend on the absolute number of effete or defective cells to be dealt with and not on their proportion to the total. When the marrow is aplastic and the red cells constantly number, say, 1,000,000 per c mm , the total work for the spleen may be less than normal, and there is no reason why the spleen should enlarge ; in fact, it is rarely palpable in these cases In acute severe forms of hæmorrhage the action of the spleen in dealing with the débris of cells from the hæmorrhages may be a factor in producing enlargement of a spodogenous nature ; in these cases the spleen may or may not be palpable, but usually becomes so if a very severe condition lasts for a few days It has often been observed in severe cases that the spleen becomes palpable as the condition improves and the number of circulating cells increases[8,9] The spleen, therefore, is not usually palpably enlarged in the mild or in acute conditions, or when the number of red cells is very low It is most often palpable in cases of moderate severity When palpable in severe cases the enlargement may have occurred previously It has to be considerably enlarged before it becomes palpable In this group of conditions it is rare for the size to exceed one or two finger-breadths below the costal margin Thus the enlargement is very variable and the question whether it is palpable in a given case is a matter of comparatively little importance A marked enlargement is, however, of importance as indicating that the case probably does not belong to the hæmorrhagic diathesis

(3) It is clear that in this condition, as in others, the production of lymphocytes suffers less than does that of other cells Little else can be said as to lymphocytes and the lymphopoietic tissues, since unfortunately we know practically nothing as to the life, death, or functions of these cells

Changes in the Blood Cells and Hæmoglobin

These will depend on many factors, such as the condition of the bone-marrow, the chronicity of the hæmorrhages, and their severity at the period of observation With sudden severe purpura and hæmorrhages there is necessarily a very rapid fall in the number of red cells and an equivalent or greater fall in the percentage of hæmoglobin, the reserves being exhausted and the amount of replacement being small There is usually also a fall in white cells, especially polymorphonuclears, no doubt because the marrow is more greatly affected than the lymphoid tissue This results in a leucopenia with a relative lymphocytosis The percentage of lymphocytes may rise to 60 or 70, or higher.

In the chronic forms, characterised usually and almost necessarily by the less severity or even slightness of the obvious hæmorrhagic manifestations, there is usually a persistent marked reduction of the number of red blood cells With this there is often a leucopenia with relative lymphocytosis, which may be ascribed to anaplasia or aplasia of the bone-marrow ; in such cases the tendency to improvement between exacerbations and under treatment is certainly less than in those with a leucocytosis

The effects of the hæmorrhagic diathesis may give a blood count suggesting or even identical with lymphoid leukæmia Cases have been recorded in the literature in which the polynuclear cells have been entirely absent, and the diagnosis of lymphoid leukæmia[10] would certainly have been made had not the patient recovered If hæmorrhages are also present, there does not appear to be any method by which the two conditions can necessarily be distinguished, either clinically, pathologically, or hæmatologically Probably some of the cases diagnosed as acute lymphoid leukæmia but without any glandular enlargement are really of this nature

In the cases of moderate severity the number of red cells in a quiescent period may be normal or nearly normal, or it may be reduced in varying extents, and this reduction is naturally increased during any exacerbation The leucocytes may be, and in moderate chronic cases frequently are, definitely increased with a high percentage of polynuclear cells , this is evidence of activity of the bone-marrow and no case with such a white cell count need be despaired of. Since the changes in the number and percentage of the various cells must depend on so many factors, it is not surprising to find that there is no constancy in the changes Practically every combination may occur of (*a*) changes in the number of red cells, with (*b*) leucopenia or leucocytosis, and (*c*) increased percentage of lymphocytes or polynuclears Rapid variations may also occur in the number of the cells The hæmorrhagic diathesis accounts for many of the cases which appear in the literature with blood counts which do not fit into any of the recognised entities These are especially common among children and leads to the attempt to make many classifications on different bases and to many disputed diagnoses

The changes in the percentage of hæmoglobin follow in general the changes in the number of red cells There is the usual tendency of hæmoglobin to form more slowly than the red cells, a reduced colour-index resulting, but this is less constant than in most anæmias, and the colour-index may be nearly normal. The morphological changes in the cells are only those which would be expected to accompany the changes already referred to In the cases associated with marked anæmia there may be anisocytosis and poikilocytosis and, less commonly, such changes as polychromatophilia and punctate basophilia, but these may be completely absent and the red cells appear normal even in severe cases Normoblasts in small numbers are not uncommonly found but megaloblasts are very rare and practically confined to cases in children With leucocytosis a few myelocytes or doubtful myelocytes may be present. There is no alteration in the fragility of the red cells.

Platelets

The normal number of platelets in the blood may be taken as 200,000 to 300,000 per c.mm The estimation of the number is subject to a large margin of error, and only large variations can be definitely recognised It is, however, apparent that the number of circulating platelets is very susceptible to factors influencing them and it may vary with great rapidity.

It may be accepted that the function of the platelets is concerned with preventing the escape of blood from the vessels, and that in fulfilling this function platelets are withdrawn from and lost to the circulating blood Hence in hæmorrhagic conditions the number of platelets is influenced first by the group of factors already discussed, which affect the red and white cells, including the chronic and immediate extent of the hæmorrhages, and the condition of the bone-marrow and spleen; and secondly, by an additional factor, the withdrawal or consumption of platelets resulting from their attempts to check the hæmorrhages It has long been known that there is a marked decrease or even complete absence of platelets in cases of hæmorrhage of the type of purpura hæmorrhagica It must, however, be emphasised that a reduction may be present in any case with purpura and hæmorrhages, whatever the origin may be It may almost be said that they must of necessity be diminished in the circulating blood when capillary hæmorrhages are severe Hayem pointed out that reduction in the number of platelets occurred even in secondary purpura but the statement that reduction is confined to purpura hæmorrhagica has been copied from one book to another. They are also reduced to the neighbourhood of zero when the marrow is aplastic, whatever may be the cause of the change.

In less severe forms of the hæmorrhagic diathesis the number of platelets shows changes of the same nature as the red cells, though always with a greater response to the occurrence of purpura and hæmorrhages and the greater tendency both to rapid variation and to diminution The number may be within normal limits in the quiescent periods of moderate cases This may be so even in conjunction with some grade of anæmia. The number is more frequently below normal and may be at any point, depending no doubt on the factors mentioned above It is common to see the figure in the neighbourhood of 100 000 per c mm.

In cases of the hæmorrhagic diathesis, the number of platelets may thus be anywhere between normal and zero, and no definite line can be drawn at any point which will divide the cases into separate groups or entities Nor will a count of platelets serve to distinguish "primary" from "secondary" purpuras Neither clinically nor from a study of the blood-cells and platelets can any distinction be drawn except in severity between the various manifestations of the hæmorrhagic diathesis

COAGULATION TIME AND CERTAIN OTHER PHENOMENA.

1 *Coagulation Time* —When tested by recent methods the coagulation time in the hæmorrhagic diathesis is within normal limits By Wright's method it is often difficult to say at what point the blood has clotted. For a considerable time it may be in a sticky state when it can just be expelled from the tubes Coagulation may commence within normal limits but not proceed normally and clotting may not be completed for a considerable time This is probably the explanation of many cases in which prolonged coagulation times have been recorded in the past, the diagnosis between hæmophilia and the hæmorrhagic diathesis may thus be obscured. It is remarkable that this is especially observable in German literature where the distinction between the two conditions usually does not appear to have been clearly recognised until recently. The phenomenon differs entirely from hæmophilia, in which the onset of coagulation is delayed but clotting proceeds normally when it commences The modern methods of estimating the coagulation time will clearly distinguish hæmophilia

2. *Prolongation of Bleeding Time*—When the hæmorrhagic diathesis is active the bleeding from a prick, if the blood is dabbed off at half-minute intervals continues for many minutes or even long periods, instead of ceasing in the usual normal time of one to three minutes This prolongation of the bleeding time may be very marked, but in quiescent periods it is usually absent. It is an interesting feature in the hæmorrhagic diathesis but bleeding time is a very variable manifestation and may be prolonged in other conditions, especially with anæmia and too much importance should not be attached to it

3. *Capillary Resistance Test*—Partial constriction of the arm by a band may produce a crop of petechiæ. This is an interesting phenomenon, but like the preceding test, it is usually absent in quiescent periods.

4. *Failure of Clot Retraction*—When blood from a case of the hæmorrhagic diathesis in the active state is allowed to clot in a tube, the clot which forms often does not retract and express the serum normally. This phenomenon is not uncommon in many other conditions and is familiar to every worker in serum.

It may be said of the above tests that they add little definite information except in the valuable distinction from hæmophilia

CAUSE OF THE HÆMORRHAGIC DIATHESIS.

The essential manifestation of the hæmorrhagic diathesis is the escape of blood through the walls of the capillary and small blood-vessels The cause of this is at present in doubt; it must lie initially in some abnormality either of the blood or of the wall of the blood-vessels.

Attention has lately been especially directed to the influence of the platelets, and it is generally accepted that they have some action in preventing capillary hæmorrhages Duke[11] ascribed this to their property of adhering rapidly in masses to the wall of a blood-vessel at any point where the endothelium is injured or unduly permeable the initial lesion of the hæmorrhagic diathesis thus being placed in the vessel wall Frank[3] believes that the platelets are primarily concerned with coagulation, and that the hæmorrhages are due to defects of clotting when the circulating platelets are reduced in number. He has described a syndrome of "essential thrombopenia," which he considers to be a true disease, a "sharply circumscribed clinical entity," and in which the reduction of platelets is the primary event None of the characteristics given distinguishes "essential thrombopenia" from other forms of purpura otherwise than as a grade of severity, and the view that a separate disease can be carved out of the primary purpuras on these grounds should be abandoned. There is definite evidence that reduction in the number of circulating platelets is not the essential cause of the hæmorrhages. Brill and Rosenthal[12] removed the spleen from a patient with hæmorrhages in whom the blood showed a great reduction in the number of platelets Subsequent to the operation the platelets fell to 1000 per c mm., but the hæmorrhages had not returned. Other observers have had similar results Bedson[13] has carried out extensive experimental investigations on platelets in animals and he has produced a serum which will reduce the platelets to zero without the occurrence of any hæmorrhages. It appears clear that variations in the number of the circulating platelets are not the initial factor in the primary purpuras.

It does not appear possible that changes in the blood-cells are the cause Every variation may be observed and there is no constant change Neither leucocytosis nor extreme leucopenia[6] are necessarily associated with hæmorrhages No abnormalities have been distinguished in the blood which are comparable to acholuric jaundice or hæmophilia.

It has been suggested that the spleen may act in some manner on the blood rendering passage through the vessel walls abnormally easy. This explanation is negatived by the fact that hæmorrhages may recur after splenectomy

By the process of exclusion we are led to the view that an abnormal permeability of the blood-vessels is the essential factor, but there is little direct evidence Bedson[14] watched under the microscope the mesenteric vessels of an animal rendered hæmorrhagic experimentally by injections of certain sera He states that "the majority of the hæmorrhages appear to form by an exaggerated form of diapedesis" On microscopic examination of the tissues "the endothelium appears swollen and œdematous, the cells standing off the vessel walls" Bedson also produced hæmorrhages in animals by the use of two different injections, the first designed to injure the vessel endothelium, and the second producing a reduction in the number of platelets Neither of these caused hæmorrhages when employed alone As reduction of platelets alone does not result in hæmorrhages, it would appear that the essential factor is injury to the vessel endothelium.

The evidence brings us back to the view expressed by Duke many years ago that the essential factor in primary purpura is an abnormal permeability of the endothelium of the small vessels The function of the platelets is to adhere to such permeable sites and prevent the escape of blood In so doing the platelets are withdrawn from the circulation The greater the reduction in their numbers, the greater will be the possibility of blood escaping from unprotected points Any condition, such as aplasia of the marrow which causes a diminution of platelets, places the body in a susceptible state ready for hæmorrhages to occur, and increases the tendency if already present

Such a view brings the primary purpuras into a line with conditions characterised only by escape of the fluid portions of blood The term "angio-staxis" may be suggested to include the primary purpuras and the various manifestations of the hæmorrhagic diathesis

The Effects of Splenectomy

Kaznelson[15] first performed splenectomy in a case of purpura hæmorrhagica in 1915 Since then numerous cases have been reported

Whipple[16] has reviewed over 80 cases. In very acute cases the mortality has been very high, but excluding these unsuitable conditions the immediate mortality does not exceed 10 per cent No doubt some fatal cases have not been recorded, but the results of series suggest that with greater familiarity with the operation the mortality will tend to fall The beneficial results in the surviving cases are undoubted

Bedson[17] has investigated in animals the effect of splenectomy on the production of experimental purpura His results show that. 1. The number of platelets rises after the operation and returns in a few weeks to its previous figure 2 Increased protection against a hæmorrhage-producing serum is present while the number of platelets is increased The protection is only comparative and is lost when the number returns to normal 3 After a few weeks the animal has returned to the statu quo ante, other tissues having taken on the functions of the spleen

In the hæmorrhagic diathesis in the human being the important effects of splenectomy may be summarised as follows. 1. The number of platelets rises almost immediately After a varying lapse of time it may fall again to the previous level 2 The hæmorrhages diminish or cease immediately after the operation 3 Recurrences may take place, but rarely to a severe degree.

The result of splenectomy may be partly explained by reference to acholuric jaundice, in which it is agreed that the marrow is primarily producing a high proportion of red cells which are not perfect, but which are able to carry out their functions to a useful degree. Owing to their imperfection they are destroyed in large numbers by the spleen, and the body consequently benefits by splenectomy The condition in the hæmorrhagic diathesis is not quite the same, but the removal of the spleen will diminish the destruction of cells and platelets and permanently remove one source of drain on the marrow The immediate effect on the hæmorrhages may be ascribed to the flooding of the circulation with platelets either from reserves or from stimulation of the marrow in the same manner as the well-recognised leucocytosis which follows splenectomy Splenectomy is not a "cure," but it is the best method of treatment available.

Indications for Splenectomy.

Reasons have been given for considering that all cases of the hæmorrhagic diathesis belong to one group, and hence the question whether splenectomy is indicated or not arises in every case

The blood examination is necessary to exclude other diseases, but apart from this the decision as to operation should be practically based on the clinical condition of the patient and on the manifestations in the past. The degree of anæmia is of obvious importance. So, too, is a count of white cells, since a leucocytosis, especially with a polynucleosis, is a sign that the bone-marrow is more active than in the presence of a leucopenia A count of platelets is of less importance A study of cases and of those recorded in the literature shows that the decision as to operation can be arrived at properly in the absence of a platelet count

In very severe forms, either acute or chronic, in which operation would be dangerous, blood transfusion should be performed, and the question of operation considered subsequently This procedure may also be carried out in less severe cases

The question whether splenectomy should be performed should be considered in every case of purpura or hæmorrhages, and the decision should depend on the answers to the questions. 1 Is this a case of the hæmorrhagic diathesis? 2 If so, is it of such severity as calls for splenectomy while giving a fair prospect of recovery from the operation?

Summary

1. The conditions due to the hæmorrhagic diathesis include the primary purpuras, cases recorded in the literature under such titles as "chronic," "recurrent" and "hereditary" purpura, and as "essential thrombopenia," some of the ill-defined blood diseases of childhood and some of the forms of local hæmorrhages from the mucous membranes The condition is usually sporadic, but may be hereditary or familial

2 The initial defect is probably abnormal permeability of the endothelium of the small blood-vessels

3 There is no essential difference between the various groups The cases differ in degrees of severity and in the effects of secondary changes

4. Changes in the total number and differential distribution of the blood-cells, in the number of platelets, in the condition of the bone-marrow, and in the size of the spleen are secondary phenomena There are no constant or typical changes

5 Reduction in the number of platelets in any condition is not necessarily followed by hæmorrhages, but is a factor in their occurrence and severity Reduction may occur in any form of purpura and is not a criterion for the separation of a special type

6 Splenectomy is beneficial without being a "cure"

7 The question of splenectomy should be considered in every case of the hæmorrhagic diathesis

The decision as to operation should be based essentially on the clinical condition of the patient in the present and in the past The number of platelets, the size of the spleen, and the bleeding time are of subsidiary importance only In acute forms and with advanced anæmia, blood transfusion should be performed first

The term "angio-staxis" is suggested to include the group of the hæmorrhagic diathesis

REFERENCES.

1 Glanzmann Jahrb f Kinderheilk.,1918, lxxxviii ,1 and 113
2 Osler Amer Jour Med Sci , 1895, cx., 631
3 Frank Berl. klin Woch , 1915 et seq , lii , 454
4 Kaznelson Med. Klin., 1921, xvii , 974
5 Bruce Williamson Arch Dis Child., February, 1926
6 Bedson Jour Path. and Bact , 1925, xxviii , 101.
7 Barcroft Jour Phys , January, 1925
8 Thursfield, Poynton, and Paterson Brit Jour Dis Child., 1922, xix., 57 et seq.
9 Herrman Amer Jour Dis Child., 1922, xxiii , 484
10 Evans and Happ Bull. Johns Hopkins Hosp , 1922, i , 371
11 Duke. Arch. Int Med., 1913, xi , 100
12 Brill and Rosenthal Arch Int Med , 1923, xxxii , 939
13 Bedson Brit Jour Exp Path , 1923, iv , 308 , and Jour Path and Bact , 1925, xxviii , 101
14 Bedson. Jour Path and Bact , 1922, xxv , 94
15 Kaznelson Wien klin. Wochenschr , 1916, xxix.
16 Whipple Surg , Gyn , and Obst , 1926, xlii , 329
17 Bedson THE LANCET, 1924, ii , 1117

THE COMPARATIVE VALUE OF RENAL EFFICIENCY TESTS IN PATIENTS WITH ENLARGED PROSTATES

By JOHN MARRACK, D S O , M C., M D CAMB ,

AND

SYBIL ROBINSON, M B LOND

(From the Hale Clinical Laboratory and the Wards of the London Hospital, E)

ALTHOUGH the use of renal efficiency tests in subjects for prostatectomy has frequently been discussed, yet the relative value of these tests has not, so far as we know, been compared in the same patients The three tests—blood-urea, urea concentration (MacLean) and phenolsulphonephthalein—have been used at the London Hospital for over four years and a summary of results of these tests is given in Table I We do not propose to discuss the surgical aspects of the subjects, but should point out that no operation was performed in most of the cases as they were considered unfit, and that of the 113 cases on whom prostatectomy was performed only 16 died and 11 suffered from serious complications

We have regarded blood-urea as the primary test, partly because we have come to consider it of the greatest value, but also because it is necessary to estimate it when using the urea-concentration test in order to avoid erroneous conclusions.

In group 1 the cases are arranged according to the highest value of blood-urea found In many cases in which a high blood-urea was found on admission the condition improved after a period of treatment; if the blood-urea was again estimated (this, unfortunately, was not done in all the cases) it was found to have fallen to normal limits; in other cases, however the blood-urea remained high and in a few rose from normal to high figures during their period in hospital

The reason for classing the cases according to their highest blood-urea is that a temporary high blood-urea can be regarded as evidence of interference with excretion,[1] and, therefore, of exposure of the kidneys to back pressure and risk of infection, and danger of development of further trouble even when the temporary interference has been removed.

It is obvious from the table that the blood-urea alone is a very valuable index of a patient's fitness for prostatectomy This is even more striking when we take into account that only two cases in group A and five in group B were operated on without an ample period of drainage Among the 61 cases with blood-urea below 40 mg per 100 c cm. (low and medium normal) there were only three deaths (5 per cent.), and in two of these cases the kidneys were normal; among the 101 with blood-urea above 40 mg. per 100 c cm (high normal and abnormal) there were 28 deaths (27 7 per cent).

TABLE I.

Group 1. *Blood-urea*

—	—	Total No of cases	Died, R.I Before op	Died, R.I After op	Died; other causes	Unfit, R I	Unfit; other causes.	Did badly, R I	Did badly, other causes	Total died unfit and did badly	Total did well
	mg per 100 cc										
A	60	33	9	2	3(*a*)	2	2(*c*)	4	—	22	11
B	50–59	26	2	1	4(*b*)	—	1(*f*)	1	—	9	17
C	40–49	42	3	—	4(*c*)	—	2(*g*)	1	—	10	32
D	30–39	45	—	1	—	—	6(*h*)	1	1(*i*)	9	36
E	<30	16	—	—	2(*d*)	—	—	—	—	2	14

R.I. = Renal inefficiency.

Died, other causes—(*a*) 2 embolism, 1 endocarditis. (*b*) 1 embolism 1 broncho-pneumonia, 1 hæmorrhage, 1 thrombosis (*c*) 2 embolism, 1 hæmorrhage, 1 broncho-pneumonia. (*d*) 1 embolism, 1 hæmorrhage

Unfit, other causes—(*e*) 1 senile, 1 mental. (*f*) Emphysema. (*g*) 1 broncho-pneumonia, 1 senile (*h*) 1 broncho pneumonia 1 hæmophilia, 1 mental, 1 heart, 1 pneumonia, 1 senile

Did badly, other causes—(*i*) Diverticulitis

Group 2 *Urea Concentration.*

—	—	Total No of cases	Died, R.I Before op	Died, R.I After op	Died; other causes	Unfit, R I	Unfit; other causes.	Did badly, R I	Did badly, other causes	Total died unfit and did badly	Total did well
	g										
A	3·0	11	—	—	2(*a*)	—	1(*d*)	—	—	3	8
B	2 5–2 9	11	—	—	—	—	—	—	—	—	11
C	2·0–2 4	28	2	—	4(*b*)	—	1(*e*)	1(*h*)	—	8	20
D	1 5–1 9	25	2	2	—	1	1(*f*)	1	—	7	18
E	1 5	17	2	—	1(*c*)	3	1(*g*)	—	1(*i*)	8	9

Died other causes—(*a*) 1 thrombosis, 1 pulmonary embolism. (*b*) 2 embolism, 2 hæmorrhage (*c*) Hæmorrhage

Unfit, other causes.—(*d*) Bronchitis (*e*) Heart (*f*) Mental. (*g*) Hæmophilia

Did badly, R I—(*h*) Urinary fever

Did badly, other causes—Diverticulitis

Group 3 *P S P.*

—	—	Total No of cases	Died, R.I Before op	Died, R.I After op	Died; other causes	Unfit, R I	Unfit; other causes.	Did badly, R I	Did badly, other causes	Total died unfit and did badly	Total did well
	%										
A	40	42	—	—	1(*a*)	—	—	—	3(*g*)	4	38
B	30–39	25	—	1	3(*b*)	—	3(*d*)	—	—	7	18
C	<30	34	1	2	3(*c*)	10	4(*e*)	1(*f*)	—	21	13

Died other causes—(*a*) Hæmorrhage (*b*) 2 embolism, 1 thrombosis (*c*) 2 hæmorrhage 1 broncho pneumonia

Unfit, other causes—(*d*) 1 heart 1 bronchitis, 1 mental (*e*) 1 hæmophilia, 1 mental, 1 bronchitis, 1 senile.

Did badly, R.I—(*f*) Urinary fever

Did badly, other causes—(*g*) 1 diverticulitis, 1 epididymo-orchitis 1 recto vesical fistula.

We have included in this discussion patients who did badly from causes not directly due to damaged kidneys This may appear unreasonable, but it is evident from this table that such complications are much more likely to occur among the patients with abnormal blood-urea than among those with normal, either because kidney damage renders the patients more liable to the complications—e g , broncho-pneumonia—or because the cause of the complication also causes kidney damage—e g , thrombosis of the coronary arteries.

We have excluded the urea-concentration tests in which the urea concentration was under 2 per cent and the hourly volume over 120 c.cm , as we consider that patients with fairly sound kidneys may fail to attain a concentration of 2 per cent when the volume is above this figure We fully recognise the arbitrary nature of the choice of this limit, and that some method of "weighting" the significance of the urea concentration according to the volume passed would be more just, but we have not attempted this as such weighting, unless done according to some rigid formula, would be apt to degenerate, in a paper such as this, into "cooking" When an hourly volume over 120 c cm was passed the test was often not repeated, as the *surgeon was satisfied* with other tests; hence the number of cases in which the urea concentration is here recorded is only 92 The results of this test are also satisfactory, especially when it is considered that six of the cases in group 2, A, B, and C, that died had very high blood-urea and that, therefore, the normal urea concentration in their urine could not be regarded as evidence of a sound kidney

---

[1] It is true that a high blood-urea may be encountered in diseases such as pneumonia, severe heart failure and intestinal obstruction, also after ingestion of large quantities of urea or even a high protein diet without kidney damage It is unlikely, however that anyone would choose these conditions when performing tests of renal efficiency on patients with enlarged prostates

It was found impossible to classify the results of phenolsulphonephthalein excretion in more detail than is already given in the table In the first place the cases with enlarged prostates often give surprisingly low returns of phenolsulphonephthalein, this may be partly, but not we think completely, explained by incomplete hourly samples, loss of phenolsulphonephthalein by destruction in infected alkaline urine in the bladder, and loss of dye by adhesion to the precipitate when the urine is cleared of blood However, with this limitation we get the valuable result that in group 3, A, only four patients did badly in any way—in three of these patients all the tests were satisfactory—and in group 3, B, in one only was the adverse result directly due to renal inefficiency In group 3 the majority of the cases still did well, and we have found patients with apparently sound kidneys giving very low values and others with undoubted renal damage giving figures of 20 or more So that low figures do not necessarily mean correspondingly damaged kidneys

As we have considered the blood-urea as the primary test we have now to consider to what degree the other tests supplement the blood-urea A certain number of patients with normal blood-urea did badly Can these be eliminated by the urea-concentration tests? Considering only those cases with normal blood-urea (i e, under 50 mg per 100 c cm) we find in group 2, A and B, 19, of whom three did badly, one from renal causes, in group 2, C, 27, of whom seven did badly with two renal; in group 2, D, 18, of whom five did badly with four renal, and in group 2, E, 10, of whom six did badly, three being renal

It may be inferred that if the blood-urea is normal there is more chance of a bad result if the urea concentration lies between 1 5 and 2 per cent and a much greater chance if it lies below 1 5 per cent Our experience is that the urea-concentration test is of much greater value as a supplement to the blood-urea in medical cases; probably the conditions of life are more conducive to retention of urea in prostate cases than in medical cases, so that urea retention occurs with a slighter degree of renal damage

The only value of the phenolsulphonephthalein test appears to be that excretions over 40 are certain evidence of fitness, among the 42 cases in this group there were 10 with blood-urea over 50, 11 with urea concentration 1 5–1 9, and 3 with urea concentration below 1 5; of these all did well except one, who died of hæmorrhage It does, therefore, give information that the other two tests may not give However, there is so great a liability to give low figures when the kidneys are sound that its value as a routine test is questionable

Table II shows cases in which the tests, bad at first, were repeated after some period of drainage either by catheter or cystotomy Unfortunately, the number is small, as in many cases a clinical improvement was regarded as sufficient evidence that the patient had become fit for operation and the tests were not repeated The Cases 4, 6, 10, and 11 illustrate the fact that, though the blood-urea may fall after drainage, the renal efficiency may remain bad and operation may be dangerous

It is in deciding on such cases, in which the blood-urea has fallen to normal on treatment, that the other tests might be expected to be of the greatest value, but the cases cited give little information on this point Cases 4 and 1 illustrate that a normal urea-concentration test is not sufficient evidence that the kidneys are in a satisfactory condition if the blood-urea is high.

TABLE II —*Effects of Drainage on Tests*

A *Catheter*

Case	Date	Blood-urea	P S P	Urea concentration	Result
1	22/3/21	60			Died, hæmorrhage
	1/4/21	80	15	180—1 7	
	8/4/21	75	50	90—2 6	
Cys	13/4/21				
	19/4/21	82	18	62—2 22	
Pros	4/5/21				
2	20/9/21	48	6	57—1 8	Nothing further done
Cys	27/9/21	65	21	78—1 9	
	11/10/21	37	18	42—1 8	
3	On admis	74			No further treatment
Cys	2 w l	28			
	2 w l	34			
	3 w l	24			
	4 w l	32			
4	1/9/21	100	10	30—2 7	Died, pyelo nephritis
Pros	19/9/21	37	20	87—1 8	
5	Catheter	58	33	28—2 52	Did well
	8 w l	48	49	83—2 82	
B *Cystotomy*					
6					
Cys	6/5/21				Died, broncho pneumonia
	9/5/21	52			
Pros	24/5/21	34	—	1 8	
7					
Cys	7/6/21	100			Did well
Pros	14/6/21				
	21/6/21	46	32	95—2 4	
8					
Cys	12/8/21	54 5	4	15—1 7	
Pros	29/8/21	35	—	170—1 8	
9					
Cys	21/4/26	73			Did very well
Pros	9/6/26	51			
10					
Cys		96	0	150—0 63	Under observation
	2 w l	60	14	84—0 72	
	7 w l	57			
	11 w l	39			
	13 w l	51	10	87—0 96	
11					
Cys		54			Died pyelonephritis
	1 w l	24			
	2 w l	30			
	3 w l	30			
12					
Cys		66	9	50—0 96	Died, uræmia
	3 w l	67	20	68—1 90	
13					
Cys		55			Did well
Pros	4 w l	42			
14					
Cys		72			Did well
Pros	5 w l	45			
15					
Cys		51	9	98—1 58	Died, ascending infection
	2 w l	60	13	84—0 72	
16					
Cys		49			Did well
Pros	2 w l	43			

Cys = cystotomy Pros = prostatectomy W L = weeks later

We consider that this series of cases illustrates the value of the blood-urea estimation, the urea-concentration test is of some value to supplement the blood-urea, probably most particularly in those cases in which the blood-urea has fallen after treatment, satisfactory conclusions can only be drawn from the phenolsulphonephthalein test when the results are high—such a result can be taken as certain evidence of sound kidneys—but the test is disappointing owing to the frequent occurrence of low results when the kidneys appear to be sound

We are indebted to the surgeons at the London Hospital for permission to make use of their cases

AURICULAR FLUTTER IN INFANCY.

BY F. J POYNTON, M.D , F.R C P. LOND ,
PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL AND HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET ,
AND
W G WYLLIE, M D EDIN , M R C P LOND ,
ASSISTANT PHYSICIAN, HOSPITAL FOR EPILEPSY AND PARALYSIS, MAIDA VALE , LATE REGISTRAR, HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

As far as we are aware the case we are about to describe is the first to be recorded of auricular flutter in an infant So far the age-limits between which cases of auricular flutter have been recognised are from the fifth to the seventy-fourth year, to quote from the work of Dr. W. T Ritchie [1] Flutter of the auricles, however, is probably not the only form of arrhythmia presented on occasion by the following case. as within a short space of time a variety of rhythms has been observed clinically, such as tachycardia extrasystoles, and a wildly disordered state of the cardiac action which can best be described as a delirium cordis On occasions when electrocardiographic tracings were obtainable, auricular flutter was demonstrated No tracings could be taken at times of the greatest cardiac disorder owing to the severity of the patient's symptoms

Description of Case

The patient a male, was first seen at the age of 4 months, and is now 3½ years old. He was born at full term of a normal labour and weighed 9 lb at birth. He is the second youngest of nine children, the eldest being 20 The parents and other children are all healthy In the case of our patient there is a history of the mother having had a bad fall when 7½ months pregnant

When first brought to hospital at 4 months of age the mother stated that he had been irritable and subject to fits of screaming from birth. In these attacks he ' drew himself up into a ball, screamed, and went blue round the mouth." The symptoms were attributed to indigestion and flatulence The duration of individual attacks varied, but might last for half an hour, and were sometimes as frequent as three in a day In the longer attacks he sometimes became rigid.

FIG 2

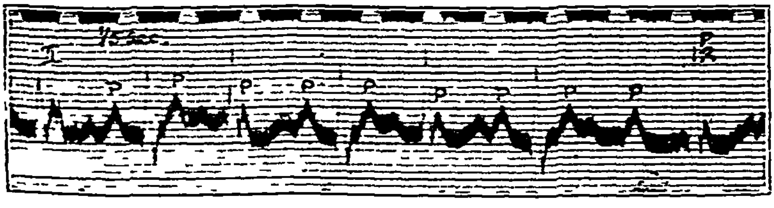


Fig 2 shows 1 . 1, 1 : 2, and 1 . 3 rhythms (lead II.)

Other symptoms described by the mother were breathlessness, vomiting, cyanosis of the fingers, sweating, and " varicose veins " at the root of the neck. On 12 occasions the child has been admitted to hospital because of the severity of the symptoms Countless other attacks have occurred at home for which the mother did not seek help, being well accustomed to their occurrence

In the period of recovery from a severe attack the state of the child is always one of extreme listlessness Examination of the cardiovascular system shows slight bulging of the precordia, extensive pulsation of the precordial interspaces and of the epigastrium, and swelling of the jugular veins. The cardiac dullness reaches great dimensions, extending horizontally from an inch beyond the right sternal border as far to the left as the anterior axillary line and bounded above by the second left costal cartilage. The rapidity and variability of the cardiac rhythm at such times is clinically most perplexing, tachycardia, extrasystoles and phases of " irregular irregularity " displacing each other indiscriminately. The pulse, from being uncountable at the onset of the attack, may show variations from 250 to 100 beats a minute for several days afterwards After a period of two to eight days, the pulse-rate may lie between 80 and 150 At such times extrasystoles are still common, and it is usually after one of these that sudden alterations in the rhythm may be detected. An apical systolic murmur was audible on one occasion only, otherwise there has been no evidence of valvular disorder As a consequence of the great cardiac dilatation the liver enlarges rapidly, and in one of the earlier attacks reached downwards to the level of the umbilicus On this occasion the spleen could not be felt, but in more recent attacks the spleen has seemed to enlarge relatively more than the liver.

The recovery of the child to a state of comfort is not always gradual, but sometimes occurs suddenly with a drop in the pulse-rate and disappearance of the cyanosis Between attacks the child is very active, looks the picture of robust health, and is well grown for his age. Examination also reveals the fact that the heart is considerably larger than normal, and that alterations of rhythm are of common occurrence In a few instances definite acts have coincided with the onset of the cardiac attacks—taking a feeding-bottle, the banging of a door, falling down. Even in the quiescent stages minor stimuli, chiefly emotional such as smiling, may bring about an alteration of the cardiac rhythm. The Wassermann reaction of the blood, tested on two occasions, has been negative. It is of interest to note that the child has had broncho-pneumonia and tonsillitis, both of which ran a normal course.

Electrocardiographs showing Auricular Flutter.

FIG. 1

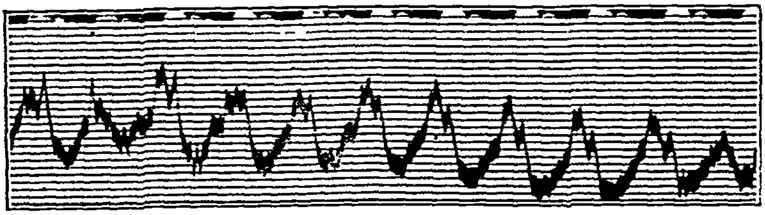


Fig 1 shows a 1 1 rhythm, ventricles responding to each auricular contraction (lead II)

Discussion

This case shows many features of clinical interest, and one of them is the congenital origin of the condition It seems beyond doubt that the symptoms described in the first few weeks of life only differed in degree from those that brought the child to the hospital. The early attacks of abdominal pain with blueness round the mouth, screaming and drawing up of the legs, resemble in some respects those which for many years have been attributed in infancy to flatulence and dyspepsia, results of an unsuitable diet, and they were regarded as such by his mother.

The explanation might be suggested that there existed some unusual cardiac malformation, but we are inclined to dismiss this Although it is well known that grave malformation may occur without the presence of a cardiac murmur, we believe that such anomalous cases, without a murmur and without cyanosis, and yet subject to violent attacks such as this child suffers from almost invariably die in the first year of life This boy, on the other hand, appears to be stronger than he was three years ago, and we can hardly think that a gross cardiac malformation would allow him when at his best to run about and appear almost a normal child.

When he was first admitted to hospital the picture was that of an acute cardiac failure such as we see occasionally resulting from acute influenza, virulent cardiac rheumatism, or profound diphtherial damage is above this figure We fully recognise the arbitrary nature of the choice of this limit, and that some method of "weighting" the significance of the urea concentration according to the volume passed would be more just, but we have not attempted this as such weighting, unless done according to some rigid formula would be apt to degenerate, in a paper such as this, into "cooking" When an hourly volume over 120 c cm was passed the test was often not repeated, as the surgeon was satisfied with other tests; hence the number of cases in which the urea concentration is here recorded is only 92 The results of this test are also satisfactory, especially when it is considered that six of the cases in group 2, A, B, and C, that died had very high blood-urea and that, therefore, the normal urea concentration in their urine could not be regarded as evidence of a sound kidney

---

[1] W. T. Ritchie Auricular Flutter, 1914, p 28

It was found impossible to classify the results of phenolsulphonephthalein excretion in more detail than is already given in the table In the first place the cases with enlarged prostates often give surprisingly low returns of phenolsulphonephthalein, this may be partly, but not we think completely, explained by incomplete hourly samples, loss of phenolsulphonephthalein by destruction in infected alkaline urine in the bladder, and loss of dye by adhesion to the precipitate when the urine is cleared of blood However, with this limitation we get the valuable result that in group 3, A, only four patients did badly in any way—in three of these patients all the tests were satisfactory—and in group 3, B, in one only was the adverse result directly due to renal inefficiency In group 3 the majority of the cases still did well, and we have found patients with apparently sound kidneys giving very low values and others with undoubted renal damage giving figures of 20 or more So that low figures do not necessarily mean correspondingly damaged kidneys

As we have considered the blood-urea as the primary test we have now to consider to what degree the other tests supplement the blood-urea A certain number of patients with normal blood-urea did badly Can these be eliminated by the urea-concentration tests? Considering only those cases with normal blood-urea (i e, under 50 mg per 100 c cm) we find in group 2, A and B, 19, of whom three did badly, one from renal causes, in group 2, C, 27, of whom seven did badly with two renal, in group 2, D, 18, of whom five did badly with four renal, and in group 2, E, 10, of whom six did badly, three being renal

It may be inferred that if the blood-urea is normal there is more chance of a bad result if the urea concentration lies between 1 5 and 2 per cent and a much greater chance if it lies below 1 5 per cent Our experience is that the urea-concentration test is of much greater value as a supplement to the blood-urea in medical cases, probably the conditions of life are more conducive to retention of urea in prostate cases than in medical cases so that urea retention occurs with a slighter degree of renal damage

The only value of the phenolsulphonephthalein test appears to be that excretions over 40 are certain evidence of fitness, among the 42 cases in this group there were 10 with blood-urea over 50, 11 with urea concentration 1 5–1 9, and 3 with urea concentration below 1 5; of these all did well except one, who died of hæmorrhage It does, therefore, give information that the other two tests may not give However, there is so great a liability to give low figures when the kidneys are sound that its value as a routine test is questionable

Table II shows cases in which the tests, bad at first, were repeated after some period of drainage either by catheter or cystotomy Unfortunately, the number is small, as in many cases a clinical improvement was regarded as sufficient evidence that the patient had become fit for operation and the tests were not repeated The Cases 4, 6, 10, and 11 illustrate the fact that, though the blood-urea may fall after drainage, the renal efficiency may remain bad and operation may be dangerous

It is in deciding on such cases, in which the blood-urea has fallen to normal on treatment, that the other tests might be expected to be of the greatest value, but the cases cited give little information on this point Cases 4 and 1 illustrate that a normal urea-concentration test is not sufficient evidence that the kidneys are in a satisfactory condition if the blood-urea is high

Table II —*Effects of Drainage on Tests*

A *Catheter*

Case	Date	Blood urea	P S P	Urea concentration	Result
1	22/3/21	60			Died, hæmorrhage
	1/4/21	80	15	180—1 7	
	8/4/21	75	50	90—2 6	
Cys	13/4/21				
	19/4/21	82	18	62—2 22	
Pros	4/5/21				
2	20/9/21	48	6	57—1 8	Nothing further done
Cys	27/9/21	65	21	78—1 9	
	11/10/21	37	18	42—1 8	
3	On admis	74			No further treatment
Cys	2 w l	28			
	2 w l	34			
	3 w l	24			
	4 w l	32			
4	1/9/21	100	10	30—2 7	Died pyelo nephritis
Pros	19/9/21	37	20	87—1 8	
5	Catheter	58	33	28—2 52	Did well
	8 w l	48	49	83—2 82	

B *Cystotomy*

Case	Date	Blood urea	P S P	Urea concentration	Result
6 Cys	6/5/21				Died, broncho pneumonia
	9/5/21	52			
Pros	24/5/21	34	—	1 8	
7 Cys	7/6/21	100			Did well
Pros	14/6/21				
	21/6/21	46	32	95—2 4	
8 Cys	12/8/21	54 5	4	15—1 7	
Pros	29/8/21	35	—	170—1 8	
9 Cys	21/4/26	73			Did very well
Pros	9/6/26	51			
10 Cys		96	0	150—0 63	Under observation
	2 w l	60	14	84—0 72	
	7 w l	57			
	11 w l	39			
	13 w l	51	10	87—0 96	
11 Cys		54			Died pyelo nephritis
	1 w l	24			
	2 w l	30			
	3 w l	30			
12 Cys		66	9	50—0 96	Died, uræmia
	3 w l	67	20	68—1 90	
13 Cys		55			Did well
Pros	4 w l	42			
14 Cys		72			Did well
Pros	5 w l	45			
15 Cys		51	9	98—1 58	Died, ascending infection
	2 w l	60	13	84—0 72	
16 Cys		49			Did well
Pros	2 w l	43			

Cys = cystotomy Pros = prostatectomy W L = weeks later

We consider that this series of cases illustrates the value of the blood-urea estimation, the urea-concentration test is of some value to supplement the blood-urea, probably most particularly in those cases in which the blood-urea has fallen after treatment, satisfactory conclusions can only be drawn from the phenolsulphonephthalein test when the results are high—such a result can be taken as certain evidence of sound kidneys—but the test is disappointing owing to the frequent occurrence of low results when the kidneys appear to be sound

We are indebted to the surgeons at the London Hospital for permission to make use of their cases

The treatment was commenced in May of last year At the outset careful clinical and X ray examinations were made and in some cases blood sedimentation tests and eosinophil counts were done These were repeated under identical conditions on discharge or if the patient was still under treatment during the month of October.

The average duration of sanatorium treatment before heliotherapy was commenced was 4½ months whilst the duration of treatment by heliotherapy varied from 2½ to 5 months

Technique

In this country the duration and frequency of exposures, and the extent of body surface exposed must depend on the weather and locality The activity of the disease must be considered, but the anatomical extent of disease seems to be of secondary importance, just as it is clinically

At the commencement of treatment the weather was consistently sunny and hot The patients were supplied with bathing drawers and cotton hat. No other equipment was necessary Exposures were made with the patient either on his bed or reclining on a rest-chair on the lawn Erythema doses were avoided as far as possible

In most cases preliminary shade exposures were given Working rapidly up from the feet, whole body shade exposures were reached in a few days These whole body shade exposures were increased up to three separate periods of 15 minutes each with an interval of 10 minutes between each exposure. When this stage was reached the patient was given one period of 5 minutes in full sunlight exposing the whole body as before On the next day two periods of 5 minutes were given and on the third day three periods of 5 minutes with 10 minutes interval between each period

Increases were then made weekly, as follows. First week Three whole body exposures of 5 minutes daily, second week 10 minutes, daily; third week 15 minutes daily; and so on until in favourable cases a maximum exposure of three periods of 30 minutes was reached

Those cases in whom the disease appeared to be least active were allowed to spray each other at the termination of the daily sun treatment with an ordinary garden spray and hose pipe The rationale of this procedure is based on the increased metabolism produced by spraying and bathing at Sir Henry Gauvain s Hayling Island Hospital.[5]

Shade exposures in hot weather are, in my opinion, of considerable value for advanced cases: for not only does the patient get a weak dose of ultra-violet light, but he benefits by the tonic effect of cool moving air impinging on the body. Dr Leonard Hill has shown that metabolism is markedly increased thereby Slight pigmentation may also result, and a toxæmic patient, possibly of the fair freckled type can subsequently be exposed to direct sun with a fair degree of safety

Patients on direct sun exposures were encouraged to continue their exposures on dull cloudy days, and little difficulty was experienced in inducing them to do so Moreover when pigmentation has taken place, the patient is markedly less sensitive to cold

A description of the technique of sun treatment would be incomplete without reference to the importance of adequate supervision, particularly when dealing with cases of active pulmonary disease It is rarely safe to leave the carrying out of the ordered amount of exposure to the patient alone Even the most intelligent patient may be tempted to do too much so great is the sense of well-being experienced.

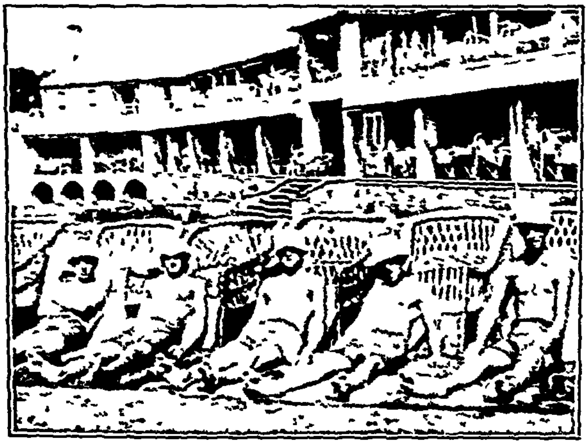
Immediate Effects of Sun Exposures.

Observations were made of the immediate effects of exposure on the temperature, pulse, and blood pressure In most cases there was a definite rise of temperature of about 1° F at the end of exposure; half an hour later this was diminishing to normal. A similar effect on the pulse-rate was noted, though in some cases the rate was lowered and remained low half an hour later.

The systolic blood pressure was lowered immediately after exposure in most cases remaining low half an hour later, but in some cases the pressure had risen again by this time. The effect of cold spraying immediately after exposure was to restore the pressure more quickly, followed in some cases by a slight fall. Most patients did not notice any immediate effect on their symptoms, but two cases complained of a tight feeling in their chest, followed later in the day by loosened sputum.

Effects Noticed During the Course of Heliotherapy

After a few exposures several patients stated that their appetite had improved and that they slept better. There was at first no definite effect on the cough and sputum All appeared to experience a sense of well-being and general fitness especially the less acute cases Perhaps the most noticeable effect was on the mental condition, an improved atmosphere of content and cheeriness being quite obvious As noted above erythema doses were avoided as far as possible, and no case of blistering occurred Any slight rise of evening temperature which could be put down to the effect of exposure was considered an indication for reduction of the exposure But such temperature changes were few Special attention must be drawn to the fact that no cases of hæmoptysis occurred



Pulmonary cases undergoing sun treatment

Clinical Condition at the Termination of Treatment by Heliotherapy

Physical Signs.—In 12 cases these were unchanged, but in the remaining 9 cases there were signs of improvement. Marked unilateral fibrosis and contraction occurred in 4 of these 9 cases whilst in the remaining 5 cases there were less well-marked signs of fibrosis, and disappearance of adventitious signs.

Weight—The weight increased in 15 cases by amounts varying from 2¼ lb to 1 st. 10 lb A slight loss occurred in one case, whilst the remainder showed no change.

Sputum.—The sputum was definitely reduced in quantity in 11 cases, in 2 cases increased, and unchanged in 8 cases

Temperature.—A reduction of temperature was noticed in 6 cases only, but the majority were afebrile (resting) at the commencement of treatment.

Pulse.—The pulse-rate was reduced in 10 cases.

Blood Pressure—The systolic pressure was recorded before and after the course of treatment in 10 cases In no case was there a change of more than 10 mm. In 4 cases the pressure was higher in 2 lower, in 4 unchanged The pressures were taken with a mercury manometer and at the same time of day in each case.

Pigmentation—Ten cases showed good pigmentation 5 cases showed moderate pigmentation whilst the remaining 6 did not pigment at all

Complications—As regards the complications previously mentioned, the following results were obtained. Tuberculous laryngitis, 3 cases (1 case definitely improved); pleura to the cardiac muscle It was not at once apparent that the attacks were recurrent, for all evidence of any infection had to be excluded, and the previous history closely examined

Another interesting point is that, although this child has had numberless attacks of greater or less severity, and although it is probably no exaggeration to say that during the greater part of his life his heart has been beating at about 150 per minute, he is well grown, bright coloured, and as wayward as any healthy child of a corresponding age A case such as this well illustrates the remarkable power of the natural processes of growth and development to assert themselves in the face of grave anomalies in the circulation How remarkable that such a heart could hold its own through an attack of broncho-pneumonia! Few, we think, who saw this child when first admitted could have believed it possible that when he was readmitted with broncho-pneumonia the illness could have ever run an ordinary and satisfactory course Equally interesting is the influence of emotion upon the rate of the heart At one time, if the pulse was counted and the child encouraged to smile, the rate rushed up some 30–40 beats in the minute, and on one occasion when he was tickled he fell back in a minor attack. Throughout his life up to the present the influence of emotion has been prominent

On the other hand, there have been times when the pulse and heart were perfectly regular at 82, and, except for the enlargement—easily enough overlooked in so young a child—the boy might have been passed as healthy. This enlargement of the heart is worth noting, for should it be that at some future date he is found dead, the pathologist would probably be confronted by a large heart with no apparent reason for the fact. Cases of congenital hypertrophy of the heart are known to occur Œdema and cyanosis of the extremities are not common features of such cases The present case bears some resemblance to those described by Howland[2] as idiopathic hypertrophy of the heart in young children He records five fatal cases, from ten months to four years, in which breathlessness, fainting attacks, vomiting, rapid pulse, and occasional cyanosis were among the symptoms observed In none of Howland's cases were any valvular defects found at autopsy The arrhythmias, however, mentioned in the present case were not observed in his

The variations in the rhythm of the heart were remarkable It will be understood that repeated tracings from an infant who invariably cried and struggled lustily with fear were not practicable, and those that were taken might be compared to the examination career of a student, events at certain intervals more or less successful. We are compelled, then, to write of these variations of rhythm in the terms of ordinary careful clinical examination, save for the occasional tracings kindly made for us by Sir Thomas Lewis, Dr Wiltshire, and Dr John Parkinson In a sentence · the study of arrhythmia in this infant seemed to be thrown back into chaos We noted extreme tachycardia, a completely irregular rhythm, numerous extrasystoles, and also a regular normal rate Sometimes, again, the heart would be beating regularly and suddenly trip, when there would follow a complete change in the rhythm

Supraventricular extrasystoles, flutter, and fibrillation according to Ritchie, may be regarded as representing successive stages of abnormal stimulation of the auricles An interesting point in the present case is that all these seemed to occur repeatedly and in no special order during the attacks, if one may suppose that fibrillation was present when the cardiac action was most irregular The pulsus alternans, which with a pulse-rate in the region of 150 is said to be a sign of auricular flutter, was never observed

Treatment

Reviewing the results of treatment, we conclude that complete rest was the great agent Digitalis in small doses was helpful, and on one occasion quinidine was used, the heart rapidly slowed down, but none of the drugs employed mastered the essential difficulty, the prevention of recurrences We would direct attention to Dr Parkinson's tracing here given, which illustrates in an infant an auricular flutter with the ventricles going at the same pace and not, as is usual, an auricle beating at two or three times the rate of the ventricle

This child is still under observation, and better than he was two years ago, but we feel that it would be unwise to hazard a prognosis until he has passed with success through the age when he is exposed to the usual stresses and strains of boyhood

We are indebted to Dr G F. Still for permission to use the notes of the first attack in hospital when the boy was under his care

---

[2] J Howland Contrib Med Biol Research (Osler), 1919, i, 582

A NOTE ON

HELIOTHERAPY IN PULMONARY TUBERCULOSIS

By J E WOOD, M R C S Eng,
MEDICAL SUPERINTENDENT, KING GEORGE'S SANATORIUM FOR SAILORS, LIPHOOK, HANTS

So beneficial is heliotherapy in the treatment of non-pulmonary tuberculosis that it is somewhat surprising little use has been made of this auxiliary method of treatment in purely pulmonary disease An idea has arisen that heliotherapy is unsafe, and even definitely harmful, in these cases

In the institution of which I have charge nearly half the beds are occupied by cases of non-pulmonary disease, who make full use of natural sunlight with the usual benefit A proportion of these cases have pulmonary disease in addition to the non-pulmonary lesion Such combined cases require carefully graduated exposures, but appear to derive benefit from heliotherapy in the same way as do the non-pulmonary cases In recent literature various workers have drawn attention to the use of heliotherapy in pulmonary tuberculosis, notably Hudson and Hill,[1] Rollier,[2] McCutcheon,[3] Bronfin [4]

Encouraged by the favourable reports of these observers and by my own experience in cases of little activity, a series of pulmonary cases of all types were carefully subjected to heliotherapy during the summer of 1925, with the object of determining whether any definite benefit could be obtained, and observing what ill-effect, if any, might arise from such treatment in cases of active disease.

Selection of Cases

In the first place exposures were given to afebrile ambulant cases only, but all had bilateral disease No ill-effect being observed in this type of case, exposures were given cautiously to cases confined to bed and still slightly febrile It was found that these cases could be exposed for short periods without reaction The presence of slight fever and toxæmia does not necessarily contra-indicate exposure under proper control, although such cases are best exposed to indirect sunlight, as indicated below Several cases had lesions in addition to the pulmonary disease of such a nature as to entail, in ordinary circumstances, a particularly bad prognosis No fewer than seven cases were of the fair, freckled type

Heliotherapy was tried in 21 cases, which were classified by the Ministry of Health *classification*, as follows —

Class A —No tubercle bacilli in sputum, 4

Class B —Tubercle bacilli present in sputum Group 1, nil, Group 2, 8, Group 3, 9, *total*, 21

Complications were present in 11 of these cases, and were as follows —

Tuberculous laryngitis, 3, pleural effusion 3, multiple non-pulmonary lesions, 2, tuberculous peritonitis, 1, rectal fistula, 1, tuberculous empyema, with sinus, 1 have been used for all these experiments, and the tumour has grown progressively in every case

It may be considered from these experiments that very large doses of X rays (five times that needed for a lethal action on other malignant growths) appear to have no appreciable effect on Rous's chicken sarcoma. Other experiments show that the virus of this tumour, when treated separately, is very resistant to X rays. If a similar virus were present in malignant growths in the mouse, rat, or man, we should have to explain why a dose of X rays will prevent the growth of these tumours, while five times as much has no effect on the growth of the Rous sarcoma It may be that the animal tumours do not contain a similar virus to the Rous, or that its susceptibility to X rays depends upon the tissue in which it exists, or that there is some substance, at present unrecognised, essential to the growth of these tumours which is easily affected by X rays

References—1. T. Kellock, H. Chambers and S Russ: THE LANCET, 1922 i., 212–217 2 P. Rous Jour Amer Med. Assoc., 1910 et seq 3 W. E. Gye THE LANCET, 1925, ii., 109

THE TECHNIQUE OF BLOOD TRANSFUSION.

BY PAUL C GIBSON, MD, BSc, M.R C P LOND,

MEDICAL FIRST ASSISTANT, LONDON HOSPITAL.

IN the past transfusion of blood has had its most striking successes as an emergency operation in the hands of the surgeon For a long time the dangers and difficulties with which it was associated precluded to a great extent its adoption by the physician for the treatment of chronic disease. The discovery of the blood groups enlightened us as to the nature of incompatibility, and, later, the introduction of the citrate method provided a means of avoiding the most troublesome difficulty But it is clear that the technique needs still further improvement in order that its field of action may be extended from the operating theatre to the ward. The main object of this investigation—which is based upon 40 cases transfused by the citrate method—is the solution of this technical problem I have endeavoured to devise a method of transfusion which may be carried out in the wards with safety and reasonable certainty of success, without the need of skilled assistance, independent of strictly aseptic conditions and not requiring elaborate apparatus, difficult to improvise and difficult to sterilise.

Methods.

Of the methods that have been brought forward from time to time there are three that I would like to recall. In 1919 Fleming and Porteous[1] recorded their experience of blood transfusion as carried out by the use of Robertson's apparatus. This consists of a cylindrical bottle connected by three pieces of tubing to the collecting needle, the delivering needle, and a bellows respectively. This apparatus has the great virtue of simplicity, but in my experience of apparatus of this kind I have found serious difficulty to arise from clotting of the blood, either in the bottle itself or in the tubing Another method is described by Stansfeld,[2] in which the citrate joins the blood as near the vein as possible. But the apparatus is too elaborate, it is adapted for use with small quantities of citrate only, and there is no way of keeping the blood warm Then Keynes[3] introduced a method which was a great advance in technique; I have used it on 35 occasions, modified, as described below, in the last eight of these. But it does not eliminate the clotting difficulty altogether; moreover the open method of collection is used which carries with it the risk of contaminating the blood, for the flask must be held below the level of the donor's arm whence infective material may fall into it.

Precautions

With the object of this investigation in view, it seems that the direction in which improvement is indicated is determined by two considerations: (1) the necessity of avoiding contamination; (2) the prevention of clotting The risk of contamination *may be avoided by adapting Robertson's method* of collection to Keynes's method of delivery. The problem, therefore, resolves itself into an endeavour to perfect the means by which the possibility of clotting may be eliminated. To secure this end particular attention must be paid to: (1) the distance to be travelled before blood and citrate mix; (2) the rate of flow from the vein By using the Stansfeld plan, the distance between the needle and the citrate may be reduced to about 2 inches. The rate of flow of the blood depends upon the size of the needle and the rate of filling of the vein The former is dealt with by using a Keynes needle; the latter requires careful consideration. A full vein means a relaxed artery and the calibre of the arteries varies with the emotions Fear, pain and discomfort all militate against success.

Fear is a potent source of difficulty, both in collecting and in delivering the blood Even the most courageous donor may be very much afraid, however indignantly he denies it, and in consequence everything should be done to put him at his ease. The following rules will help to make things go smoothly: (1) Never keep a donor waiting. (2) If he is cold give him a hot drink before taking his blood (3) Have everything in working order before he arrives. (4) Collect the blood in a quiet room without an audience (5) Restrict the parade of instruments and ceremonial to the barest necessities of the case. Similar precautions are necessary for the patient; if he is nervous a preliminary injection of morphia may be given

Pain should be reduced to a minimum by using novocaine, as described below, for both donor and patient.

Discomfort may arise from the posture of the donor and from the pressure applied to his arm during the collection of the blood. He should lie on a couch and should be made as comfortable as possible with pillows for his head, and for the support of the arm which is to be used. The armlet pressure should not be raised above 80 mm Hg—which is the average diastolic pressure—for anything above this will obstruct the artery. But with every care it will not always be possible to ensure a steady flow of blood from the vein. Some contrivance is needed to prevent stagnation of the blood in the tubing.

Apparatus

The apparatus consists of the following pieces:—

Flasks.—(1) The transfusion flask of 1 litre capacity, graduated in 100 c.cm., preferably conical and made of stout glass, having a side tube connecting with pressure and exhaust, respectively. (2) The citrate flask of 200 c.cm. capacity, graduated in 50 c.cm.

Needles—(1) A large Keynes needle for collecting. (2) A smaller needle for delivering the blood. (3) A small silver cannula for use if required.

Air-Locks.—Of similar pattern to that used by Keynes, one for the citrate and the other for the blood. These may be made with the barrels of 1 oz. glass syringes.

Glass Connexions.—(1) Two bent pieces referred to as "siphon tubes." (2) A short piece of tubing, referred to as "the inlet tube," for directing the blood into the transfusion flask. (3) Three short lengths: (*a*) A "window" for interposing immediately before the delivering needle. (*b*) A suction tube. (*c*) An air filter, packed with cotton-wool, for interposing between the suction tube and the flask. (4) A wide bore T-piece. It is advisable to keep a duplicate of this, which is the only essential part that cannot readily be improvised.

Rubber Tubing—The requirements in this respect are sufficiently indicated in the diagram. Special points to notice are: (*a*) Where clips may have to be applied, it is convenient to use moderately thick rubber. (*b*) The connexion between the collecting needle and the T-piece should not be more than 2 inches long

Clips—(1) A screw clip with large milled head, for controlling the flow of citrate. (2) A spring clip for cutting effusion, 3 cases (2 effusions absorbed); multiple non-pulmonary lesions, 2 cases (in both cases one or two lesions healed); tuberculous peritonitis, 1 case (marked improvement); rectal fistula, 1 case (healed), tuberculous empyema, with sinus, 1 case (healed)

Muscular Development.—Workers in non-pulmonary tuberculosis are familiar with the increase of muscular development following on heliotherapy, though the patient is still recumbent and has only a limited range of movement. Careful measurements of the legs were taken accordingly before and after the course of sun treatment. In every case measured there was an increase in the circumference of both thigh and calf, varying from ¼ inch to 1⅝ inches. Palpation of the limbs so measured suggested that there had been a true muscular development, and not merely a deposition of subcutaneous fat.

Clinical Conclusions.—Taking all the above facts into consideration, and avoiding undue optimism as far as possible, it can be stated that definite clinical improvement was evident in 15 of the series of 21 cases.

X Ray Evidence.—X ray photographs were taken before and after the course of heliotherapy in 14 cases. The technique followed in taking the radiographs was identical in each case, and in the initial and final films, faulty interpretation due to varying technique being therefore eliminated. Of the 14 cases, 5 showed X ray evidence of improvement. The remaining 9 showed no change.

Eosinophil Counts.—The eosinophil count is low in acute cases of tuberculosis and is said to be raised as the disease becomes less acute. Counts were done in 9 cases, all of which were low before sun treatment was commenced. After the course of treatment the count was definitely higher in 5 cases.

Conclusion.

A study of these results shows that no ill-effects followed the use of heliotherapy in this series of cases of pulmonary disease. The number of cases is small, but so many of them did well that there can be little doubt the treatment was of definite benefit, either directly or indirectly through the general effect on metabolism. The effect on the mentality of the patient is, in itself, of great value in institutional life. Heliotherapy, therefore, is at our disposal as a valuable auxiliary method of treatment in pulmonary as well as in non-pulmonary disease.

I wish to express my thanks to Sir Henry Gauvain, at whose suggestion this work was commenced, for his advice and encouragement in the preparation of this paper. Also to Dr. Charles Sundell, who has corrected the manuscript, for his kind interest in the work.

References.—1 B Hudson and L Hill THE LANCET, 1924, i, 1147 2 A Rollier American Review of Tuberculosis, February, 1924 3 R H McCutcheon Ibid, April 1925 4 I D Bronfin Ibid, April, 1925 5 L Hill Sunshine and Fresh Air

THE EFFECT OF X RAYS UPON ROUS CHICKEN TUMOUR.

BY S RUSS, D SC, F INST P,

AND

G M. SCOTT.

(*From the Cancer Research Laboratories, Middlesex Hospital*)

IN several publications during the last six years we have shown that it is possible to give a lethal dose of X rays in vitro to mouse or rat tumours with a fair degree of accuracy. This lethal dose, which we have called L, is the minimum amount of X rays necessary to prevent growth when the tumour is reinoculated into normal susceptible animals; it has been tested a great many times on Jensen's rat sarcoma. A very rapidly growing tumour generally needs a little more radiation than a slowly growing one of the same variety; but even so, the lethal dose does not vary more than ±10 per cent.

Similar experiments have been done with five other animal tumours, Twort's mouse carcinoma, S 37 mouse sarcoma, F 16 rat sarcoma, rat carcinoma R 9 of the Imperial Cancer Research Fund, and a carcinoma of the rat arising in one of the animals in these laboratories. These experiments have shown that none of these tumours need more than the Jensen's rat sarcoma L +30 per cent.

Nearly 90 human cases of malignant disease have been treated by inoculations with X rayed autologous tumours, with the object of immunising them against recurrence of the disease, and as a precaution the dose has been increased to 2 L, but none of these irradiated tumours have grown after this dose.[1]

The following types of growth have been dealt with in this way:—

Carcinomata.—Breast (spheroidal celled, colloid, scirrhus, endothelioma, duct), neck (squamous), tongue (squamous), thyroid (carcinoma); larynx (squamous), liver (columnar), ovary (malignant papilloma)

Sarcomata.—Breast (endothelioma); neck (endothelioma), testis (round-celled), mediastinum (round-celled, lymph adenoma, lymphosarcoma), axillary glands (round-celled), scapula (endothelioma); femur (round-celled, spindle-celled), ilium (spindle-celled, alveolar)

It will be seen from this that the "lethal dose" has been tested on a good many varieties of tumours, and that none has grown when inoculated into susceptible hosts if the dose of radiation has been something between 1 L and 2 L.

Ever since the initial work by Rous on the chicken sarcoma, which bears his name, it has been recognised that this tumour differs from those propagated in rats and mice in the fact that a cell-free filtrate, obtained from the tumour, when inoculated into chickens, reproduces tumours indistinguishable from those produced by the inoculation of the actively growing cells.[2] It has also been shown that the filtrate can be dried and kept for some time, and will even then still produce tumours.

In view of Gye's recent experimental work on this tumour[3] and the bearing his conclusions might have upon the radiotherapy of malignant growths, the following experiments were made:—

A Rous chicken sarcoma was excised and exposed to X rays of the same character and intensity as those used for the rat, mouse, and human tumours, the length of time was 50′=1 L; small pieces of the irradiated tumour were then inoculated into the left breasts of six young fowls. Control pieces were inoculated into the right breasts of two of them. All the tumours grew rapidly and there was no apparent difference between the behaviour of the irradiated and control tumours.

Similar experiments were carried out, increasing the dose of X rays, first to 1 5 L., then 2 L. and 3 L, and finally to 5 L. Even after a dose five times the lethal, no difference could be detected with certainty in the rate of growth, or size of the tumours, the number of metastases, or the rapidity with which the birds died. The data in the table show the comparative rates of growth of the irradiated (dose 5 L) and control tumours.

—	Time after inoculation.		
	9 days	13 days	16 days
	cm.	cm	cm
Experimental— Chicken 1	2 5×1 0	4 0×2 5	5 0×3 0
2	2 0×1·0	4 5×2 0	5 0×2 5
3	3 0×2·0	4 5×3 0	5 5×3 0
4	2 0×1 5	3 0×2 0	4 0×2 5
Control— Chicken 1	1 5×1 0	3 5×2 5	6 0×3·0
2	1 5×1·0	3 5×2 5	4 5×3·0

N B—It is very difficult to make accurate measurements of these tumours as the edge is not very clearly defined. Two measurements have been taken at right angles to each other and estimated to the nearest half centimetre.

In order to see whether the cell-free virus could be affected in any way by X rays, some of this (kindly prepared for us by Dr S L Baker) was exposed at the same time as the tumour, receiving 2 L and 3 L doses; in both cases 0 5 c cm of the X rayed filtrate produced just as large tumours as the same quantity of control fluid. A lethal dose of X rays of a slightly harder type was given to a Rous tumour in vivo, the rest of the fowl being screened with lead; this had apparently no effect on the subsequent behaviour of the tumour. Black leghorn fowls of the same strain help in carrying out the transfusions The complete apparatus, including the thermostat, may be obtained from Messrs Down Bros , Ltd , 21–23, St Thomas's-street, S E 1.

References —1 A Fleming and A. B Porteous THE LANCET, 1919, i , 973 2 A E Stansfeld Ibid , 1918, i , 334 3 G Keynes Ibid , 1920, i , 1216 4 A R Jones and E E Glynn Jour Path and Bact , 1926, xxix , 203

THE CONTROL OF ENTERIC FEVER IN MENTAL HOSPITALS

BY C A. HOGG, M B , M CH EDIN ,
INSPECTOR-GENERAL OF MENTAL HOSPITALS, NEW SOUTH WALES ,
AND
OLIVER LATHAM, M B , M CH SYDNEY,
PATHOLOGIST, DEPARTMENT OF MENTAL HOSPITALS, GOVERNMENT OF NEW SOUTH WALES

IN a recent number of THE LANCET the Director of the Research Institute in Glasgow, referring to the continued outbreaks of enteric fever and the number of carriers isolated in a certain Scotch asylum, makes the statement " Typhoid will come to occupy the position dysentery once held in our mental hospitals if drastic steps are not taken to deal with it." The mental hospitals in New South Wales during the last 25 years have had to face the same problems The incidence of typhoid fever was reduced from 241 cases, among both patients and staff during the pre-inoculation period of 1900–14 inclusive, to 12 in the post-inoculation period of 1915–24 inclusive, or, excluding the uninoculated, to a total of two , during this period the staff and patients combined had increased from about 4530 to nearly 8700 It would thus appear that one drastic method—general antityphoid inoculation—will solve the problem

Historical Data

This 25-year period started with a total of six mental hospitals in New South Wales, but since 1909 three others have come into being It was in connexion with an outbreak of enteric in the family of the sanitary (night soil) attendant and female staff of one of these newly founded hospitals (Stockton) in 1911 that antityphoid inoculation was inaugurated This hospital had been started in 1909 by the admission of some 64 quiet old female dement transfers from metropolitan asylums No ill-health occurred until shortly after the transfer thither of some 60 imbecile girls from the neighbouring mental hospital of Newcastle, where enteric fever and enteritis had been chronic among its imbecile and bedridden idiot population from its earliest history Some carrier seems to have been brought across, for, in a short time, four members of the family of the sanitary attendant, three of the female staff, and two of the girl inmates developed the disease

It is interesting to note that none of the old dements in the other division became infected or gave a positive Widal reaction, and no carriers were discovered among the many recent imbecile admissions who gave positive Widal reactions in their serums Since antityphoid inoculation of the whole hospital —patients, staff, and families—there has been no typhoid, although the *pan* system of sewerage still obtains and the water-supply is still from deep wells in the sand.

Immediately after this the inhabitants of the neighbouring asylum, Newcastle, were inoculated, and only one case has been recorded since—i e , in 1913 The newly opened hospitals of Morrisset and Rabbit Island had their inmates, both patients and staff, inoculated, and in neither has a case been reported

The Remaining Mental Hospitals

Parramatta and Gladesville have had isolated outbreaks and were tardy and diffident about initiating inoculation ; in the latter, during one epidemic, a carrier was discovered by the Board of Health, and the former has also experienced serious outbreaks of dysentery. as many as 70 in one season Rydalmere M H , has had cases of enteric almost every year, and a carrier was carefully but vainly searched for ; nevertheless only one case has occurred among the inoculated since 1914

In Kenmore M H a patient (L) developed typhoid in the autumn of 1909 This relatively modern mental hospital had been typhoid-free till 1906, when a case occurred, and there was one in 1907 and two others in 1909 The patient was subsequently proved by the Board of Health to be a carrier, and after the mischief started he was taken over by the civil authorities The Kenmore outbreak in 1910, traced to him, proved to be the largest in our history ; 57 cases, including 10 staff, occurred in that year A recrudescence in 1913 brought in antityphoid inoculation, since when no case has been recorded

An interesting epidemic took place in 1914 and early 1915 in Callan Park Mental Hospital, which up to then had had cases yearly A careful investigation by a resident medical officer, Dr H H Nowland, directed attention to a certain group of patients, one of whom was found by our laboratory to be passing almost pure cultures of the *B typhosus* in his fæces He also was removed and looked after by the health authorities while we started preventive inoculation. Only one case has been reported since and that occurred in a newly arrived and uninoculated attendant

Other Data Bearing on the Reduction of Typhoid

Examination of the records for the whole State of New South Wales shows a gradual decline of the typhoid rate from 34 per 10,000 in 1903 to about 4 per 10,000 in 1924 No doubt the gradual introduction of the water-carriage supplies in metropolitan areas is largely responsible for this, but in many bush townships and country districts the old conditions still obtain We must also take into account the inoculation of the staffs of many general hospitals and the vigorous following up of carriers, following on a better knowledge of the carrier problem and the general efficiency of the department of public health in New South Wales Some of our medical superintendents have ascribed our reduction rates solely to the gradual introduction of the water carriage of sewerage, but in two instances fresh outbreaks in hospitals, where for this reason inoculation had been delayed, caused a complete volte face, the laboratory receiving peremptory orders to inoculate. The water-supply, although inquired into, has rarely been blamed and has in most cases remained a constant factor, and nearly all the hospitals have their own milk-supply. Some cases were believed to have been traced to handling infected soiled clothes and in crowded wards mental patients who are carriers have many opportunities of passing infected articles about.

It may be suggested that some cases are missed and others suppressed, but it is scarcely likely that this is more so than formerly, except where inoculation completely masks the usual clinical symptoms and signs Dr Penfold, of the Commonwealth Laboratory, holds that " asylum dysentery " is usually of the Flexner type, in contradistinction to work done previously in these hospitals which tended to show that it was of the Shiga type Should this be so, anti-Flexner vaccines and serum will also be made available for our patients The staff are very rarely affected. For many years notification of these diseases has been compulsory.

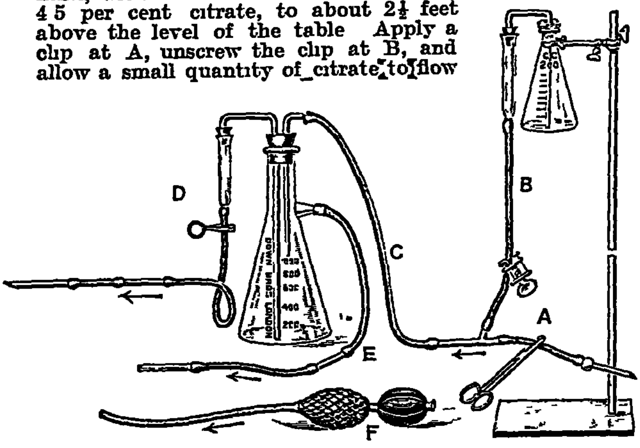
Method of Inoculation

Since the doses of 1000 million typhoid and 750 million paratyphoid A and B per c cm as recommended by the Army authorities are given to medically picked specially fit men, it was considered enough to make up our vaccine so that each cubic centimetre contained 1000 million organisms, 500 million typhoid and 250 million each paratyphoid A and B in 0 5 per cent carbolic acid in normal saline, unheated. As a rule, the first dose was ½ c.cm , followed at intervals of seven days by two doses of 1 c.cm. and repeated every three years Little trouble was experienced if off the delivering tube during collection (3) Three Spencer Wells forceps, with serrations ground down, for use as required These are easy to manipulate with one hand

A Double Bellows, an Upright Stand, a Thermostat —The thermostat is a great convenience, but it is not a necessity, a bowl of hot water can be made to serve the same purpose The pattern I have used was made for me by Mr Daniels, the theatre supervisor at the London Hospital It does not appear in the diagram, but it may be obtained with the rest of the apparatus It is an electrical contrivance, adapted by means of suitable resistance wire to maintain a temperature of 110° F It is fitted with clips to grip the flask and restrain its buoyancy as it empties

Technique

To Start the Citrate Siphon —Fill the air-lock (B) and its rubber continuation with 4 5 per cent sodium citrate Fix the cork attaching it to the glass siphon tube as firmly as possible, and introduce the long arm of the glass tube, through the gauze plug, into the citrate flask, making sure that it reaches the bottom Elevate the flask, with its content of 200 c cm of 4 5 per cent citrate, to about 2½ feet above the level of the table Apply a clip at A, unscrew the clip at B, and allow a small quantity of citrate to flow into the transfusion flask Apply a clip at C and release A Wash through the needle Apply a clip at A and release C Screw up the clip at B The apparatus is then ready for collecting the blood



To Collect the Blood —Apply the armlet of an aneroid sphygmomanometer well above the bend of the elbow Cleanse the skin with ether and paint with iodine Inject a few drops of novocaine (2 per cent.) intradermically at the site chosen for puncture Make a nick through the skin with a sharp knife, right down to the wall of the vein Raise the pressure in the armlet to 80 mm Insert the needle boldly When it is felt to enter the vein release the clip at A Blood should appear in the T-piece When the blood is flowing freely adjust the screw clip to give a continuous succession of drops of citrate The citrate siphon should deliver 100 c cm for every 400 c cm of blood Suction is rarely needed Its effect is to increase the proportion of citrate The flow of blood, when using a big needle, is mainly determined by the rate at which the vein is filling This is not influenced by suction The suction tube E should therefore be left open and lying handy for use if required

If the Flow of Citrate should Stop it may be restarted in one of the following ways (1) By unscrewing the clip at B, which is usually effective (2) By elevating the citrate flask (3) By lowering the pressure in the armlet

If the Flow of Blood should Stop —Immediately apply a clip at C and try to wash a little citrate into the donor's vein. To do this it may be necessary to lower the pressure in the armlet If this is unsuccessful it does not necessarily mean that the needle itself is obstructed In any case do not wait, but at once apply a clip at A and allow the flow of citrate to wash the tube C clear of blood Then release A, and if no blood flows screw off the citrate Raise the armlet pressure to 80 mm Instruct the donor to clench his hand vigorously for a second or two, then to relax completely while counting 5 slowly, and to repeat as required If there is no flow of blood and the adjacent veins are seen to be full, either the needle has slipped out of position or clotting has occurred Push the needle on gently, and if this is ineffective withdraw it a little If, after these manipulations, there is still no flow of blood, it must be assumed, provided that the veins are full, that a clot is obstructing the needle Do not waste time in futile manipulations, but release the pressure in the armlet and withdraw the needle If sufficient blood has not been obtained, a further attempt should be made on the other arm

To Deliver the Blood —Wash through the inlet tube with citrate and disconnect C from the T-piece Transfer the spring clip from D to C Place the flask in the thermostat, this should be filled with water at a temperature of 115° to allow for cooling while the blood is being carried to the ward Replace the suction tube by the bellows Fill the air-lock D with a suitable sterile, isotonic solution. I have used 10 per cent dextrose in some cases and normal saline in the others, and make sure that there are no air bubbles in the tubing The rest of the operation is carried out in the usual way

The Vein of Election —The median basilic or the median cephalic vein should be used if possible. It is courting failure at the outset to attempt entry into any other vein, even though it may appear more prominent or more conveniently situated

The Rate of Transfusion —At first the blood should be given drop by drop, there is no reason for hurry If novocaine has been used, there will be no local discomfort A good average rate is 500 c cm. in half an hour

The Amount Transfused —The importance of this would appear to depend upon the nature of the case In aplastic anæmia the best result was obtained with large transfusions, frequently repeated But in other cases—in which there was no aplasia of the hæmopoietic system—the amount used seemed to bear very little relation to the effect produced It is well to begin with a small amount, about 150 c cm , and gradually to increase it, in subsequent injections

Checking Compatibility

It is now believed that the catastrophes associated with transfusion of blood may be avoided by careful attention to grouping Recent work has shown that the four groups are not so clearly defined as was formerly thought to be the case While investigating this question Jones and Glynn[4] found that, out of 40 cases examined, 7 individuals showed agglutination with blood from members of their own group This bears out the experience of many observers that complete reliance cannot be placed on stock grouping It is, therefore, of great importance to check compatibility in each case immediately before the transfusion is performed For this purpose I have used the following simple macroscopic test in every case in this series The procedure only takes about 15 minutes from beginning to end

Collect a few drops of blood from the patient's finger with a capillary pipette. Mix with 4 5 per cent. sodium citrate, in the proportion of 1 part of citrate to 3 parts of blood, in a small receptacle such as is used for collecting blood in Strong's method of blood counting When the donor arrives, collect a sample of his blood in the same way Then mix thoroughly equal volumes of the two samples on a glass slide, and leave for two minutes If after this interval no clumping is visible the test is considered to be satisfactory If there is any suggestion of clumping, examine a drop of the mixture with the low power of the microscope A few isolated clumps, observed after the lapse of two minutes, may probably be neglected without risk

In every case I have used a donor of the same group as the patient—except in cases of emergency there is no reason for doing otherwise—and I have not met with any of the serious symptoms usually associated with incompatibility With the aid of this improved apparatus it is intended to investigate the effect of blood transfusion on the course of certain diseases, and guided by the experience so gained, to pursue the research still further in the treatment of selected cases At present it cannot be said that the conditions necessary for success with this kind of treatment have been fully investigated Although, in the past, the results have not been such as to encourage any sanguine hope for the future development of therapeutic transfusion, it is at any rate desirable that the remedy should be given a careful and exhaustive trial before it is decided finally to abandon it, as a measure which, except in the limited field of surgical emergencies, has been tried and found wanting

This investigation was undertaken at the London Hospital, and the cases were under the care of Dr R C B Wall and Dr J Parkinson, to whom I am indebted for much kind advice and for permission to record the results obtained I would also express my thanks to Messrs Burrell, Fysh, and Nissé for their

were so terrified that no reassurance had any effect, and abortion was induced It could seldom, if ever, be right to tell a patient that it would be impossible for her to survive another pregnancy.

Obstetric Indications

The obstetric indications were comparatively few and unimportant

Toxæmic Vomiting —By this he meant persistent vomiting with definite signs of toxæmia, such as heavy albuminuria, raised blood pressure, pyrexia, and wasting It was rare for this to be incurable by medical means

Vesicular Mole and Missed Abortion —These were invariable indications for induction of abortion, and the castor oil and quinine method was eminently suitable

Hæmorrhage —Very free hæmorrhage in the early months of pregnancy did not in all cases result in abortion Persistence of bleeding was more serious for the ovum than an initial smart hæmorrhage

Methods of Terminating Pregnancy

Dr J D **BARRIS** surveyed the various methods of inducing abortion These were (1) the slow methods of dilatation, plugging, and the use of bougies and drugs, and (2) rapid dilatation, vaginal hysterotomy, and Cæsarean section The uterus should be allowed to expel its contents spontaneously; to drag out the ovum by force brought a risk of hæmorrhage and sepsis His choice was determined by the urgency of the need for termination and by the stage of the pregnancy Before the end of the third month the fœtal head was small and easily collapsible, and rapid methods might be used, especially as urgency was more likely early in the pregnancy Immediate evacuation was the best of these, using the laminaria tent Strict surgical precautions should be taken, and the instruments should have no sharp points The curette should be blunt Ether or gas-oxygen were better than chloroform After the end of the third month evacuation was more difficult and portions of the fœtus were liable to be left behind Dilatation and evacuation were therefore very dangerous, although they might be used in urgent cases Vaginal hysterotomy made it possible to empty the uterus completely and was preferable to Cæsarean section He had not found castor oil and quinine so reliable as the small bag and pituitary extract For vesicular mole he had found Cæsarean section very satisfactory

Ethical Considerations.

Prof **LOUISE MCILROY** (London) pointed out that generalisation on the question of when premature termination was desirable was useless, and pleaded for the treatment of the patient rather than of the disease Nevertheless she regarded induction as a dire necessity and as a confession of failure, and before resorting to it every factor in the patient's condition should be considered Fear of pregnancy was largely due to a deep-seated idea that pregnancy was a calamity, and education would in time correct this We now had many good substitutes for artificial abortion No one, for instance, induced nowadays for retroverted uterus or diabetes Sympathy for a tragic case should not betray the practitioner into criminal action Cases of hyperemesis who were worried by bad home conditions were often relieved by isolation, and even when vomiting was due to toxæmia she did not recommend induction Phthisical patients should promise not to have another pregnancy after abortion An artificial pneumothorax should be tried before abortion was induced The slow X ray method of sterilisation was satisfactory for them She had given up sterilisation after Cæsarean section for heart disease Heart disease rarely caused death at the puerperium, and the proper treatment was not induction, but rest for the last ten weeks This was often a godsend to a working woman Induction was indicated if nephritis was very far gone, and in pyelitis in late pregnancy when the patient had only one kidney left Toxæmias of pregnancy or hydramnios were hardly ever indications, and two of her patients with encephalitis lethargica had been no worse for their confinement Acute fear, and the mental state of a woman who was pregnant through rape, were not indications for artificial termination Methods should be slow Tents reduced the risk of sepsis and were preferable, and she had found the "penny balloon" method a good one Rapid methods were only admissible if the ovum were dead

The Mental Indications

Dr R H **COLE** held that mental symptoms hardly ever justified induction of abortion, but this might be performed if an obsessional fear was so overpowering as to endanger life He relied on a change of surroundings

Tuberculosis

Dr R. A. **YOUNG** said that the question of abortion for tuberculosis was very controversial and hedged about with aphorisms, which, however, were based rather on individual feeling than on statistics, and took no account of whether the disease were active or arrested If it had been long arrested the patient might proceed, but even if it were active, induction was as likely as labour to cause death The physician should consider all factors and perform all tests, and then consult with the psychiatrist and the obstetrician. Rest in bed would often dispose of symptoms that seemed to indicate interference Treatment must not be stopped because the patient was pregnant, but rather it should be pursued more energetically Any operation was to be deprecated Pinard's aphorism, "Treat the disease and manage the pregnancy," contained much real wisdom, as also did the statement "Prevention is better than abortion"

Cardiac Indications

Dr F W **PRICE** spoke on the cardiac indications with reference only to the question of risk to the mother's life Pregnancy, labour, and the puerperium laid a strain even on the healthy heart, and a certain amount of relative tricuspid incompetence might occur from time to time "Crepitations" over the bases, which disappeared after a few breaths, did not indicate œdema of the lungs Varicosity of the veins, shortness of breath after the twenty-eighth week, or œdema below the knees were not indications of cardiac failure in pregnancy, nor were displacement of the apex beat and left border, increased transverse diameter, or a systolic murmur in the tricuspid area On the whole heart cases bore child-bearing surprisingly well. It was essential to remember that the cause of cardiac failure lay in the myocardium, and it was of extreme importance to find how the heart responded to effort Prognostic indications of value were the modification of the pulse and blood pressure, the size of the heart, the pulse pressure in aortic incompetence, the length of the presystolic murmur, and the presence and length of a diastolic murmur in mitral stenosis

Irregular Action of the Heart —Pregnancy should be terminated in complete auriculo-ventricular or inter-ventricular block if the patient had syncopal attacks When a pulsus alternans was *not associated* with a severe grade of tachycardia it called for complete and prolonged rest, and if this be impossible or unsuccessful abortion should be induced. In auricular fibrillation it depended on the ventricular rate, the degree of cardiac failure, and the response to digitalis therapy In auricular flutter it depended on the response to treatment When there was paroxysmal tachycardia the factors for consideration were (1) coexisting chronic myocardial or valvular disease and its nature and degree, (2) the duration of previous attacks and the ventricular rate and degree of failure in them; (3) reaction to treatment

Chronic Valvular Disease —Mitral stenosis was the most serious form, and abortion was justified in severe cases with very small pulse, and a murmur beginning immediately after the second sound and continuing all through ventricular diastole and auricular systole, or if there were also auricular fibrillation, mitral incompetence, or chronic adhesive pericarditis Pregnancy might continue in cases of mitral incompetence the patients were lined up out of doors, using a fine Schimmel needle which was sterilised after each dose by wiping with wool and methylated spirit; Dover's powder and phenacetin were given if the reaction proved severe That the three years' interval might be the best compromise, apart from trench life in military services, would seem suggested by the fact that a case occurred early in 1925 in a female patient three years and seven months after her last dose

Summary

While there has been a more or less steady decline in the incidence of typhoid fever in the State of New South Wales since 1903, individual cases and epidemics have recurred in our mental hospitals until the advent of antityphoid inoculation In the last ten years only 12 cases were observed and in the inoculated only two, while the hospital population has increased over 90 per cent The little extra work and convenience entailed seem a small price to pay for the practical banishment of such a disease from mental patients

Evidence seems to show that both patient and nurse are especially liable to infection on their first entry to a mental hospital; steps should therefore be taken to insure their adequate protection as soon as possible after arrival This was especially true of the aments at Newcastle Asylum at all ages, the records show that deaths from intestinal complaints used to be common and are now rare

It is with mixed feelings we have to record that in 1914–15 our lunatics were better protected against the typhoid group than many of our soldiers in Egypt and the Peninsula

References

Pathological Investigations in Scottish Mental Hospitals THE LANCET, Sept 12th, 1925, p 560

Ledingham, J C G, and Arkwright, J A The Carrier Problem in Infectious Diseases, 1910 London Edward Arnold.

Stitt, E. R Practical Bacteriology and Bloodwork and Parasitology Seventh edition Philadephia Blakiston

Report of the Director General of Public Health, New South Wales, 1923 Sydney Alfred James Kent, Government Printer 1924 7s 3d

---

BRITISH MEDICAL ASSOCIATION

ANNUAL MEETING AT NOTTINGHAM.

(Continued from p 335)

SECTION OF OBSTETRICS AND GYNÆCOLOGY

WEDNESDAY, JULY 21ST

This Section met, with Mr COMYNS BERKELEY in the chair, to discuss the

INDICATIONS AND METHODS FOR TERMINATION OF PREGNANCY BEFORE THE VIABILITY OF THE CHILD

The discussion was opened by Dr T W EDEN, who said that it was not possible to lay down strict rules, and it was therefore of interest to consider from time to time what extent of agreement there was on the indications for inducing abortion He did not feel the attitude should be too rigid; it should be clear to ailing women, to whom pregnancy might be a long-drawn and painful penance, that the profession had sympathetically weighed their position He thought it might at times be right to terminate pregnancy even if the mother were not suffering from any condition which could, strictly speaking, be called disease, but such cases required the most careful consideration

General Indications

The lists of indications were in the text-books, he would take up a few of the more important ones

Phthisis.—Obstetricians of all countries differed as to the necessity for terminating pregnancy in pulmonary tuberculosis The views of physicians must be taken into account Osler taught that a woman with arrested or cured phthisis with bad family history and poor physique ran grave risk in becoming pregnant, if there were active disease pregnancy usually hastened the process Osler quoted Dubois "A woman threatened by phthisis may bear the first accouchement well, the second with difficulty, the third never" The speaker was prepared to act on Osler's views Phthisical mothers usually bore well-developed and healthy children, although tubercle bacilli could pass through the placental filter, but the expectation of life was not normal Couvelaire stated that 38 per cent of children born to mothers with active phthisis did not survive their first month, being born with a "diminished coefficient of vitality" Dr Ward, tuberculosis officer for South Devon, found that among 372 such infants 34 per cent became definitely tuberculous and a further 21 per cent were suspect, of the 34 per cent one-fourth died He also concluded that children of a tuberculous mother were seven times more likely to become tuberculous than were those of healthy mothers, and that of tuberculous women who became pregnant over 50 per cent were made definitely worse, while 19 per cent were improved. It was not to the advantage of the community that children should be born with a risk of tuberculosis seven times greater than the normal

Chronic Nephritis—Pregnancy was always attended by certain very definite risks in cases of chronic nephritis Complete breakdown of the renal function might occur, leading up to uræmic convulsions, an intercurrent attack of acute nephritis might supervene, and, if these were survived, the working capacity of the kidneys was permanently reduced Accidental hæmorrhage, especially the toxæmic form with interstitial hæmorrhage and necrosis of uterine muscle, occurred in a relatively high proportion of cases The fœtal risks were also very heavy, about 40 per cent died from prematurity or from the results of transplacental intoxication Nevertheless it must be remembered that these conditions were risks and not certainties, the time might come when we could distinguish more clearly the factors which made prognosis grave The hydræmic type of nephritis was much more serious than the azotæmic type In the absence of dropsy in the early months a first pregnancy might be allowed to continue if the blood pressure and the adequacy of renal elimination were most carefully watched In subsequent pregnancies early abortion should be induced if a serious renal breakdown had occurred before In any case the occurrence in early pregnancy of albuminuria and œdema of the renal type justified induction

B Coli Infection of the Urinary Tract—This did not lead to serious developments in its subacute form, although it might cause an acute outbreak of fever during the puerperium.

Diabetes Mellitus—The introduction of insulin had reduced very greatly, without entirely eliminating, the risks of diabetes in pregnancy Glycosuria and lactosuria were not uncommon, but unless accompanied by an increase in the blood sugar and such characteristic symptoms as polyuria, thirst, and wasting, were not diabetes and were always amenable to dietetic treatment

Heart Disease—A young woman with a well compensated valvular lesion would usually pass through one and possibly two pregnancies without serious inconvenience Repeated pregnancies damaged the heart and reduced the expectation of life Abortion might be justified by signs of failure in the early months or by a history of serious breakdown in a previous pregnancy

Diseases of the Nervous System—He had ended pregnancy on the advice of a psychiatrist in cases of former puerperal insanity or border-line cases with a bad family history Such cases were pre-eminently suitable for team work Chorea was not uncommon in pregnancy and was usually amenable to rest, careful feeding, segregation, and arsenic Occasionally abortion might be justified in severe obdurate cases with pyrexia He described a case where the patient had been told that it would be most dangerous to have another child, with the result that she and her relatives should not be done lightly. but he urged its wide use, because it was simple. safe. and unaccompanied by untoward complications and sequelæ, because it gave the only actual test of the power of the uterus and was an attempt to procure the highest aim of the true obstetrician—a natural parturition

Mrs. Rhoda Adamson (Leeds) said that her private patients usually had symmetrical pelves, but hospital cases were more liable to irregular rickety contractions The small flat pelvis was suitable only for Cæsarean section. while the simple flat pelvis permitted labour surprisingly easily if left to Nature. The best case for induction was one with a moderate degree of contraction It should be remembered that a child's head tended to resemble that of its father. and it was worth while to inspect the patient's husband The external measurements were far less important than the relative size of head and pelvis The further the pregnancy was allowed to go the better for the child The doubtful case would very often deliver itself if allowed to try. and so she never performed Cæsarean section before labour in cases of contraction. Immature girls with small pelves should be treated by induction because a normal delivery resulted in general development and enlargement of the pelvis while Cæsarean section. in addition to the wound damage, left the pelvis small.

Discussion.

Dr. English said that contracted pelvis was relatively rare in Singapore owing to the absence of rickets. Some text-books stated that induction from the thirty-eighth to the fortieth week was no great advantage: this was not the case. Cæsarean section was best performed during labour as the lower segment incision was then much easier to make. It was very helpful if practitioners inducing labour in a primipara would give her a note for the guidance of the doctors who attended her subsequent labours.

Prof Louise McIlroy agreed that Cæsarean section should only be done when labour had started, and that the number of a practitioner's operations steadily diminished as his judgment grew. Cæsarean section was a mutilation, done from dire necessity only. She had found that the outlet was the dark horse of obstetrics: the pelvic brim could be estimated antenatally, but trouble with the outlet was usually revealed too late to do anything Some method of measuring it would be a great advance in obstetrics She hardly ever induced before the thirty-eighth week because the immature child stood labour badly and prolapse of the cord was more likely to occur It was difficult. but very necessary, to know the exact date of the pregnancy. Two very difficult problems were the post-mature fœtus and the breech with extended legs. How was the relative size to be estimated in the latter case? Hurrying up labour was very dangerous: patients should not be worn out by bearing down and pulling A long. easy labour was much better for mother and child. She urged sedatives in labour sitz baths. and morphia: she had never seen any ill results from morphia. Measurements were of little importance the whole thing depended on the size and degree of flexion of the head. She had found that pregnant women objected to vaginal examinations, and she regarded this as a natural defence against the dangers of interference with vagina and cervix late in pregnancy.

Methods

The stomach-tube was both useful and safe. X rays had shown it curled up right to the top of the uterus, covering much more space than a bougie ever could. A penny balloon filled with water from a Higginson's syringe was remarkably successful when the head was high. and was very safe. The de Ribes bag was most unsatisfactory Induction by drugs (castor oil and quinine) was safe to recommend to midwives in slight cases of contraction

Mr Evers said that the difficulty was with the borderline primipara where there was nothing to guide the practitioner Help could be obtained from measurements particularly the external conjugate The asymmetrical pelvis was the least suitable for induction. He emphasised the value of examination under an anæsthetic. An analysis of 150 cases of Newcastle primiparæ with head above the brim showed that 12 per cent. had come to Cæsarean section—far too high a figure.

Mr. Rivett said that in many cases it was difficult to say whether there was an actual contraction. and the size of the parents was very important. The very fat young primigravida had fat also in the pelvic tissues and might require Cæsarean section even if the pelvic measurements were normal. The weight of the baby tended to increase with the third. fourth. and fifth pregnancies. It was a great mistake to label a woman "normal multipara." The weight of the baby at birth should always be recorded definitely. The figures of induction cases at Queen Charlotte's Hospital gave corresponding results to those quoted by Mr. Banister: the mortality at 35 weeks and under was over 50 per cent.

Dr. S. W. M. Jones (Wolverhampton) pleaded that general practitioners should give more consideration to induction. There was a prevalent idea that it was a "messy business" He had been disappointed in the castor oil and quinine method. which often failed at the thirty-seventh or thirty-eighth week.

Dr. A B Danby (Birmingham) asked what methods Mr Banister had employed. At the Birmingham Maternity Hospital a No. 4 œsophageal tube had proved satisfactory. The time factor was very important and was shorter with the tube than with bougies Quinine and castor oil had proved unsuccessful in 31·6 per cent of cases on the district. Deflexed heads would often go through quite well when rotated by a pad and binder. A man with a large head should never marry a woman with a small pelvis.

Dr. T. A. Richmond (Stoke) said that there was not a single maternity bed in Staffordshire His rough and ready method. under these circumstances. was 'when in doubt induce.' The types of case that arose were (1) the multipara with a bad obstetric history, (2) the primipara with small pelvis and (3) the post-mature case usually a big athletic woman who was left to go to time and then went over. He had had very good results from giving pituitrin at the time when labour was expected

Mr. Comyns Berkeley said that his experience coincided with Mr. Banister's. A miscarriage in early pregnancy was always attributed to vaginal examination if one had been done. so that it was not only useless but impolitic to attempt any extensive examination before the thirty-sixth week. Analysis of cases of induction at the City of London Hospital had shown the danger of inducing too early.

Prof. McIlroy. in reply to a question. said that when the placenta was attached to the anterior wall it was easy to locate it antenatally by the position of the souffle.

Mrs Adamson. in reply. said that a tight binder might be very useful The students at Leeds were being taught to examine rectally. Castor oil and quinine was not effective before the thirty-eighth week. but was worth trying in the later weeks. In assessing the dose it was important to find out the habit of the patient as regards purgatives. In the factory class of woman the weight of the baby increased until the mother was about 30 She did not regard Cæsarean section. by the paramedian incision. as a mutilating operation. but patients should be kept under supervision in subsequent pregnancies.

Mr Banister. in reply. said he took strong exception to the phrase Once a Cæsarean always a Cæsarean.' He believed that contraction at the outlet was very definite. but rare: it would never be recognised by measurements but could be appreciated manually on examination under anæsthesia. He regarded a breech with extended legs in a primigravida as a definite and legitimate indication for Cæsarean section. He did not think it possible to precipitate a miscarriage by taking pelvic measurements. and it was valuable to know them early. Every vaginal examination performed in pregnancy must be justified by special circumstances and should not be done until induction and aortic stenosis if not due to primary chronic endocarditis Abortion was justified in severe aortic incompetence with great alteration in pulse, blood pressure, and size of heart, especially if the patient was apt to faint on exertion In congenital heart disease it depended on the size of the heart and subjective symptoms

Chronic Myocardial Disease by Itself—The indications for consideration were the size of the heart, syncopal attacks, and the presence of irregularities

Estimation of Cardiac Failure—Four points should always be considered. (1) the degree of cardiac failure, (2) at what stage of pregnancy the symptoms supervened, (3) the immediate cause of the present attack, and (4) response to treatment If the failure were slight the patient could probably go to term without risk If moderate failure occurred during the first three months, without some temporary cause, she would probably be unable to go through, but an attempt might be made Rest was imperative If severe failure occurred in the first half of pregnancy the patient was in danger, but a rest of some months in bed often had surprisingly good results Pregnancy should be terminated if extreme cardiac failure supervened at any time, but apart from this a reasonable period of rest and therapeutic measures should always be tried In any case the heart lesion should be treated first in order to secure better conditions for the operation of abortion

Discussion

Dr R C BUIST (Dundee) pleaded that general practitioners should not foreclose the discussion of a case by expressing an absolute opinion

Mr H EVERS (Newcastle) said he thought it was most important for the profession to take up a conservative attitude towards what he preferred to call embryocide The conditions where it had proved its value beyond doubt were extremely few He did not see why pregnancy and labour should be regarded as an ordeal, and regarded the matter as legal and moral, not ethical nor professional, the patient's reasons for desiring abortion should never be accepted He surveyed the indications for abortion and concluded that the only absolute indications were vesicular mole and nephritis with severe clinical manifestations The infants of phthisical mothers should be segregated from birth Cases of heart disease, vomiting, and nephritis could nearly always be carried on till the child was viable His reasons against the induction of abortion were the very great importance now attached to intra-uterine life, the improvements of modern treatment, and the fact that the so-called dangers of pregnancy in certain conditions were mostly speculative and groundless

Dr B DUNLOP (London) said that for him it was sufficient indication if the mother steadily wished it in spite of all persuasion He was convinced on sociological grounds that it was not in the public interest that medical practitioners should not be free to induce abortion on economic and eugenic grounds

Dr J S ENGLISH (Singapore) described as very satisfactory the method of induction by inserting a No 23 stomach-tube, it was easier to sterilise than gum-elastic, required no anæsthetic usually, and was very sure

Mr L C RIVETT (London) said that in his limited experience of phthisical cases it was the puerperium that was detrimental, and he agreed with Dr Young that only in very severe cases of active tuberculosis was interference warranted The best method to sterilise such patients was X rays, as any anæsthetic was so bad for them He considered that gross deformity of the pelvis, necessitating Cæsarean section at term, was also an indication for abortion if the mother so desired At Queen Charlotte's Hospital he had found heart disease far the most serious complication; cases did not respond to treatment in any way and many died—the majority undelivered He therefore regarded it as a strong indication for early abortion, and thought a miniature Cæsarean section with occlusion of the tubes was the best method Heart cases stood the operation well in early pregnancy

Dr N LOCK (Exeter) said he had found Cæsarean section less strain than normal labour, heart cases always took a well-administered anæsthetic without difficulty.

Mr RIVETT replied that he had not found Cæsarean section make the slightest difference either way in his heart cases He agreed that they stood anæsthetics well and deprecated spinal anæsthesia for them

Mr COMYNS BERKELEY said he regarded it as perfectly disgraceful ever to tell a patient that she must not or could not have another child He agreed with Dr Barris in using a quick method of emptying a small uterus where the hæmorrhage could be controlled The stomach-tube method was good, but liable to lead to very severe bleeding

Dr BARRIS, in reply, said the weak point in slow dilatation in the first three months was that it often produced no effect and had to be constantly repeated, with the probability of having to give an anæsthetic in the end

Dr EDEN, in reply, said there was no such crime as fœticide, and he was more and more impressed with the necessity for taking the broadest possible view. If the public could feel that they would get sympathetic consideration from the medical profession they would not go so much to the criminal abortionist. We could not divest ourselves of responsibility for the generation we were bringing into the world

THURSDAY, JULY 22ND

THE PLACE OF INDUCTION OF PREMATURE LABOUR IN THE TREATMENT OF CONTRACTED PELVIS

Mr J BRIGHT BANISTER, opening the discussion, said that he suspected that Cæsarean section was being employed oftener than was justified in cases of pelvic deformity, and that induction had fallen into unjustifiable disrepute His conclusions were based on 745 cases of induction The maternal mortality had been 1 3 per 1000, so that there was no great risk to the mother The fœtal mortality had been 12 6 per cent, and analysis of the figures revealed the enormous advantage of obtaining natural delivery, the mortality in such cases being less than 8 5 per cent, while among the forceps cases it was 23 4 per cent Of the fatal cases posterior positions were in high percentage The fœtal mortality-rate dropped as the date of induction advanced, except at the end of the series, where the induction had been too long delayed Induction had failed in 24 cases The morbidity-rate was no higher than in normal cases, being just under 4 per cent The most important complication was prolapse of the cord, which was accompanied by a very high fœtal mortality, but this could be attributed as much to the contraction as to the induction

The Date of Induction

Antenatal examination revealed contraction early in pregnancy If the true conjugate were 3¼ in or less induction was contra-indicated The optimum time for induction was estimated by careful consideration of the relative sizes of the presenting part and pelvis, the shape of the pelvis, and the position of the head Such patients should be seen weekly A generally contracted pelvis presaged an earlier induction than a flat one The position of the occiput was an important factor in oblique contraction, if on the narrow side the difficulties would be greatly increased When bimanual examination failed to make the head descend appreciably the patient should be examined under an anæsthetic and the disproportion was then usually found to be less than was thought, and in this case induction should be advised in 14 days' time If no engagement could be obtained induction should be done at once The moulding powers of Nature made it safe to wait until the head would just not enter the brim He did not believe that patients would resent or practitioners grudge these careful examinations Induction also gave valuable information as to the capacity of a uterus to deliver itself and provided grounds for deciding whether to leave or induce at the next parturition Every induction must be judged on its own merits interfered with normal contraction and produced uterine stagnation It was much more serious than menostaxis and could soon produce severe secondary anæmia Curettage was a temporary palliative that was sufficient in puberty, but at the menopause the most useful remedy was radium

Metrostaxis a term the speaker preferred to "metrorrhagia," included all hæmorrhages independent of the menstrual cycle. The blood was bright red, often with large clots—quite different from the menstrual lochia The endometrium generally showed hypertrophy, which might be diffuse or localised in a single polypus, and this pointed to a deeper underlying cause He thought the answer would appear when more was known about the relation of the autonomic nervous system to the uterus and the ovaries Labour or abortion (whether fertile or afertile) might be set up by mental shock; he cited as a typical case that of a woman who had sustained a motor accident. It was uncertain whether the uterine hæmorrhage was due to the mental shock alone or to the attendant hyperthyroidism. Metrostaxis was comparable to gastrostaxis, which was also peculiar to women and bore no relation to the menstrual rhythm Müller's sympathetic vaso-motor centres in the tractus intermedio-lateralis of the medulla, which Castex had shown to be also vasotropic, were probably intimately concerned with these functional hæmorrhages, and these observations opened up a wide field of research The peculiarly embryonic nature of the endometrium made it exceptionally liable to outside changes, and gynæcologists had been too eager to expect abnormal appearances such as hyperplasia as a cause rather than as a result, of continued bleeding Estimation of the blood tolerance of sugar and of the basal metabolic rate provided important data in the investigation of uterine hæmorrhage at periods of unstable equilibrium, especially puberty and the menopause

Discussion

Prof. **Fletcher Shaw** (Manchester) said that in the past it had been the custom to look for the cause of uterine hæmorrhage in the uterus itself; now a much broader view was taken, and physicians had to remember the types of disordered physical function that might occur in or outside the uterus Disordered hæmorrhage fell into four groups: (1) general medical, (2) disordered physiological function, (3) pathological conditions of the endometrium, (4) pathological conditions of the uterine body All our knowledge of the third group had recently had to go on the scrap-heap, as many of the changes regarded previously as pathological were now known to be due to the physiological cycle, while others still classed as pathological were probably due to some cause outside the uterus. He cordially welcomed the new terms suggested by Prof Beckwith Whitehouse, provided other teachers would accept them, and pleaded for a simplified nomenclature for group (4), which could be divided into three types:

(a) *Chronic Metritis* —In a normal healthy uterus there was a balance between the muscular activity and the blood flow through the vessels. In chronic inflammation the muscular tissue was destroyed and replaced by fibrous tissue, so that an inert mass was interposed between the muscle cells and the blood-vessels, resulting in diminished contractile power

(b) *Subinvolution* was much commoner, the history of the hæmorrhage dating from a confinement. In this case there was a large mass of elastic tissue outside the blood-vessels There was no abnormal fibrous tissue—hence the term "fibrosis" was unjustifiable—and no decrease in the muscular tissue This inert elastic tissue underwent, in time, vitreous degeneration, so that it might be absorbed, but if this did not occur it underwent vitreous hypertrophy and regained its staining and elastic properties Sometimes hæmorrhage was not complained of in these cases until the menopause, when the inert body got more and more play through the atrophy of muscular fibres Chronic metritis and subinvolution often occurred in the same uterus, because the same inflammatory process that caused the latter would also cause the former.

(c) *Hypertrophy*—A similar syndrome might occur in a nulliparous woman, and the hæmorrhage was then found to be due to a very thick endometrium, or else to some common cause which had produced both. There was no pathological change save hypertrophy of every tissue, which was probably due to an excessive uterine contraction every month.

Mr **W W. King** (Sheffield) said that endometritis was a ridiculous term that had been used as a scrap-heap for diagnosis; it had put back for years the proper conception of menstrual anomalies He queried the necessity of retaining the term "chronic metritis," for which "chronic subinvolution" could usually be substituted In treatment lutein seemed the best thing for functional hæmorrhages, but glandular extracts were useless by the mouth, except thyroid. Individual cases differed markedly in their reaction to endocrines Injection of hæmoplastic serum had stopped the bleeding of young girls with villous conditions of the endometrium, and in some cases seemed to do permanent good Cotarnine was very useful in hæmorrhage without any gross physical signs Out of 144 cases treated with 1300 to 2000 m c. hours of radium 13 per cent. had further bleeding and 26 per cent. suffered from menopausal symptoms. As radium was supposed to act mainly on the endometrium and not on the ovaries, this raised the question of an internal secretion of the former.

Dr **Rhoda Adamson** (Leeds) said that she had found that girls sent away to the seaside to boarding-school were apt to get bad floodings, which were not improved by the school doctor's treatment, but which cleared up when they came home She had discovered that it was a recognised thing that professional ballet dancers and acrobats had amenorrhœa or almost negligible menstruation while working, but when resting they returned to their ordinary rhythm.

Dr **J. S English** said that he had met cases of amenorrhœa in Singapore who had normal menstruation on returning to England. He had found that large doses of X rays gave very good results

Mr. **L. C. Rivett** (London) said he had found that simple curettage gave temporary relief only. He had not found it possible to separate Prof. Fletcher Shaw's first and second groups clinically, except that a bleeding uterus might be large and flabby or small and hard.

Dr. **M Eames** said she had had most varying results from thyroid administration, and asked how to treat excessive losses at puberty in girls with pulsating thyroids.

Dr **S W. Masley Jones** (Wolverhampton) said that in the absence of modern facilities for treatment he had found good results follow irradiation over the ovarian region, especially for young girls; one case only had failed to respond, and she had subsequently been cured by irradiation of the thyroid For older cases he had successfully used the intra-uterine application of glycerine, which seemed to start involution off again.

Dr **T. H. Richmond** (Stoke) referred to the piling up of cells within the glands, without rupture of the basement membrane, so often found in curettings, and to the good effects of radium on these cases, as if there were some local malignancy.

Dr **Combie Sharp** (Cape Town) said he thought obstetrics and gynæcology were very liable to fashions, and the latest of these was treatment by medicines—e g, pituitary extract, which he considered to be a most dangerous drug—before the child was born.

Mr. **Comyns Berkeley** also welcomed the new terminology, and urged that all teachers should adopt it He had found 250 mg of radium for 20 hours a magnificent treatment for these conditions, but the possibility of sterilisation must not be forgotten. Utriculoplasty had given excellent results, and some of his cases had successfully borne children after it Curettage was the commonest and most hopeless operation for hæmorrhage.

could be immediately carried out He regarded rectal examination as a very grave retrograde step The method he considered best was the gum-elastic bougie No XII , three, if possible, with surgical cleanliness, and no additions, induced labour in from 48–60 hours Castor oil and quinine had a fair measure of success at full time, but was not successful for premature labour He had ceased to regard pituitary extract as dangerous with the advent of the 10 per cent solution, and had had no ill-effects from ¼ c cm of this solution given three-hourly up to 1 c cm

FRIDAY, JULY 23RD

At this meeting of the Section a discussion on the

CAUSES AND TREATMENT OF UTERINE HÆMORRHAGE WITHOUT GROSS PHYSICAL SIGNS

was opened by Prof **BECKWITH WHITEHOUSE** (Birmingham), who said that it was somewhat strange that so little was still known about the facts at the basis of the function of menstruation Nevertheless, there were signs that we were nearing solid ground upon which we could build a structure of sound physiological and pathological knowledge

The Menstrual Function

Our knowledge of the causation and treatment of pathological uterine hæmorrhage must depend primarily on our views on menstruation Many important advances had been made during the last few years, and the recent work of Novak had corroborated the speaker's views of 1914, that at each menstrual function there was a definite shedding of portions of the superficial endometrium, and that the discharge consisted of the autolysed products of this necrosis Prof Whitehouse still believed that the secretion of the uterine glands was concerned in the breaking down of the menstrual clot composed of blood coagulum and tissue débris, and the work of W Shaw had confirmed this view The only modification the speaker desired was that in most cases autolysis began while the separating endometrium was actually in anatomic contact with the deeper layers, and while the extravasated blood was intimately associated with the epithelial débris Thrombolysis was by no means complete, and although the lay mind did not recognise as clots minute coagula in process of solution, it was the exception for clots to be entirely absent throughout the whole menstrual process He agreed with Novak that the desquamation of the mucosa was " a crumbling molecular process," bits of granular degenerated mucosa being shed until nothing was left but the " basalis " and perhaps a few " spongiosa " nests

The Nature of Menstruation

In the light of the most recent research menstruation must still be regarded as an afertile abortion of the non-pregnant decidua It corresponded with the death of the unfertilised ovum, and the commencing retrogression of the corpus luteum Rupture of the follicle and the escape of its liquor marked the beginning of the pre-menstrual hypertrophy of the endometrium, which should correctly be called the " menstrual decidua " It was still unknown whether the stimulus was provided by the hormone of the liquor folliculi, that of the ovum and its attached cells, or that of the developing corpus luteum

He considered the name " menstrual lochia " more appropriate for the discharge Menstruation removed the inhibiting effect of the corpus luteum upon rupture of succeeding follicles, and the cycle was re-established The old theory that the menstrual function was necessary for the reception of the ovum was a pure myth The explanation for fertility during lactation, after the menopause and during pathological amenorrhœa was the same , an ovum maturing late must produce either an afertile abortion (post-menopausal functional hæmorrhage) or else, if it happened to meet a spermatozoon, a post-menopausal pregnancy There was a striking similarity between the menstrual abortion and one during early pregnancy, and, in fact, menstruation was simply the disorderly action of a disappointed ovum

Periodicity of the Menstrual Function

To understand its remarkable periodicity it was necessary to remember that *Homo* was the most highly-specialised organism in existence Evolution had altered woman's sexual rhythm somewhat as scientific breeding and care had altered that of the domestic fowl The cause both of the monthly abortion and of the irregularity at the beginning and end of the sex-life lay in the ovarian follicles Factors that interfered adversely with the maturation and discharge of the ovum were reflected in the menstrual rhythm Halban induced menstruation and altered the rhythm by excising the corpus luteum Most experimental mammals had been changed by domestication from a monœstrous or diœstrous to a polyœstrous rhythm Confusion had arisen partly because in *Homo* fertilisation could take place at any time following the pre-œstrual abortion , the œstrual period was prolonged to reach and include the next pre-gravid state This variation must not influence consideration of the rhythm in lower types , the human sexual instinct was independent of the sexual organs Finally, the accessory genital glands, such as the thyroid and pituitary, were of greater importance in *Homo* Although woman was " built round her ovaries," these were only one link in the metabolic chain

The Uterine Secretion

About the function of the glands of the corporeal endometrium little was known Experiments showed that in some animals at least the uterine secretion was reabsorbed and helped to produce œstrus, but it was unlikely that it played any great part in producing the human sex instinct, which persisted after the menopause and even after removal of the sexual organs Possibly, however, it caused the pelvic hyperæmia of menstrual abortion and of early pregnancy, and autolysed the necrosed decidua and coagula when fertilisation did not occur It could occur without menstruation, but was always associated with it. Some of the confusion that existed about the nature of menstruation was due to the presence of these two separate functions of menstrual hæmorrhage and uterine secretion, of which the second was in a sense complementary to the first

The speaker described experiments in the production of artificial menstruation by excising the corpus luteum from the right ovary of a patient during an exploratory operation

Functional Pathological Uterine Hæmorrhage

His conclusions were based on 200 consecutive cases Pathological hæmorrhage usually fell into one of four groups, in which the periods were frequent, prolonged, severe, or irregular

Epimenorrhœa was the clinical manifestation of a hyperactive sex-complex The ovaries, working at high pressure, produced ova of low vitality, and frequent abortion resulted They were usually hyperplastic and often polycystic The condition was almost physiological at the beginning and end of sex life Curettage was useless The remedy probably lay in inhibiting the accessory sexual glands The speaker was investigating the injection of fresh corpus luteum extracts

Menostaxis, a prolonged period, was analogous to an incomplete fertile abortion Curettings from different parts of the uterus showed the normal post-menstrual phase, active superficial necrosis, and marked pre-menstrual decidua Chronic inflammation of the endometrium predisposed, but was not the only cause He suspected the corpus luteum, although curettage frequently cured

Menorrhagia, or " flooding " that nevertheless kept within normal time-limits was essentially due to uterine " insufficiency," which might be the result of many diverse factors It was associated with chronic sub-involution and metritis with senility and with general debility, and might be due to any cause which lymphaticus" type In Dr Timme's opinion, ophthalmoplegic migraine was essentially pituitary in origin, the enlarged pituitary impinged upon the cavernous sinus and thus involved the oculomotor nerves

Dr **GORDON HOLMES** (London) regarded migraine as a definite clinical entity, although other conditions might give rise to attacks resembling migraine Visual symptoms were by no means a constant feature of the disorder, and consequently many undoubted cases were not recognised As regards the vascular hypothesis, physiological evidence lent no support to the presence of a vasomotor mechanism, nor of sympathetic innervation, in the cerebral or meningeal vessels Also, the onset of the symptoms in migraine were, in his opinion, too rapid to be accounted for by pituitary hyperplasia It was known that the brain was sometimes subject to localised swellings; further, that in certain instances of decompressive operations performed for gunshot wounds, &c, on migrainous subjects, the migraine had disappeared after the operation Further observation was necessary on these points Finally, Dr. Holmes referred to the condition known as migrainous neuralgia

Dr **R G GORDON** (Bath) considered that in sufferers from migraine there was an underlying psychological condition that had many analogies to that of epilepsy There was the same narrow outlook and truculence towards certain things—a compensation for a feeling of inferiority This fact was fully borne out by psychological investigation Both conditions probably consisted in an interference with, or paralysis of, higher cortical centres with a consequent release of lower centres Slight traumata of the occipital cortex had been known to give rise to what might be termed traumatic migraine There were also rare cases in which migraine was followed by automatism similar to that of epilepsy, and Dr Gordon described a case in which the patient, following an attack of migraine, behaved in an asocial manner, threatening violence to members of his family, and recovering after an interval with no recollection of what he was doing during the automatic period

Dr **E I SPRIGGS** (Ruthin Castle) had classified the various types of headache coming under observation in a general private hospital Of 1219 cases, 89 had complained of headache, and in 57 this was the sole symptom Of 100 consecutive cases of headache, all severe, 36 were migrainous in type, but only 12 appeared to be examples of true migraine Migraine was often associated with definite physical disorder such as gall-stones or obstinate constipation, and upon relief of such a physical state the migraine might disappear Dr Spriggs cited cases to illustrate this contention

Dr **W A. POTTS** (Birmingham) described certain personal experiences with regard to migraine He considered that many cases of a migrainous type were associated with hypoglycæmia When such headaches occurred early in the morning, barley-sugar was an excellent remedy

Dr **G E NESBITT** (Dublin) considered that suggestion might play a large part in the onset of an attack of migraine, eliciting symptoms from a patient with migraine had been followed by an attack in the investigator. By an effort of concentration during an attack it was sometimes possible to maintain central vision, in spite of the absence of peripheral vision The two ætiological theories which appealed to him most were those relating to vasomotor disturbance and to the pituitary gland.

Mr **E W BREWERTON** (London) mentioned a case in which great relief had been obtained by rest, with the application of heat to the occipital region by means of an indiarubber hot-water bottle until the visual symptoms had disappeared Cold applications were then applied until the headache was relieved.

Dr. **C WORSTER-DROUGHT** (London) mentioned that, contrary to Prof Bramwell's experience, he had met several examples of migraine and epilepsy associated in the same patient, the epilepsy was usually of the petit mal type He could remember no case of migraine in which some error of refraction had not been present, at the same time, it could not be claimed that correction of the refractive error relieved all cases though some were undoubtedly benefited He also drew attention to the occurrence of dilatation of the pupil on the affected side during an attack of migraine This sign suggested sympathetic stimulation and harmonised with the vasomotor hypothesis Finally, as regards treatment for the prevention of attacks, in his experience the most successful remedy was luminal, gr. ½, taken twice or three times daily Large doses of calcium had been disappointing in his cases, although a few were relieved Intravenous injections of calcium had sometimes been successful, while endocrine substances and peptone therapy had given no very encouraging results.

THURSDAY, JULY 22ND

At the second meeting of the Section Dr **E MAPOTHER** (London) opened a discussion on

Manic-Depressive Psychosis

The range of the term manic-depressive psychosis, he said, was largely a matter of convention, there was no constant or specific cause for the disorder and no physical modifications recognisable during life or after death Under the heading manic-depressive psychosis were included cases of functional mental disorder which showed as their predominant feature one or other of a contrasting pair of anomalous types of reaction (1) melancholia or depressive reaction, and (2) manic reaction The two syndromes were deviations from the normal in opposite directions and were often seen at different times in the same patient He then dealt with the relation of manic-depressive psychosis to the psychoneuroses, in a large proportion of both groups of disorder the attack was related to mental stress and led to a morbid protraction of a condition that the circumstances of the stress would be expected to cause. Attacks of melancholia and mania often amounted to decontrol of tendencies which had only just been inhibited when the patient was at his best Dr. Mapother next described the clinical variations in the melancholic type of reaction—e g, agitation in the elderly, and stupor in the young It was customary to distinguish agitated and resistive forms, according to the type of psycho-motor reaction, but such distinctions were very unstable Morbid fear with insight had been picked out and labelled "anxiety neurosis," but the condition seemed to merge into other types of depression such as agitated melancholia As regards the pathology of manic-depressive psychosis, it was not known whether the primary change was within or outside the central nervous system, but some evidence was gradually being accumulated that there occurred certain physical changes which appeared primary and essential, among these were histological changes in the cortex cerebri, gonads, and pituitary gland, hæmoclastic crises, anomalous blood-sugar curves, and disorders of gastric secretion It was to be admitted, however, that such changes were common alike to manic-depressive psychosis and to dementia præcox, the difference being merely one of intensity Ætiologically, the essential cause seemed to be an innate and inherent susceptibility to the condition, while the *actual* exciting factor was often mental stress—bereavement, financial worry, illegitimate *pregnancy* At various times there had been three attempts to replace heredity as an ætiological factor: (1) Psycho-analytical theory, implying a deviation of development by infantile experiences (2) Endocrine *theory, that the disorder* depends upon endocrine disturbance It was true that manic-depressive psychosis might occur in association with Graves's disease, but this did not make it justifiable to apply the same reasoning to cases in which no endocrine disturbance was present (3) Theory of toxic absorption from septic foci in teeth, tonsils, or bowel, &c.

Prof. **SHAW**, in reply, said that chronic metritis and subinvolution were clinically indistinguishable, but the former term could not be dropped, as the condition might occur in nulliparous women He believed that Dr Adamson's schoolgirls owed their trouble purely to the nervous strain; they were generally working for examinations at that time He treated them by curettage, something to stimulate the uterine muscle, such as pituitary, and by taking them away from school The only real treatment for subinvolution was another pregnancy, but even then normal involution could not be guaranteed Some cases could be treated in the same way as the schoolgirls, and could often be tided over until the menopause approached, when it was better to get rid of the uterus He was rather afraid of radium, since no one could tell him how it acted, and so many cases were associated with old chronic pelvic lesions that he thought it just as well to remove the organ altogether. No form of treatment should be used until the possibility of insidious malignant disease had been excluded

Prof. **WHITEHOUSE**, in reply, said that Dr Eames's cases should be treated by inhibition of the thyroid by X rays These did less damage to the thyroid than to the ovary as they inhibited without destroying Curettage should be a diagnostic procedure always, and full menstrual details should be given to the pathologist with the specimen Pathologists had to be educated in the newest work on the endometrium

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE

WEDNESDAY, JULY 21ST

The first meeting of this Section was held in conjunction with the Section of Ophthalmology, Dr E **FARQUHAR BUZZARD**, President of the Section of Neurology, being in the chair, when Prof **EDWIN BRAMWELL** (Edinburgh) opened a discussion on

Migraine

He began by describing the characteristic symptoms associated with an attack of migraine Headache, he said, was often the only symptom, and vomiting might occur without the occurrence of headache Migraine and epilepsy had many points in common, they were both paroxysmal and periodic, they usually occurred in early life, and there might be a family history of predisposition Following both conditions an aura might be present, as well as cumulative effects—i e, after a period of freedom a bout of severe attacks followed The attacks in both migraine and epilepsy were more liable to occur at the time of the monthly period and they sometimes ceased entirely during pregnancy. Occasionally one might be substituted for the other In spite of the analogies between the two conditions, however, Prof Bramwell maintained that the resemblance was merely superficial and that they were rarely met with in combination If migraine developed in middle life an underlying causative condition should always be suspected The predisposing factor in migraine appeared to be an inherent instability of the nervous system, while among exciting causes of an attack were intense mental concentration, fasting, eye-strain, tobacco, anxiety, and worry. Vascular disturbances were often observed, including pallor or flushing, hardening of the temporal artery, and alterations in the calibre of the retinal arteries In Prof. Bramwell's opinion the actual headache was the result of a release from spasm of the meningeal vessels, since the brain was insensitive, the pain must be referable to the meninges The prodromal symptoms could be accounted for by spasm of the meningeal vessels and the ensuing headache by their subsequent relaxation There had also been a tendency to attribute migraine to an error of metabolism, while such symptoms as low blood pressure, polyuria, brachycardia, and low blood-sugar had been said to suggest an endocrine factor Among other ætiological theories were congenital narrowing of the foramina of Monro, which varied from time to time, and temporary enlargement of the pituitary gland. Treatment was a difficult problem It was necessary that every case should be subjected to a full investigation, with consequent elimination of any exciting factors Among the promising forms of treatment were peptone therapy, luminal, bromides, and nitrates

Mr W H. **MACMULLEN** (London), in opening the discussion from the standpoint of the ophthalmologist, commented upon the various visual symptoms so frequently associated with attacks of migraine Visual disturbances were the commonest of the subjective sensory phenomena Although they varied, one feature was frequently present—namely, a loss of sight in part of the field of greater or less extent These scotomata might develop suddenly to their full extent, or might start at a small spot and gradually spread Other subjective symptoms were migrainous spectra, the most important feature of which was a zig-zag or angled character Sometimes a scotoma, with or without associated spectrum, extended across the middle line of the visual field Rarely there was a central scotoma, and cases of transient total loss of vision had been recorded, as a rule, however, the fixation point was not involved The scotomata of migraine usually lasted a short time only, but cases of more persistent hemianopia had been reported Mr MacMullen also referred to ophthalmoplegic migraine, in which, following an attack of migrainous headache, an ocular palsy occurred Many of these cases, however, had subsequently been shown to depend upon organic disease, such as tuberculous meningeal exudate or orbital periostitis The explanation of the ophthalmic symptoms was difficult, as different parts of the visual apparatus were affected in different cases Bilateral scotomata suggested a change above the chiasma—e g, in the visual cortex—with gradual spreading A localisation in the basal ganglia or geniculate bodies had also been suggested Among the changes in the fundus, either dilatation or constriction of the retinal arteries might be seen, but often there were no abnormal signs In one case during an attack Higgens found the retinal arteries reduced to mere threads with engorgement of the veins He agreed with Prof Bramwell that vasomotor changes appeared to be at the root of the phenomena, and referred to a case in which migraine replaced a previous urticaria; the migraine lasted for 15 years and with its cessation the urticaria recurred though with less intensity As regards the influence of eyestrain there existed diametrically opposed views Some writers stated that there was no connexion between the two, and correction of an error of refraction never cured migraine On the other hand, Hurst maintained that migraine was invariably due to eyestrain In Mr MacMullen's experience the common error was a mild degree of hypermetropic astigmatism, often with a slight degree of heterophoria After correction of the error many cases derived benefit and some, indeed, complete relief It was only by organised team-work, however, that it was possible to ascertain the various factors that underlay migraine

Dr W **TIMME** (New York) considered that migraine was merely a symptom of some underlying condition, hence the discrepancy in the views advanced regarding its ætiology Migraine might result from eyestrain or from other causes, just as a cough or epilepsy might be a symptom of a more profound pathological state He wished particularly to refer to migraine of pituitary origin. The thyroid gland had been shown to enlarge periodically, so why not the pituitary? If the sella turcica was small, such pituitary enlargement would give rise to migrainous headache. later results of such enlargement might be seen in X ray examination, the sella turcica showing erosion and thus accommodating itself to the enlarged pituitary A particular type of individual that was predisposed to this form of disorder was the "status seemed to be the administration of the active substance of the gland. It appeared, however, that intravenous or intraperitoneal injections gave no constant results, and the efficacy of oral administration was often very doubtful. In some cases of the adipose type, thyroid in moderate or large doses led to some improvement. When more urgent symptoms of compression by a pituitary tumour of neighbouring structures appeared, there were only two effective modes of treatment—surgery and radiology.

Mr. NORMAN DOTT (Edinburgh) said that tumours in the pituitary region might originate either above or below the diaphragma sellæ. X ray examination often indicated the differential diagnosis. In supra-sellar tumours there was erosion of the clinoid processes and a flattening of the sella turcica, while in sub-sellar tumours the sella turcica was enlarged and might be ballooned. The differential diagnosis was important from the standpoint of surgical treatment, the method of approach being different in each case. Pituitary adenomata were very rare before the age of 15, and comparatively rare before 25, while supra-sellar cysts were commoner in young subjects. As regards the surgical treatment of pituitary disorders, it was not justifiable to operate for purely glandular symptoms. Severe headache and progressive failure of vision, however, should lead to a serious consideration of the question of operation, while operation should be urged when the visual fields were progressively disappearing. In most cases total removal of the tumour was impossible and scarcely to be contemplated. Subsequent enlargement had to be reckoned with. The aim was to try to give the tumour room to grow downwards by removal of the floor of the sella turcica. The trans-sphenoidal method of approach traversed a potentially septic field, but the tumour itself constituted a barrier between the subarachnoid space and the sphenoidal sinus. The trans-sphenoidal route was the method of choice for pituitary adenomata. Supra-sellar tumours were often incapable of complete removal. Good access could be got from above, therefore the trans-frontal method was most advantageous, the tumour being approached from the right side. In cases of doubt, trans-frontal exploration was indicated.

Mr. M. L. HINE (London), from the ophthalmological standpoint, advocated the use of white test objects for taking visual fields in cases of pituitary disorders.

Dr. W. J. ADIE (London) amplified the relationship of the pituitary body to the vegetative centres in the hypothalamus region. Their close anatomical relationship suggested an equally close physiological connexion. He submitted that these vegetative centres and the pituitary body formed a physiological mechanism which might be termed the pituitary-'tween-brain system. The same symptoms and syndromes might arise from disease strictly confined either to the glandular or the nervous part of this system. It had been shown that minute lesions confined to the 'tween-brain and sparing the pituitary could cause glycosuria and polyuria and be followed by obesity and genital atrophy. Dr. Adie illustrated his remarks by reference to certain cases of encephalitis lethargica.

Dr. H. GARDINER-HILL (London) described cases of obesity and growth disturbances in children in which there was no evidence of pituitary tumour. In over 100 children with clinical features suggestive of pituitary disease and in whom carbohydrate metabolism was altered, he had found evidence of pituitary or supra-sellar tumour in only about 10 per cent., and these were cases of the true Fröhlich type. There was also a high proportion of cases in which obesity and overgrowth was combined with early development again without evidence of pituitary tumour. In these cases the obesity was often extreme at the age of 14 or 15; its onset was accompanied by marked acceleration of growth which continued until puberty when it ceased.

Mr. G. JEFFERSON (Manchester) dealt further with the question of surgical treatment. The supra-pituitary tumour or cyst was accessible only by the trans-frontal method of approach. As regards the true pituitary tumour, there was still a difference of opinion about the best method of attack; Mr. Jefferson favoured the trans-sphenoidal route. Entire removal of such a tumour could scarcely be hoped for; the operation was largely one of local decompression—to relieve visual defects or to prevent blindness. He then described in detail the trans-sphenoidal operation.

Dr. ELIZABETH EAVES (Sheffield) gave particulars of three cases of dyspituitarism examined post mortem. In the first, the pituitary gland was small and considerably fibrosed; in the second—a case of infantilism with polyuria—the whole brain showed hypertrophic sclerosis and the pituitary was compressed by a dense capsule. The third case was one of encephalitis lethargica in which the anterior pituitary lobe was fibrosed. Dr. Eaves showed sections of the pituitary glands of these cases and also described certain experiments she had carried out showing the effect of insulin upon the pituitary body.

Dr. C. G. IMRIE (Sheffield) gave details of a case of polyuria following encephalitis lethargica in which the symptom was controlled by pituitrin injections. The pituitrin was not necessarily specific, as J. S. B. Haldane had shown that pituitrin would control the polyuria following the taking of large quantities of water. When the percentage of blood-sugar was low the effect of pituitrin was to cause a rise of blood-sugar, rendering the curve more normal; indeed ½ c.cm. of pituitrin had a greater effect on the blood-sugar curve than 50 g. of glucose.

Reviews and Notices of Books.

PSYCHOLOGICAL MEDICINE.

A Manual on Mental Diseases for Practitioners and Students. Fourth edition. By Sir MAURICE CRAIG, C.B.E., M.D. Camb., F.R.C.P. Lond., late Physician for and Lecturer in Psychological Medicine, Guy's Hospital; and THOMAS BEATON, O.B.E., M.D., M.R.C.P. Lond., Senior Assistant Physician and Physician to Out-patients, Bethlem Royal Hospital. London: J. and A. Churchill. 1926. With 25 plates, some in colour. Pp. 437. 21s.

IT has been a pleasant and stimulating task to review the fourth edition of this well-known text-book. This is the first edition to appear under the joint authorship of Sir Maurice Craig and Dr. Beaton, and it may be confidently predicted that it will not be the last.

The book is divided into nine sections containing 26 chapters. Besides the usual subjects dealt with in a work of this sort there is a section on Mental Deficiency, and a final section on Miscellaneous Subjects contains chapters on malingering, case-taking, the legal relationships of insanity, treatment and laboratory work. The last is a welcome and much needed addition to works on psychiatry, and might be extended in future editions. It contains short accounts of the more important laboratory tests which are useful to the practising clinician in the investigation of his cases. It calls attention to the necessity for blood counts, blood-sugar estimations, and detailed examination of the urine and cerebro-spinal fluid, and it points out how much information can be gained from estimating basal metabolism and protein sensitivity. Such investigations are of great value in clearing up the cause of an obscure confusional state, and it is right to insist on their importance.

The sections on the Psychoses are admirable. The classification is clear and is well justified throughout. Ideas of classification are at present somewhat nebulous, and that adopted, which owes something to the influence of Kraepelin and Bleuler, may not agree with the views of some authorities, but it is certainly practical. Of special interest is the chapter

Further evidence was necessary before this latter view could be accepted, although it was true that syndromes of a manic-depressive type might result from febrile disturbances such as influenza If arterio-sclerosis could be excluded and there were no paranoid features present, recovery from the attack was possible even in involutionary forms The duration of a melancholic phase was seldom less than two or three months, while few cases of mania recovered before two or three weeks In the diagnosis of manic-depressive psychosis it was necessary to exclude organic diseases such as general paralysis, encephalitis, arterio-sclerosis, thyroid excess, and alcoholism Finally, Dr Mapother dealt briefly with the question of treatment In view of our deficient knowledge of the disorder, treatment was of necessity mainly symptomatic In acute mania home treatment was inadvisable In general, psychotherapy for these cases was of little value and might even be harmful, but temporary effects were possible in the early stages by persuasion, encouragement, and firmness. Treatment by means of thyroid, somnifen, and removal of septic foci had not been very encouraging With regard to hypnotics, Dr. Mapother agreed with Sir Maurice Craig that too serious a view was taken of the danger of habit-formation and too light a regard paid to the damage that might result from restlessness and insomnia

The President believed that in mild form manic-depressive psychosis was a more common disorder than generally supposed It was important to recognise it from the standpoint of both prognosis and treatment He disagreed with Dr Mapother on the question of anxiety neurosis being regarded as a subdivision of manic-depressive psychosis; he submitted that to distinguish between the two conditions was of fundamental importance as regards prognosis and treatment Manic-depressive cases were to be protected from suicide and from misjudged kindness in the form of psycho-analysis, they would recover at an uncertain date In anxiety neurosis the time of recovery depended upon the ease with which the cause of the anxiety could be disclosed, there was no fear of suicide and little fear of analysis.

Dr T A. Ross (Penshurst) joined issue with Dr Mapother on the question of the identification of psychoneuroses with manic-depressive psychosis The fundamental difference between the two conditions was one of mental state By careful attention to this factor differential diagnosis was possible Among essential differences between the two conditions was that of remorse No patient suffering from a psychoneurosis ever complained of remorse; if present, the case certainly belonged to the manic-depressive group The psychoneurotic always blamed something or somebody else for his disorder—never himself; further, even when apparently well, he was never really *quite* well—he was easily tired or upset On the other hand, the manic-depressive complains of no symptoms when free from his malady

Dr. R D Gillespie (London) considered that morbid dissatisfaction with oneself was the keynote of manic-depressive psychosis There was also an essential difference between the latter and psychoneuroses He reminded Dr. Mapother that the cortical and gonadal changes to which he had referred had not been fully confirmed Under the influence of Kraepelin, there had been an undue tendency to limit the conception of manic-depressive psychosis, possibly fresh divisions could be distinguished, such as reactive depression, psycho-neurotic depression

Dr. R H Cole (London) believed that everyone was liable to manic-depressive reactions of a mild type and that manic-depressive psychosis was merely an exaggeration of this state It was doubtful, however, if sufficient evidence existed for saying that a psychoneurosis could become a definite psychosis

Friday, July 23rd

At the third session of the Section Dr. Gordon Holmes opened a discussion on

Pituitary Disorders

In recent years, he said, the physiology of the pituitary gland had become a vexed question It might be said, however, that in general the pituitary was assumed to influence growth, metabolism, urinary secretion, and sexual function The clinical symptoms of pituitary disease were usually divided into those due to over-activity of a part of the gland and those resulting from loss or deficiency of some of its secretions This classification was probably the most useful that could be proposed in the present state of knowledge The best known and most common form of pathological overgrowth was acromegaly Dr Holmes then described the clinical features of this condition, illustrating his remarks with lantern slides of cases A little-known sign was enlargement of the intestines, especially of the colon The usual lesion responsible for acromegaly was an eosinophil adenoma of the anterior lobe Dr Holmes dealt with the various clinical types of pituitary deficiency such as the Fröhlich and Lorain type of hypopituitarism It should be remembered, he said, that adiposity might be due to atrophy of the suprarenal cortex in the absence of any pituitary disease Glycosuria often occurred in acromegaly and could be controlled by insulin injections, just as in diabetes On the other hand, in hypopituitary patients there was often a marked increase in carbohydrate tolerance, amounts larger than 150 g of glucose being necessary to produce glycosuria The investigation of the blood-sugar curve on the administration of glucose was a valuable diagnostic sign In pituitary deficiency the curve usually rose more slowly and remained raised for a longer period than normally The basal metabolic rate was also lowered in hypopituitary states and raised in acromegaly and giantism, but this was apparently not a constant rule Polyuria and diabetes insipidus had also been attributed to disease of the posterior lobe of the hypophysis Recent observations, however, have thrown doubt upon this explanation of polyuria, and many of them pointed strongly to the symptom being directly due to a lesion of the hypothalamus The temporary relief of diabetes insipidus by pituitrin, however, suggested that the pituitary gland might play a part in its production In cases of pituitary tumour both the systolic and diastolic blood pressure were usually lower than normal Dr Holmes next discussed pressure symptoms resulting from an enlarged pituitary, and showed lantern slides of different types of visual field disturbance in cases of tumour of the organ. Among other pressure symptoms, diplopia, strabismus, ptosis, and trigeminal pain might occur Papilloedema was rarely seen in simple pituitary tumour, but it occurred frequently with extra-sellar growths. Erdheim had first suggested that disturbance of the hypothalamus was the cause of many of the symptoms attributed to the pituitary, and Aschner and others had provided further experimental evidence in favour of this thesis It seemed to be definitely established that polyuria and temporary glycosuria could be produced by lesions of the tuber cinereum, and some experimenters claimed that adiposity and genital atrophy might result from injury of the base of the brain with the pituitary gland intact Diabetes and glycosuria had been found associated with lesions limited to the tuber cinereum; obesity had also been observed in disease of these parts The major clinical manifestations of pituitary disease were not common, but it was probable that certain minor disturbances of health, which often escaped notice, were the result of pituitary disturbance; unnatural obesity, stunted growth, and sexual weakness, for instance, might be of this origin, though accompanied by no other evidence of pituitary disease As regards treatment in hypopituitarism, the most rational procedure much explanatory description In most cases one or two lines suffice and succeed in conveying the essential features of the histology In the very complete chapter on syphilis (95 pages) there are five illustrations of the genital and no less than 12 of extragenital chancres This chapter alone, with its colossal bibliography of five and a half pages in small print, renders the whole volume noteworthy The writer's industry and acquaintance with the literature are exemplified by a brief running commentary to many of his references—e g, "an important and valuable contribution on syphilis of the nervous system," "exhaustive original studies on absorption of mercurial inunctions" This original treatment of the bibliography will save intending authors a great deal of unnecessary reading and reference The method of classification is not altogether satisfactory, and it is difficult to understand why epidermolysis bullosa, which is a congenital affection, is placed in the "inflammatory group," while the tuberculous and syphilitic diseases of the skin find a place among the "new growths" In this section, too, there is a grave omission English dermatologists are in agreement on the great importance of Schaumann's work on the type of "tubercular sarcoid," to which he has given the name of 'benign lymphogranuloma' The first of his papers was published in 1914, and he read a much appreciated paper on the whole subject before the Dermatological Section of the Royal Society of Medicine in December, 1924 But no reference can be found to it in this book His geographical situation has afforded Prof. Sutton extensive experience of such relatively rare conditions as blastomycosis, espundia, yaws, sporotrichosis, and mycetoma, all of which are illustrated by actual photographs The chapter on leprosy, too, could only have been compiled by a writer with exceptional facilities, while those on tuberculosis and the tuberculides will repay a detailed study

The subject of treatment is briefly summarised, and the author has been careful to avoid the error of submitting a large and confused catalogue of alleged remedies from which the inexperienced practitioner is left to make a selection He has also skilfully avoided the equally undesirable fault of dogmatism Regarded from the point of view of a work of reference this text-book is fully the equal of any in the English language, and probably more complete than any in the matter of illustrations It should find a place on the shelves of every serious student of dermatology

---

PRACTICE OF UROLOGY.

By HUGH H YOUNG and DAVID M DAVIS With the collaboration of FRANKLIN P JOHNSON In two volumes London W B Saunders Company, Ltd 1926 Pp 1433 £5 5s.

THIS large treatise is based on a study of 12,500 urological cases and the work has been well done, the peculiar value of the book lying in the personal note that permeates it throughout Mature judgment resulting from an immense individual experience is handed out to the reader and no mere compilation of the literature The preparation of the book must have necessitated the reading through of thousands of case-histories, the writing of innumerable letters of inquiry, and countless clinical examinations of patients long since discharged from the clinic. This method of writing, however, leads to certain omissions For instance, less attention is devoted to suprapubic prostatectomy than its generally recognised importance deserves There is no account of exposure of the lower ends of the ureters by a median subumbilical extraperitoneal route But it is open to question whether these omissions are a drawback It is of more advantage to listen to what Young has to say about perineal prostatectomy than to read his account of the suprapubic operation, which is only done in his clinic for some special reason as, for instance, when there is an accompanying ankylosis of the hip-joint or when a perineal operation has been done already, or when, in attempting it, a laceration of the rectum or urethra has occurred Young has performed 1049 perineal prostatectomies with a mortality of 3 4 per cent—a truly wonderful achievement The mortality in 108 suprapubic operations was 8 2 per cent With regard to radical extirpation of the malignant prostate, in the later cases it has been possible to do this without injury to the external sphincter The results have proved to be ultimately somewhat better than those following radical operation for carcinoma of the breast

There is so much information to be gleaned from these two volumes that it is difficult to select sections for special mention or commendation Noteworthy are the accounts of the radical cure of incontinence, the removal of bladder diverticula by suction, and the surgical treatment of tuberculous epididymitis When there is a stone in the ureter the author does not counsel a long expectant policy, advice which would seem to be sound from all points of view There were curiously few plastic operations for hydronephrosis performed considering the large number of cases under review Of five patients treated in this way, only four could be followed up, and in three of them cure resulted The description of the physiology of urination, of the phenolsulphonephthalein test of renal function, and of the decompression apparatus used in the clinic make interesting reading

---

NOTABLE BRITISH TRIALS

Trial of Katharine Nairn Edited by WILLIAM ROUGHEAD London and Edinburgh W Hodge and Co 1926. Pp 257 10*s* 6*d*

THE latest volume in the series of "Notable British Trials" deals with the famous proceedings against Katharine Nairn on the charge of murdering her husband, Thomas Ogilvy, in 1765 Mr William Roughead, well known as a student and expositor of the criminal annals of Scotland, edits the report, provides an admirable introduction, and prints certain fresh material which his research has discovered. The case is of strong medico-legal interest, an early instance of arsenical poisoning The charge would nowadays be proved or disproved beyond doubt by expert scientific evidence But, though the dead man's symptoms before death and the outward appearance of his body after death were described by witnesses, there was no post-mortem examination Doctors gave evidence, but they mostly disclaimed experience of deaths due to poisoning, the chief expert testimony was that of an Edinburgh surgeon, who had the advantage of having once attended a woman who was believed to have died of arsenic Mr Roughead has much enhanced the value of his volume by including a note by Prof. Harvey Littlejohn upon the medico-legal aspects of the trial wherein the medical symptoms are summarised and the inferences to be drawn therefrom are stated

Katharine Nairn, daughter of a Perthshire baronet, married Thomas Ogilvy in January, 1765, when she was a girl of 19 He was twice her age, and apparently in indifferent health His brother, Lieut. Patrick Ogilvy, invalided home from abroad, joined the household, and it was thought that he and his sister-in-law grew overfond of one another The brothers quarrelled and Patrick left the house At the end of May he bought a small phial of laudanum and about an ounce of arsenic, ostensibly to destroy some dogs. On June 5th a messenger from Patrick brought a packet to Katharine Next morning, Thomas the husband, kept his bed, having been unwell in the night Katharine was seen to make him a bowl of tea and to add sugar and milk This she took upstairs to him Soon afterwards he was taken very ill and complained of having been poisoned Presently he rose, dressed himself and went out, but soon he was back in his kitchen where he was violently sick At midnight, before the arrival of the doctor who had been summoned, he died Five days later three doctors were assembled for a post-mortem on adolescent psychoses, dementia præcox, and dementia paranoides These conditions are described in a masterly manner, and this chapter, more than any other, gives the authors a chance of aptly presenting the biological views of mental disorder which they hold The known pathology of these conditions is fully discussed and illustrated by many excellent plates—amongst which, however, it is surely a mistake to include one which shows sections cut from the brain of a patient with dementia præcox whose death was caused by pneumonia, since no reliable conclusions can be drawn when an acute infective condition obscures the picture

That part of the book devoted to general paralysis and other syphilitic infections of the nervous system is also well illustrated The authors have a cautious attitude towards the malarial treatment of paresis, and do not go into details about the way in which it is carried out, which is perhaps wise, for the treatment requires most careful handling; what would be useful to the practitioner would be a short paragraph giving the contra-indications to the use of malaria in treating a paretic; age, for example, is a most important factor, while remission is most likely to occur in the early stages, as Dr C P Symonds points out in THE LANCET Extra Number on "Early Mental Disease"

Alcoholic mental states are graphically described and the lines of treatment well presented, but little or nothing is said about the psychological factors which underlie drinking These have been carefully studied by a number of observers and deserve some mention. The student nowadays is not content to read that a case of delirium tremens suffers from zoological hallucinations He wants some explanation as to why these hallucinations are nearly always of "animals and insects that crawl about his bed," and he wants also some explanation of the mechanisms which determine the habit of drinking to excess These remarks naturally introduce the subject of psycho-analysis and the modern concept of the unconscious mind The authors describe psycho-analysis in a brief paragraph, which concludes with the statement that "it is very doubtful whether psycho-analysis provides either an explanation or a remedy for all psychological phenomena" The sentence summarises the attitude of the authors to psycho-analysis The section on Psychology at the commencement of the volume is concise, and is no mere reproduction of other writers It is well and forcefully written and can be understood with readiness by the student. The same remarks apply to the chapter on symptomatology, but in both more attention might have been paid to modern psycho-pathology. Practitioners of the analytic schools will quarrel with the view that the procedure consists of explaining the theory of analysis to the patient, and Freudians are not likely to accept as a fair presentation of their views the statement, on p 263, that anxiety states result from the *cessation* of coitus interruptus

The psychoneuroses and neuroses are very ably dealt with, though here again the psycho-pathology of the conditions is not very fully explained But what is important is the fact that Sir Maurice Craig and Dr Beaton evidently regard these minor mental maladies as in no way sharply divided from the graver disorders of mind There has been a tendency to divorce these common mental states from the severer grades of mental illness The term neurasthenia is discarded; the authors consider that most so-called neurasthenics are constitutional depressives with hypochondriacal developments the rest belonging to the anxiety or obsessional groups

Much has been done in this work to draw together psychiatry and general medicine The biological meaning of symptoms in states of insanity, of whatever degree of severity, is strongly insisted upon The reader feels that every page is the result of clinical experience, of long and intimate contact with patients The book is not an arm-chair product, but is alive with practical experience and the original presentation of old problems

AURICULAR FIBRILLATION.

By J G EMANUEL, B Sc, M D, F R C P, Physician to the Queen's Hospital, Birmingham Birmingham: Cornish Brothers, Ltd 1926 Pp 31

THIS small volume contains the two Ingleby lectures delivered at the University of Birmingham in 1925 The text is well illustrated by electrocardiograms and charts, and the clinical aspect of the subject is thoughtfully considered In such limited compass it is not possible to deal comprehensively with auricular fibrillation, and the author has accordingly confined his attention to certain features illustrated by clinical cases under his own care Special stress is laid on the part played by toxins, not merely in causing fibrillation, but also in producing an impairment of conductivity in the Purkinje system which results in a relative bradycardia The effect of digitalis on fibrillation and normal rhythm respectively is well illustrated by a case of paroxysmal auricular fibrillation During the paroxysms the ventricular rate was in the neighbourhood of 90 per minute, the patient being well under the influence of digitalis, but on reversion to normal rhythm it rose to 120 or 140 per minute, to return again to 90 as soon as another paroxysm supervened Dr Emanuel suggests that the potent action of digitalis in fibrillation is attributable to the abnormal nature of the impulse, and he expresses the further opinion that the ventricle will contract with the maximum efficiency only in response to an impulse arising in the sino-auricular node This is a somewhat daring hypothesis, for the cardiac impulse is generally held to be similar in nature to the nervous impulse which is known to obey the "all or none" law In another case the site of action of digitalis was studied by repeated subcutaneous injections of atropine. At first atropine produced a quickening in the ventricular rate of about 50 beats per minute, but when the patient was fully digitalised the acceleration only amounted to 10 to 15 beats per minute, suggesting that the early digitalis effect was due to vagal stimulation, while the later effect depended on a direct action on the cardiac muscle For rapid digitalisation the author employs Nativelle's granules, as many as nine of the larger granules (1/240 gr), each of which he considers is equivalent to 30 minims of the tincture, being given in 24 hours A final section deals with quinidine treatment, and stress is laid on the importance of giving the drug at two-hourly intervals

The volume will be read with interest by those who follow the more recent advances in cardiology

---

DISEASES OF THE SKIN

Sixth edition By RICHARD L SUTTON, M D, LL D, F R S Edin, Professor of Diseases of the Skin, University of Kansas School of Medicine London: Henry Kimpton. 1926 Pp 1303 52s 6d

AN ideal text-book on skin diseases can be compiled only by a teacher of experience, energy, and a certain leisure The text should be as free from hypothesis and theoretical argument as is compatible with the intricacy of the subject It must be profusely and accurately illustrated by photographs and coloured sketches of the actual lesions, of which, if possible, more than one type should be represented and amplified by at least two microphotographs—a low and a high power magnification—of typical sections It must be up to date and provide a bibliography which should be cosmopolitan and not national only Finally, the index should be complete

The majority of these desiderata are fully met in the latest edition of Prof Sutton's admirable work, which first appeared in 1916 There are 1158 illustrations in 1268 pages of text—almost one to the page The value of these in enlivening the text, reviving the visual memory of similar cases, and for purposes of comparison can scarcely be exaggerated The excellent microphotographs are not spoiled by too

Rapid & Safe Relief from Pain

CIB 1926

CAL

A new, non-habit forming co

INDICATIONS	
Neuralgia, migraine, cephalalgia, earache, toothache, pain associated with malignant growths, post-operative pain, dysmenorrhœa, articular and muscular pain, &c	Cibalgin T of 15 and Cibalgin L (1 c c = Vials of 1 Cibalgin Am Cibalgin Cibalgin)

Clinical Repor

THE CLAYTON ANI

PHARMACEUTICAL D

40, Southwark Street,

Telephones HOP 6954-5

AN EMPIRE

OF GREAT VAL

OBTAINABLE OF ALL WINE DEALERS

Sample Bottle sent free in the United Kingdom, on receipt of professional card

e Royal
attention
f mental
evention
diseases
c health
and
during
their
of the
tionary
—enteric
alence,
possible
infec-
ation,
tion.
oody
the
the
so
the
int
n
is
the
of
icked
in his
alleged
medical
y season
alent and
own and
l a victim
on. Lately
d patients,
cked, have
the house,
in a very

se diseases
action, and,
thought to
isease It is
nd Durham,
end of last
at "colitis"
rtheless, on
sed that the
s of asylums
acceptance,
lauded the
a prophy-

-bacterio-
various
reported
ears that
pathogenic bacillary infection the former usually are the *B typhosus* and the *B paratyphosus* B inhabiting both intestines and biliary system, the latter several allied strains of *B. flexner* inhabiting the large intestine chiefly. Both motile and non-motile infections may occur at different times in the same individual, and when pathogenic organisms are prevalent certain lowly- or non-pathogenic organisms—e g , *B morgan* No 1—are commonly also found There is considerable evidence in favour of individual susceptibility to these infections *B typhosus* and *B. paratyphosus* B, when they occur, are as a rule readily controlled by systematic clinico-bacteriological methods, since only actual cases or inoculated persons provide a Widal reaction, and systematic blood examination and segregation of all cases of illness will ensure isolation of the infected patients, the diagnosis being confirmed by bacteriological study of the excreta The only difficulty likely to be encountered is the possible existence of a non-agglutinating carrier Such are, however, fortunately very rare, though their occasional existence seems to be definitely proved. Whether removal of the gall-bladder will permanently cure these cases remains yet uncertain It must not be forgotten that at any time a case of typhoid or para-B may be introduced from outside by either staff or visitors, and this is a probable cause of sporadic cases. The Flexner bacillus is a much commoner infection, due to the fact that even an isolated case of clinical dysentery is invariably accompanied by a number of positively agglutinating cases, which may be the result of infection or merely of ingestion Extensive measures of isolation are therefore required whenever active cases are discovered, since delay for the repeated systematic examination of fæces is likely to result in the appearance of further actual cases or even of a definite epidemic It is well known that wholesale transfers of patients and the opening of new asylums are apt to be followed by epidemics of enteric infection. This result is due to the fact that the relative immunity to its own strain acquired by an asylum population does not extend to any foreign strain introduced Amongst batches of untested transfers, however otherwise carefully these may have been selected, a number of positively agglutinating (non-inoculated) cases may be found, and some at any rate of these, unless isolated, will infect the strange population into which they are introduced. A certain percentage of new admissions, and also—which may seem strange—a certain percentage of (non-inoculated) probationer nurses may be found to be positively agglutinating The former require isolation and investigation and the services of the latter after confirmation of the test should be dispensed with Finally, it is of the greatest importance that a post-mortem investigation, including the systematic examination of and the taking of cultures from the intestine, should be performed in the case of every death occurring in a mental hospital

Inoculation with autogenous vaccines in selected cases of dysentery is a valuable means of treatment and it has certainly done no harm when pressed in confirmed cases of para-B and typhoid In the former cure has sometimes followed the pushing of inoculation to the danger point. The question of preventive inoculation is important, an interesting illustration of its application is given in the article by Dr C A Hogg and Dr O Latham, which appears in this issue of The Lancet If a population is known to be free from enteric infection, inoculation against infection of a certain kind is undoubtedly highly protective for a fairly long period On the other hand, unless entire freedom from the particular examination The body was not opened, however, it being thought that its state of putrefaction was such that no signs of the cause of death would be discovered Katharine and Patrick were jointly indicted not only for murder but also for incest They were found guilty on both charges Patrick was hanged, protesting his innocence, but Katharine obtained a temporary respite by saying she was pregnant. She was thereupon examined, not, as under the English custom, by a jury of matrons, but by five midwives, who a few months later confirmed her statement. On Feb 26th, 1766, her child was born, on March 17th, when the judges reassembled in the Tolbooth to pronounce her doom, it was found that she had escaped from prison She fled to France, where she met with further romantic adventures, finally ending her days in a convent

Were the prisoners rightly convicted? The evidence of incest was far from overwhelming, the murder charge rested mainly on the behaviour of the parties and on Patrick's purchase of arsenic This purchase he had not to explain in those more merciful days when prisoners had not the doubtful privilege of going into the witness-box Katharine was of decent upbringing and had married her husband, against her family's wishes, apparently for love Why should she so soon have turned against him? If she and Patrick were lovers, they could not have married even when Thomas was put out of the way It was a strange case with strange witnesses and strange evidence Readers of the story so well put before us by Mr Roughead will be able to form their own conclusions

MODERN METHODS OF AMPUTATION

By THOMAS G ORR, A B., M D, F A.C S, Professor of Surgery, University of Kansas London. Henry Kimpton. 1926 With 104 figures Pp 117 16s.

IN a concise form Prof Orr gives directions, illustrated by clear figures, of the more usual amputations There is little discussion in his book of the pros and cons of the various procedures, and the details given are somewhat scanty For instance, in describing Syme's amputation the author does not mention some of the mistakes into which the careless or inexperienced operator may fall These mistakes may seriously detract from the value of the stump which, in favourable circumstances, should be the best of all for locomotive purposes A little more precision as to the minimum length of bone which can be utilised in a thigh stump would have been useful to an operator not familiar with the possibilities of practical prosthetics In the chapter on cineplastic amputations, Prof Orr says that "very little of such surgery has been done in America or England" In this country a considerable number of such operations were performed during and after the war, but the practical results were so discouraging that the method may now be regarded as abandoned In Germany the enthusiastic Sauerbruch still claims success, the silence of other German surgeons on the subject is significant A chapter on artificial limbs concludes the work, but it was evidently not possible to do this subject full justice in the limited space devoted to it The paper, type, and illustrations are all admirable, and within its limitations this book should be useful

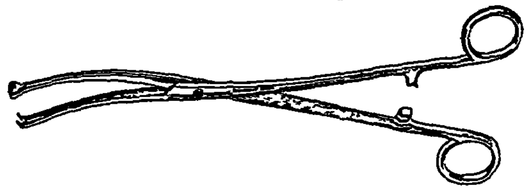
JOURNALS

JOURNAL OF INDUSTRIAL HYGIENE July, 1926—A definite and unique condition resulting from inhaling dust arising while mining iron ore in Cumberland is described from the clinical viewpoint by A. J. Cronin Certain tissue changes were found diffused through both lungs, associated with a clogged-up feeling and dyspnœa on exertion Chest expansion was limited; massive fibrosis and pleural involvement were absent No other evidence of pneumonoconiosis was present—The introduction of lead compounds into rubber for toughening purposes has for long been a source of plumbism C A Klein tells how the risk can be avoided by using special sheets containing 80 parts of lead to 20 of wax or rubber instead of a raw lead compound These sheets are made for the trade in bulk under special precautions—A careful comparative test of different instruments for determining air dustiness is described by S H Katz, G. W Smith, and W M Myers Equations are given for converting dustiness in terms of one instrument into terms of another The article is highly technical and mathematical—A research into the effect of turbulent air motion and of humidity on the stability of dust, *fume*, and *smoke clouds* is discussed by P Drinker, R M Thomson, and J L Finn Neither air motion nor humidity exerted any appreciable effect on silica dust, but both aided in clearing zinc oxide fumes, probably due to facilitating aggregation of particles

New Inventions.

AN IMPROVED VULSELLUM FORCEPS

I HAVE had made a vulsellum forceps on the lines of a ring forceps My improved instrument does not tear out because it folds in a portion of tissue in the ring and the teeth do not catch when being inserted into the cervix, and the instrument does not tear out lacerations Scarifications are thus avoided

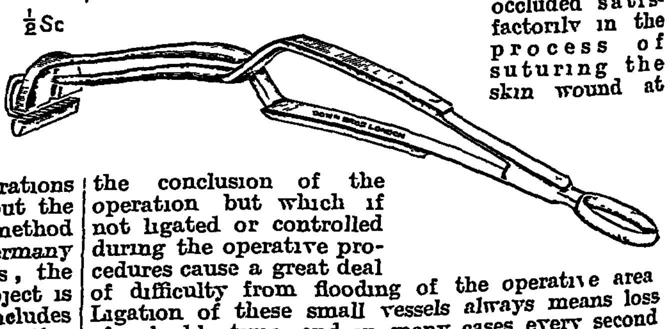


The manufacturers are Messrs C F Thackray, of Park-street, Leeds

Paisley H C DONALD, M B, F R C S Edin

HÆMOSTATIC FORCEPS

I HAVE devised a hæmostatic forceps (see figure) primarily for operations on the skull but also for all cases where a long skin incision is necessary There are always numerous small vessels which can be occluded satisfactorily in the process of suturing the skin wound at the conclusion of the operation but which if not ligated or controlled during the operative procedures cause a great deal of difficulty from flooding of the operative area Ligation of these small vessels always means loss of valuable time, and in many cases every second is of value



The chief advantages about these forceps are: ease of application, rapidity of application; they can be used on wound edges in place of towel-holding forceps, thus carrying out the double duty of (*a*) towel-holding forceps, (*b*) hæmostatic forceps (practically no Spencer Wells being required), the large area of the blades controls an extensive amount of cut skin edge (requiring fewer pairs), they can be quite well used for towel clips in the ordinary way in addition, and there are no screw-joints to rust or get out of order

Messrs Down Bros, Ltd, 21, St Thomas's-street, London, S E 1, are the manufacturers

Plymouth GEO L PRESTON, F R C S Edin

THE LANCET.

LONDON. SATURDAY, AUGUST 21, 1926.

ENTERIC INFECTIONS IN MENTAL HOSPITALS

THE publication of the Report of the Royal Commission on Lunacy has focused public attention on the difficulties in the administration of mental hospitals, of which none is greater than the prevention and treatment of enteric infections. These diseases have been largely eradicated by modern public health measures both from the population at large and from prisons and Poor-law institutions, and during the war preventive inoculation minimised their incidence amongst the combatants in spite of the necessarily bad hygienic conditions of stationary warfare. In mental hospitals, however, enteric infections have retained an undesirable prevalence, although recent research is at last making it possible to control or even to eradicate them. Enteric infections, then common in the general population, appeared in public asylums from their very inception. At Wakefield, built for 150 patients, a case of "bloody flux" arose within a week of the opening of the institution in 1818. Ten years later among the 256 patients the cases of dysentery became so numerous as to make it necessary to disperse the patients belonging to one of the wards into different parts of the house in order to turn that ward into an infirmary, where the dysenteric patients were kept distinct from the rest. Notwithstanding all that was done, fresh cases daily occurred, until, in the words of the medical director, a change took place in the weather, accompanied with the autumnal gales of wind. But meanwhile 14 patients out of 55 attacked in the course of the year died of the disease. In his report for the year 1831, referring to the alleged prevalence of dysentery in the asylum, the medical director states:

> "During a very hot summer and an unhealthy season subsequent to it, while the disease was both prevalent and fatal in the neighbouring towns and villages, my own and only child, a healthy boy of 3 years old, who fell a victim to it, was the only serious case in the institution. Lately a few cases have occurred, and four emaciated patients, two of whom were already sinking when attacked, have died from it. One case of dysentery now exists in the house; with this exception the inmates in general are in a very healthy state."

Nevertheless, as the years rolled on these diseases came to be regarded as a necessary infliction, and, under the general term "colitis," were thought to be one of the consequences of mental disease. It is not surprising, therefore, that MOTT and DURHAM, in their classical report published at the end of last century, whilst they stated definitely that "colitis" was in reality bacillary dysentery, nevertheless, on the information at their disposal, remarked that the disease rarely or never attacked the staffs of asylums. This valuable report did not obtain ready acceptance, since BEVAN LEWIS, as lately as 1909, lauded the systematic exhibition of "white mixture," a prophylactic treatment adopted by him in 1903.

For many years now systematic clinico bacteriological research has been carried out at various mental hospitals, including Wakefield, and reported to the Board of Control. From this it appears that of the motile and non-motile types of pathogenic bacillary infection the former usually are the *B. typhosus* and the *B. paratyphosus* B inhabiting both intestines and biliary system, the latter several allied strains of *B. flexner* inhabiting the large intestine chiefly. Both motile and non-motile infections may occur at different times in the same individual, and when pathogenic organisms are prevalent certain lowly- or non-pathogenic organisms—e.g., *B. morgan* No. 1—are commonly also found. There is considerable evidence in favour of individual susceptibility to these infections. *B. typhosus* and *B. paratyphosus* B, when they occur, are as a rule readily controlled by systematic clinico-bacteriological methods, since only actual cases or inoculated persons provide a Widal reaction, and systematic blood examination and segregation of all cases of illness will ensure isolation of the infected patients, the diagnosis being confirmed by bacteriological study of the excreta. The only difficulty likely to be encountered is the possible existence of a non-agglutinating carrier. Such are, however, fortunately very rare, though their occasional existence seems to be definitely proved. Whether removal of the gall-bladder will permanently cure these cases remains yet uncertain. It must not be forgotten that at any time a case of typhoid or para-B may be introduced from outside by either staff or visitors, and this is a probable cause of sporadic cases. The Flexner bacillus is a much commoner infection, due to the fact that even an isolated case of clinical dysentery is invariably accompanied by a number of positively agglutinating cases, which may be the result of infection or merely of ingestion. Extensive measures of isolation are therefore required whenever active cases are discovered, since delay for the repeated systematic examination of fæces is likely to result in the appearance of further actual cases or even of a definite epidemic. It is well known that wholesale transfers of patients and the opening of new asylums are apt to be followed by epidemics of enteric infection. This result is due to the fact that the relative immunity to its own strain acquired by an asylum population does not extend to any foreign strain introduced. Amongst batches of untested transfers, however otherwise carefully these may have been selected, a number of positively agglutinating (non-inoculated) cases may be found, and some at any rate of these, unless isolated, will infect the strange population into which they are introduced. A certain percentage of new admissions, and also—which may seem strange—a certain percentage of (non-inoculated) probationer nurses may be found to be positively agglutinating. The former require isolation and investigation and the services of the latter after confirmation of the test should be dispensed with. Finally, it is of the greatest importance that a post-mortem investigation, including the systematic examination of and the taking of cultures from the intestine, should be performed in the case of every death occurring in a mental hospital.

Inoculation with autogenous vaccines in selected cases of dysentery is a valuable means of treatment, and it has certainly done no harm when pressed in confirmed cases of para-B and typhoid. In the former cure has sometimes followed the pushing of inoculation to the danger point. The question of preventive inoculation is important; an interesting illustration of its application is given in the article by Dr. C. A. HOGG and Dr. O. LATHAM, which appears in this issue of THE LANCET. If a population is known to be free from enteric infection, inoculation against infection of a certain kind is undoubtedly highly protective for a fairly long period. On the other hand, unless entire freedom from the particular examination The body was not opened, however, it being thought that its state of putrefaction was such that no signs of the cause of death would be discovered Katharine and Patrick were jointly indicted not only for murder but also for incest They were found guilty on both charges Patrick was hanged, protesting his innocence, but Katharine obtained a temporary respite by saying she was pregnant. She was thereupon examined, not, as under the English custom, by a jury of matrons, but by five midwives, who a few months later confirmed her statement On Feb 26th, 1766, her child was born, on March 17th, when the judges reassembled in the Tolbooth to pronounce her doom, it was found that she had escaped from prison She fled to France, where she met with further romantic adventures, finally ending her days in a convent

Were the prisoners rightly convicted? The evidence of incest was far from overwhelming, the murder charge rested mainly on the behaviour of the parties and on Patrick's purchase of arsenic This purchase he had not to explain in those more merciful days when prisoners had not the doubtful privilege of going into the witness-box Katharine was of decent upbringing and had married her husband, against her family's wishes, apparently for love Why should she so soon have turned against him? If she and Patrick were lovers, they could not have married even when Thomas was put out of the way It was a strange case with strange witnesses and strange evidence Readers of the story so well put before us by Mr. Roughead will be able to form their own conclusions

---

MODERN METHODS OF AMPUTATION.

By THOMAS G ORR, A B, M D., F A C S, Professor of Surgery, University of Kansas London. Henry Kimpton. 1926. With 104 figures Pp 117 16s

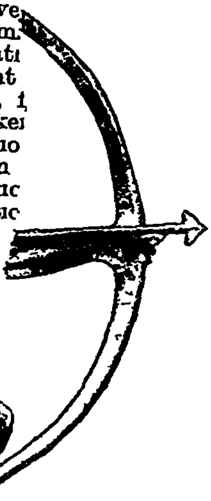
IN a concise form Prof Orr gives directions, illustrated by clear figures, of the more usual amputations There is little discussion in his book of the pros and cons of the various procedures, and the details given are somewhat scanty For instance, in describing Syme's amputation the author does not mention some of the mistakes into which the careless or inexperienced operator may fall These mistakes may seriously detract from the value of the stump which, in favourable circumstances, should be the best of all for locomotive purposes A little more precision as to the minimum length of bone which can be utilised in a thigh stump would have been useful to an operator not familiar with the possibilities of practical prosthetics In the chapter on cineplastic amputations, Prof Orr says that "very little of such surgery has been done in America or England" In this country a considerable number of such operations were performed during and after the war, but the practical results were so discouraging that the method may now be regarded as abandoned In Germany the enthusiastic Sauerbruch still claims success, the silence of other German surgeons on the subject is significant A chapter on artificial limbs concludes the work, but it was evidently not possible to do this subject full justice in the limited space devoted to it The paper, type, and illustrations are all admirable, and within its limitations this book should be useful

---

JOURNALS

JOURNAL OF INDUSTRIAL HYGIENE July, 1926 —A definite and unique condition resulting from inhaling dust arising while mining iron ore in Cumberland is described from the clinical viewpoint by A J. Cronin Certain tissue changes were found diffused through both lungs, associated with a clogged-up feeling and dyspnœa on exertion. Chest expansion was limited, massive fibrosis and pleural involvement were absent No other evidence of pneumonoconiosis was present —The introduction of lead compounds into rubber for toughening purposes has for long

been a soı
risk can b
80 parts oı
lead com
trade in
comparat
mining a
G W. Sn
for conve
into term
and mati
turbulent
of dust, 1
P Drinke
air motio
effect on
zinc oxic
aggregatic



AN

I HAV
of a rin
tear ou

the
int
ou

I h
prima
cases
are al

½Sc

the conc
operation,
not ligate
during the
cedures cau
of difficult
Ligation of
of valuable
is of value
The chief
ease of app
can be used
forceps, thus
holding force
Spencer We
the blades
skin edge (
well used
addition,
get out of

D O

ent Car

Messrs
street, L

Plymou

matters of congratulation are the reorganisation by Dr J. E McCARTNEY, appointed director last year, of the pathological services of the various hospitals which are now to be grouped into two central laboratories, that of the Northern Group being completed two months ago. At the Queen Mary's Hospital for Children an experimental unit has been started to deal with 36 girls and 24 boys suffering from rheumatic fever, acute endocarditis, or chorea, research work being now in progress At the Downs Hospital for Children an artificial sunlight room has been fitted up for the treatment of children suffering from ear disease, rickets, and debility. A veranda has been added to the infirmary at White Oak for the use of children suffering from interstitial keratitis The revised dietary scale for children, which substituted butter for part of the margarine allowance, has been in operation for a year and is confirmed. These are a sample of the ever progressive activities of the Board's medical staff, of which examples will be given later at greater length

◆

MENORRHAGIA.

EXCESSIVE bleeding at the menstrual periods is a very common symptom, yet it is one for which, as often as not, no really satisfactory explanation can be found. Even the recognition of abnormal menstrual loss has its difficulties, for what is harmless and natural in one woman may give rise to general ill-health in another Often, of course, an excessive flow is associated with gross organic lesions of the generative organs, such as fibromyomata of the uterus, and here the accepted mechanical explanation appears adequate There remains, however, a large majority of cases in which no gross physical change can be detected, and it was these especially that came up for discussion at the Meeting of the Section of Obstetrics of the British Medical Association which we report on page 378 Amongst them perhaps the most interesting are the two forms of menorrhagia which occur, respectively, at puberty and in the second half of the child-bearing period In the last few years evidence has gradually accumulated that menorrhagia of this kind is not due to abnormality of the uterus itself or of its lining mucous membrane, but rather to an excessive stimulus to menstruation which acts upon them Unfortunately, the nature of the normal physiological stimulus to menstruation is not yet fully understood. Presumably a chemical hormone is the immediate agent, and the balance of evidence favours the view that this hormone is formed in the Graafian follicle, though the corpus luteum and the interstitial cells of the ovary are both possible sources; it seems clear, too, that the other ductless glands, particularly the thyroid and pituitary, have an important relation to the process

Soon after puberty there appear examples of hypo- and hyper secretion, recognised clinically as primary amenorrhœa and menorrhagia of puberty, which are comparable to the cretinism and hyperthyroidism due to abnormal function of the thyroid gland On this analogy very severe puberal menorrhagia might be treated by removing part of the ovary, though it is questionable whether the results would be better than those of partial thyroidectomy for hyperthyroidism, but, fortunately, nearly all cases of menorrhagia in young girls get better spontaneously, their cure often being hastened if calcium is administered, apparently because the metabolism of calcium is rather intimately related to menstruation Primary amenorrhœa is of special interest because its treatment may throw light on the mechanism of normal menstruation It is by no means a rare condition, but the published results of particular forms of treatment are very variable Sometimes the administration of thyroid and anterior pituitary extracts seems to have established menstruation—cases were recently reported in our columns by Dr H GARDINER-HILL and Dr. J. FOREST SMITH[1]—but usually it has failed. An occasional success has also been recorded with various ovarian extracts It seems possible that in some patients the ovary only needs a slight stimulus from the thyroid or pituitary to establish its secretory function, but where this function is wholly wanting the only hope lies in regular injection of the appropriate ovarian extract Unfortunately, no satisfactory ovarian extract is at present available, doubtless the ovary supplies more than one substance, and possibly these are mutually antagonistic

The other and larger group of cases of menorrhagia—those which occur in the later part of the child-bearing period—is not so interesting from the physiological point of view, but clinically is of considerable importance In these women curettage often reveals a degree of hypertrophy of the endometrium which most pathologists consider to be definitely in excess of that found at any stage of the normal menstrual cycle, but at the age when this condition is found so many diseases may have left their mark on the genital organs that the problem is greatly complicated and probably no one explanation applies to all the cases So far as investigation is concerned, it seems to be most useful to assume that the ovary is at fault It is conceivable that anything which causes a thickening of its tunic may, by preventing rupture of the follicles, prolong the period during which ovarian secretion is absorbed, and a few interesting cases are recorded in which ovarian grafts became cystic and gave rise to severe menorrhagia because they were in a position where the follicles could not easily rupture Whatever the cause of the condition curettage is usually only of temporary benefit—at the Nottingham meeting Mr. COMYNS BERKELEY described it as the commonest and most hopeless operation for hæmorrhage—and in the last few years radium and X rays have been more and more employed as remedies The results, though variable, have on the whole been good in so far as the menorrhagia is concerned, but most patients are only cured by a dose so big as to cause sterility, and this risk should certainly not be run without profound consideration Radium is generally effective at first, but when it is used there is a tendency for bleeding to recur after an interval of months, though this is by no means common; X rays, on the other hand, may be some time in acting, but a successful result is likely to be permanent This suggests that radium has an effect on both endometrium and ovaries, whereas X rays act on the ovaries alone These methods are simple—perhaps too simple, they are relatively safe and their administration causes the patient very little inconvenience, but they cannot be considered altogether satisfactory, for the ideal of cure must always be the re-establishment of normal function. In this they fail, for sterility is the rule, and too often the symptom treated is replaced by the complex of the menopause Improvement in technique may lead to better results, but the very way in which X rays and radium act suggests difficulties, and a far more useful therapeutic agent would be the chemical inhibitor of menstruation The corpus luteum appears to produce such a substance, but efforts to extract it have so far failed[2] At infection exists, its presence becomes difficult to determine owing to the loss of the agglutination test, bacteriological examination of the fæces alone is a tedious and not very certain business Prevention by inoculation is good, but detection and isolation of infected cases followed often by cure is better Preventive inoculation, in fact, is a valuable weapon in the hands of expert clinico-bacteriological departments which understand its limitations and the disability it produces, but inoculation is a dangerous tool if employed as a royal road to the prevention of any disease in the absence of a clinico-bacteriological department It would appear that, whilst modern sanitary measures will continue to improve the general health of mental hospitals, an equivalent permanent decrease in the prevalence of enteric infections is unlikely until inter-hospital transference of patients is reduced to a minimum and complete separation of healthy from potentially dangerous cases is rendered possible by the provision in every mental hospital of an expert bacteriological department Until this is done certain dangerous enteric infections will necessarily remain latent and unrecognised, liable at any time to become epidemic in their incidence The New South Wales mental hospitals are fortunate in that so far, owing to their isolation and relative youth, they have only had to meet and control typhoid fever, one of the more definite and best-known varieties of enteric infection The rather alarming quotation with which the article by Drs Hogg and Latham commences need not be taken too seriously Dysentery, para-B, and typhoid can at any time become dangerously epidemic in mental hospitals in the absence of expert clinico-bacteriological methods of prevention and treatment, but, granted similar conditions, so can any infectious disease known to medicine

---

[1] THE LANCET July 31st p 219.

[2] A. S. Parkes and C. W. Bellerby: Journal of Physiology, August 6th, 1926

THE METROPOLITAN ASYLUMS BOARD.

The appearance in the month of August of the report of the Metropolitan Asylums Board[1] gives recurrent occasion for an attempt to visualise the work of this body which is remarkable as an instance of evolution Established in 1867 to provide asylum, in the old sense of sanctuary or retreat, for the sick, insane, and infirm from all parts of the metropolis, the burthen of the Board has increased year by year from the imposition of new duties, while the old have never been removed On the side of mental affliction, the large group of harmless Poor-law imbeciles was its first care, to which has been added, as time has gone on, the oversight of feeble-minded (though uncertified) Poor-law children, the charge of sane epileptics, in 1917 the care of cases certified under the Mental Deficiency Act and, quite recently, the responsibility for aged persons requiring institutional treatment owing to mental infirmity On the side of physical affliction, the original group of four infectious diseases, at first limited to Poor-law cases, was extended, owing to the removal by Parliament in 1883 of the penalty of civil disability, to all cases whatever their status, and further by the continual addition of fresh diseases made notifiable to the health authority, of which the most recent are ophthalmia neonatorum and zymotic enteritis The Board is now the central metropolitan authority for dealing with sick and convalescent children and with those who suffer from ophthalmia, ringworm, and interstitial keratitis It trains boys for service on the sea, maintains a far-reaching ambulance service, provides casual wards for destitute wayfarers and foundlings, with a hostel to assist men to regain employment, and implements a scheme for dealing with the homeless poor at night.

The Board to which this vast and almost bewildering task is allotted is composed of 73 members, 55 of whom are elected by metropolitan boards of guardians and the remainder nominated by the Ministry of Health Three of its members at present belong to the medical profession—namely, Dr Ethel Bentham, Sir D'Arcy Power, and Sir William Smith, the two first being nominees of the Ministry For the third time in six years the Board has had to consider its own abdication, for, in common with other guardians of the poor, it received in January last the circular letter from the Minister of Health proposing (in the case of London) to transfer all the work of the Board to the London County Council. As on previous occasions, the Board stoutly asserts the principle of independent existence, contending that the Council would find it impracticable to undertake, in addition to its present duties, the oversight of 145 institutions—accommodating 82,500 persons situated over an area extending from Lowestoft to Littlehampton and from Margate to Wokingham—without surrendering the close contact between work to be done and the public for whom it is done, which has been the policy of the Board The report emphasises once again the importance of a form of management which invokes the voluntary services of a large number of public representatives to supervise the various hospitals and institutions It has fears for the effect of restricting supervision to visitors appointed locally without effective powers or adequate representation, and still more the effect of a system of purely official management In urging this view the Board will, we believe, have the cordial support of a large body of thoughtful persons

During the year under review, while the work of the Board has increased in many directions, a small number of innovations deserve special mention For 15 years past puerperal fever has been admissible to M A B hospitals, and a year ago, acting on a suggestion in Dame Janet Campbell's report, it was decided to concentrate these patients in a smaller number of hospitals where they might have the benefit of skilled nursing and specialist care The Eastern, North-Western, and South-Western Hospitals were selected for this purpose, Mr J M Wyatt, assistant obstetric surgeon to St Thomas's Hospital, being appointed obstetric consultant, and the 50 beds allotted will no doubt be filled as soon as their availability becomes widely known The issue of the new regulations regarding puerperal pyrexia will help in this direction The lines of general and local treatment have been laid down, and it is greatly to be hoped that with the opportunities thus offered for research and treatment something may be done to mitigate the high mortality of puerperal infection where the blood is found to contain septic organisms A second innovation has been the allotment of 100 beds at the Northern Hospital for the observation of children between 3 and 16 years of age who have had an attack of lethargic encephalitis This post-encephalitic unit, which is under the care of Dr S A Kinnier Wilson, is now fully occupied, and even in the short time that has elapsed the transference of such patients from their homes to the atmosphere of the unit has proved highly beneficial The tiresome inversion of sleep rhythm has been surmounted and only one case so far has proved refractory The question of a small hospital unit within the section is now under consideration Other providing a double safeguard against possible neglect of the trifling inflammations which may get well in a day or two, but which may, on the other hand, go on to a frank ophthalmia when it will be the duty of the practitioner to acquaint the local medical officer of health. This information in its turn will reach the county officer. In the actual care of the children, the duties of the health visitor are likely to be supervisory only, except where nursing assistance is not otherwise available; the larger sanitary authorities are advised to employ specially trained ophthalmia nurses; in rural areas it may be found necessary to provide a special nurse or to remove the child to hospital for treatment. One of the difficulties of the problem has been the fact that midwives are sometimes reluctant to call in medical help inasmuch as the fee is recoverable later by the local supervising authority from the mother or her husband, who may retaliate on the midwife. Sanitary authorities are asked to consider whether they should not refrain in future from exercising this power of recovery. In London the suggested arrangements are similar except that the onus for supervision and treatment of the case rests on the borough medical officer, the County Council sending an inspector of midwives to the patient's home but not being concerned further with the conduct of the case. The new regulations, if faithfully carried out, should ensure in the future the early care of sore eyes in the newly born before the inflammation becomes of a serious character.

---

[1] Twenty-eighth Annual Report of the Metropolitan Asylums Board for 1925–26 To be obtained from the Office of the Board, Victoria Embankment, London, E C 4 5s

THE FACTORIES BILL

IN the first week of August the Government's Factories Bill was published as promised. It is intended that the various trades and industries concerned shall have an opportunity to examine it during the autumn, to reach some measure of agreement if possible upon disputed points, and to make representations to the Home Office upon points where modification or explanation is desired. Our Parliamentary correspondent summarised the main provisions of the Bill in THE LANCET last week, when we took occasion to indicate its general lines of policy without exhausting the medical questions raised. The Bill, it may be further stated, declares that women and young persons must not work more than 4½ hours without a break of half an hour for a meal; they must not work more than 10 hours a day or 48 hours a week, nor before 6 A.M., nor after 8 P.M. during the week or 2 P.M. on Saturdays. As a concession to employers who have urgent contracts to fulfil, 100 hours overtime is to be permitted in the year, provided that not more than six hours overtime is worked in one week. The continued employment of young persons under 16 in factories is to be subject to a medical certificate of fitness for such employment after examination by appointed doctors. District Councils are to be given some control of the conditions of home work. They can notify the occupier of a factory or any contractor employed by him that the place where home work is done is "injurious or dangerous to the health of the persons employed therein." The person thus notified is then liable to a penalty of £20 if he gives out any work to be done in that place unless he can satisfy the magistrates that the place is not in fact injurious or dangerous to health. Among other health provisions of the Bill are a general duty to keep factories clean and free from effluvia, and a requirement to wash or re-colour all ceilings and interior walls every 14 months. There are special directions as to the carrying away of injurious and offensive dust and noxious fumes. Factory inspectors will have power to prohibit underground workshops, and basement bakeries will be prohibited save where they already exist. Provision will be made against spitting. Welfare of workers will be promoted by requirements as to drinking water and as to seats for women. First-aid facilities must be furnished. Safety provisions include fire escapes, the fitting of steam boilers with valves and gauges to avoid explosions, and belt and rope equipment for persons who have to enter places where there is danger of being overpowered by fumes, unless adequate mask apparatus is used. The normal penalties under the Bill are limited to £20 fine or £5 a day for a continuing offence. Where death or injury occurs through the factory owner or occupier's neglect to comply with the new legislation, a fine of £100 may be inflicted, which may be applied by way of compensation. Though the Bill will not please everybody, there seems nothing which cannot be made acceptable by modification and a reasonable spirit of give and take. Politics hardly enter into its consideration, for the Bill is the result of the work of successive administrations, and no party could hold office without undertaking to improve and reform the present state of the law.

AN ENCYCLOPÆDIA OF NUTRITION.

CONTEMPLATION of the subject of nutrition brings to light in a surprising manner the number of different branches of science and literature with which it is intimately related. It may be that the catholicity of nutrition, in subserving the most fundamental function of plants and the most primitive instinct of animals, has as yet hardly received articulate recognition. The remarkable work which Prof. Mayerhofer, of Zagreb, and Prof. Pirquet, of Vienna, have now completed[1] cannot fail to arouse in the reader a recognition of the limitless applications of the subject, as well as a lively admiration for the amazing industry and enterprise of the authors. The work has appeared in five instalments and takes the form of a miniature encyclopædia, comprising articles of greatly varying length on almost every subject directly or indirectly related to the nutrition of man or beast. The student of history, anthropology, agriculture, zoology, medicine—to mention a few only—will find in it a wealth of information on his particular specialty. The form of the articles is admirable, space being well apportioned according to the relative interest of the subjects, and in general the shorter notices are examples of successful condensation. Among the articles of historical interest which appeared in the earlier instalments were those on cannibalism, fishery, and the nutrition of primitive races. The final volume includes an essay on the ancient history of nutrition written mainly from the ethnological point of view. An exhaustive article on vitamins deals with both the chemical and physiological characters of these bodies and their relative occurrence in various articles of diet. A notable feature of the book, which adds greatly to its usefulness, is an appendix in which is set out a full analysis of over 300 foodstuffs, with the caloric values of the principal constituents of each of them. Every well-equipped library will find a place among its works of reference for this original volume.

PROSTATECTOMY.

IN a recent lecture[2] at St. Bartholomew's Hospital Prof. Hugh Cabot described suprapubic prostatectomy as foolproof, and on this ground commended it to the occasional prostatic surgeon. He made it very plain, however, that uniform success in the treatment of enlarged prostate can only follow a clear understanding of the risks of operation and the management of every patient according to the individual problems he presents. Prostatectomy, as he pointed out, is unlike the ordinary clean surgical operation because, in addition to the insult of the operation itself, it involves the risk of upsetting the renal function and seriously infecting the urinary tract. The symptoms due to enlarged prostate are, generally speaking, those of obstruction; this obstruction may have been going on for years; the kidney has been working against more or less continuous back-pressure, and when the obstruction is removed the all discussions of uterine hæmorrhage the need for a standard nomenclature becomes evident The terms proposed by Prof BECKWITH WHITEHOUSE were generally approved at the Nottingham meeting, and we take this opportunity of drawing attention to them.

---

[1] Prof. E. Mayerhofer und Prof. C. Pirquet: Lexikon der Ernährungskunde. In five instalments costing 5.20, 7.00, 12.00, 12.50 and 16.50 Mk. respectively. Total 1206 pp. Vienna: Julius Springer. 1923 to 1926.

[2] St. Bartholomew's Gazette, July, 1926.

Annotations.

"Ne quid nimis."

THE CINEMA AND THE CHILD

IN his annual report to the County Borough of Croydon Dr H P Newsholme makes some important suggestions concerning the influence of the cinema upon character formation in the child Hitherto this influence has been considered as affecting the conscious mind of the child, but Dr Newsholme believes that the circumstances in which the film is seen—the darkness, the quiet, the sense of expectancy among a crowd intent on the same object; the concentration of the one active sense, sight, on a very bright clearly defined patch of flickering light—all favour an actual hypnotic condition, particularly in the introspective type of child The emotional content of the film message may thus become sunk in the subconscious mind, to affect the reactions of the child in the many ways that such buried material is known to do As an illustration he notes the case of a girl, already sensitive, introspective and backward, who saw a film of high "artistic" merit depicting scenes of war and desolation; from the moment of seeing the film she presented a fundamental alteration of character involving periods of extreme mental confusion amounting almost to stupor She is now under treatment, and it may be noted that modern methods of treating a patient of this kind, if she is accessible to mental exploration, should establish and account for the connexion between the picture story and the mental state that ensued upon seeing it It is, in fact, the function of psychopathologists to bring such a hypothesis as Dr Newsholme's to the test of experience. The effect of the cinema has not escaped them, for it has been noted that the cinema has a possibility of stimulating so many unpleasing emotions that it serves as a touchstone to morbid anxiety The darkness, the crowd, the confinement, and the emotional stimulus of the pictures themselves rarely fail to find a weak spot in the anxiety patient, who therefore usually avoids them If an individual child is an actual or potential sufferer from morbid anxiety it does not require a hypnotic condition to produce results which the adult sufferer, wise in his generation, has learnt to avoid

It is probable that whatever harm is done by the cinema is on the unconscious rather than the conscious plane Suggestions which are recognised are satisfactorily dealt with in consciousness—one may doubt whether the portrayal of crime does more than determine the manner of its performance by a person already disposed to it But the ill-effect of 'suggestive" films, perhaps allowed in the trustful belief that the child will not understand, can arise in the very lack of understanding, for they may stir up that compound of shame, fear, and curiosity which so often exists in the childish mind At a deeper level lie unconscious tendencies that are beyond the purview of those who recognise only the world of consciousness, and if the censoring of films were entrusted to someone with psycho-analytical knowledge it is probable that a good deal would be excluded which now escapes question Themes of cruelty, for example, or of dominance or submission, would be suspect through the danger, by a blend of fear and fascination, of stirring up sleeping dogs that might never give trouble if left undisturbed The popularity of the film depends upon the ease of its emotional appeal as compared with the appeal of the written or spoken word, and it is a sound principle in child-training to allow adequate and useful expression to emotion whilst avoiding unnecessary or excessive stimulation The problem of the nervous child involves as much unhappiness and inefficiency as does that of the delinquent child, and the dangers of the cinema lie more in the nervous results of excessive stimulation than in any incentive to delinquency Dr Newsholme's essay upon the psychopathology of the films, which he feared might be regarded as remote from the matter proper to a school medical report, thus has a practical and immediate bearing upon the well-being of the child

OPHTHALMIA NEONATORUM

THOSE who study the Registrar-General's returns from week to week will have seen that hardly a week passes without 100 or more cases of ophthalmia neonatorum being brought to the notice of sanitary authorities in England and Wales, and hardly any annual report of a county health officer fails to record permanent impairment of vision in one or both eyes of some of the children thus notified During last year 186 new-born babies suffering from ophthalmia were admitted to St Margaret's Hospital from the metropolitan area, of whom 10 died, 4 became completely blind in one eye, and 20 others were left with impaired sight, and this in spite of every advantage of skilled medical attention and nursing The Scottish Board of Health two years ago, in calling attention to the serious amount of blindness still being caused by this disease, stated that in their opinion few if any cases could be treated at home with safety The Scottish health officer was advised to ascertain through his health visitors or visiting nurses the progress of these babies from day to day, in order that hospital treatment should be commenced as soon as the disease showed any tendency to become serious In London only about one-third of the cases notified reach St Margaret's Hospital, and on the average not until the ninth day of the disease when corneal ulceration may already have developed At a representative conference held in London four years ago it was agreed that one of the factors leading to delay in treatment was the dual control of midwives who are at present required to notify the case to the borough medical officer of health (when they believe that this has not been done by a medical practitioner), and also to inform their own supervising authority The circular[1] issued last week by the Ministry of Health states the decision of the Ministry to place the duty of notification solely upon the medical practitioner in charge of the case Under the new arrangement the midwife will only have two duties, on observing any inflammation of or discharge from the eyes she will, first, call in a medical practitioner and, secondly, will send word to her immediate supervisor in the midwife service—namely, the county medical officer Here her statutory responsibilities end On being summoned to see the child it is the duty of the medical practitioner to consider whether the case is or is not one of ophthalmia neonatorum If his diagnosis is negative he need not notify anyone, but the public authorities will nevertheless be aware of the case because the midwife has informed the county medical officer (in the capacity of her supervisor) that the eyes were sore and that she called in a doctor to see them On receiving this information the county medical officer, besides taking steps to find out whether the midwife ought to continue her work, will also arrange—either directly or through the local medical officer of health—that the resources of the child welfare service shall be available in case of need The officer in charge of child welfare will send a health visitor to visit the home and ascertain the conditions there, and will communicate with the medical practitioner so as to find out whether nursing or other assistance may be wanted This somewhat complicated circle thus comes back to the practitioner, up the interesting question how far group appeals are desirable Advertising in the newspapers is so expensive that the average hospital generally cannot undertake it "Such coordination of appeals," says the year-book, "as has been found by experience to be successful is on the less ambitious lines of St Marylebone Hospitals League and the Sheffield Joint Hospitals Council" It is hardly necessary to make any further recommendation of a book that has long been regarded as comprehensive and accurate, but we are glad to have an opportunity of bringing it to the notice of any reader who does not know that information about hospitals is available in this convenient form

---

[1] Ministry of Health, Circular 617 (London), 617 A (Outside London) H M Stationery Office 2d

ERRORS OF JUDGMENT IN CHEMICAL ANALYSIS

AT a recent meeting of the Society of Public Analysts Dr J F Tocher described[1] the results of an investigation into the nature of the variations of the results of determinations in chemical work, which in the main confirms the views put forward by Egon S. Pearson[2] concerning the existence of a secular movement for each observer when observations are made day after day, and also a sessional movement within a single series of observations made in one day The experiments were carried out in three series as follows (1) weighings of a sovereign by students to illustrate the want of sufficient experience, skill, and adequate training, (2) weighings of a piece of lead by skilled workers, and (3) determinations of the concentration of approximately 0 5 N sodium hydroxide solution to illustrate variations in volumetric work by a skilled worker An important psychological factor was brought out by a calculation of the mean values for succession of observations for a forenoon, the so-called sessional movement thus revealed was shown to be irregular but periodic in character—a result which is at variance with the usual assumption that, for an observer in normal health, variations in personal judgment are due to accidental errors and may be taken as randomly distributed in accordance with the law of frequency described by the normal or error curve The foregoing observations are of quite a preliminary character, and more numerous and properly conditioned experiments are required to show definitely the nature of the variations in personal judgment in chemical work Variations in the quality and quantity of indicator used and environmental factors would have to be taken into consideration, and several directions for future work are outlined in the paper Some of Dr Tocher's deductions did not pass without criticism in the discussion which followed his paper

THE SALMONELLA GROUP.

IN a report[3] just issued by the Medical Research Council Mr Bruce White B Sc, tells the story of his investigations upon the Salmonella group of micro-organisms from the stage at which it was left in Report No 91, published in 1925, in association with Dr W G Savage The two together represent the most extensive study yet published of the serological and other differences exhibited by the different members of this group The subject is one of great complexity which becomes more complicated with the discovery of fresh types and of the fact that many of these types can and do exist in different phases Further confusion arises from the varied nomenclature used by different workers in this and other countries and from the fact that the various experimental methods employed are not always comparable Mr. White's patient and laborious studies have thrown much light upon the relationships of these different types

The first section deals with the interrelationship of the Suipestifer-Hirschfeld type a large number of strains from various sources being serologically compared Relying mainly upon serological characteristics, but also allowing weight to cultural and biological characteristics, Mr White recognises four subtypes, which at present and tentatively he finds can be grouped according to their geographical predominance as (1) American, (2) Eastern (the Hirschfeld type), (3) Western European, (4) Glässer-Voldagsen subtype which is also European The subtype (1) so far has only been found in swine in America, the Hirschfeld type only as a cause of human diseases in the East, subtype (3) has been found in paratyphoid fever and food poisoning in man, but also occurs in infections in the pig and monkey The Glässer-Voldagsen strains have only been found as a cause of disease in swine on the European continent The whole group probably represents a type which is undergoing divergent evolution along several lines, modifications arising rather by suppression of certain characters—e g, dulcite fermentation—than by divergence by the development of new properties Dealing with some of the other Salmonella types it may be noted that a new type, "Type L," is described, obtained from a food poisoning outbreak at Reading, while the type mentioned as Breslau, and much referred to in German literature, is definitely identified with the Aertrycke type of English bacteriologists

A large section of the report is taken up with a study of serological variation in the Salmonella group The subject is complicated by the fact that three important and distinct forms of serological variation are found to occur within the group One of these is the "rough" variation from the smooth parent organism, a modification to which the author attaches great importance A second variation is that of the "H" and "O" forms which are related to heat-labile and heat-stable receptors The third is the occurrence of two phases, the specific phase and the non-specific phase, as originally described by Sir Frederick Andrewes Very numerous experiments are described which throw much light upon these variations and the relationship between them The "H" and "O" forms are of considerable practical importance since each group of receptors labile and stable respectively stimulates in the animal body its own special agglutinins to which and to which alone, it reacts in its own characteristic way The types of agglutination deposits are different—i e, floccular and granular In a very clear and interesting account of the literature of this type of variation the author brings the studies upon flagellar and body agglutinins into line, and gives grounds for believing that these agglutinins are coincident with the "H" labile and "O" stable antigens as originally described by Weil and Felix

Sections III and IV deal with further observations on the antigenic structure and relationships of the Salmonella types They contain a very large number of observations based upon an immense mass of experimental research Most of them deal with the serological relationship of the known types The puzzling relationship of *B typhosus* serologically to the Stanley type of Salmonella was studied, and Mr White reaches the conclusion that it does not seem possible to exclude *B typhosus* from the Salmonella series *B morbificans bovis* is recognised as a special type The fowl typhoid types (*B sanguinarium* and *B pullorum*) have hitherto been regarded as outside the true Salmonellas, but the author concludes that these are degenerate strains but of true Salmonella ancestry and must be included

Section V deals with the phylogeny and classification of the Salmonella group Mr White approaches them from an evolutionary standpoint and relies mainly upon serological characteristics, giving but little weight to cultural and biological behaviour. While much of this discussion is theoretical it is justified by the massive array of experimental work and at least gives some coherent view of the relationship of the different members of the group As an example of his methods it may be mentioned that since, for the types which exhibit "specific" and immediate result is a decompensation which is followed immediately by congestion of the kidney and important interference with the secretion of urine This is shown, as Prof Cabot remarks, by the sharp drop in renal efficiency almost always noticeable in the first few days after drainage has been started—a drop which sometimes suggests that the kidney's condition has been made worse rather than better by relieving the obstruction Following decompensation there is infection to be reckoned with, this is the second of the operative risks "There is, I think, no method," says Prof Cabot, "by which infection of a urinary tract hitherto uninfected, which has been subject to obstruction and back-pressure, can be avoided . and in the case of the infected patient you must probably face an increase of infection" To drain the bladder and remove the prostate at one sitting, thus lays a patient open to the effects of decompensation and infection immediately after the insult of operation, and to this practice is attributable, he considers, the mortality of 25–30 per cent which good surgeons recorded a quarter of a century ago Nowadays it is recognised that where a patient's condition is shaky, the three blows should be inflicted at such intervals that he can withstand them separately; this is done, of course, by draining the bladder some weeks or months before going on to remove the prostate Such drainage can be effected by a preliminary cystotomy or by means of a catheter In a paper[3] based on over 500 cases Prof G de Ilyes, of Budapest, recently declared his general preference for the tied-in catheter on the ground that openings into the bladder maintained over a long period give rise to perivesical adhesions which are troublesome when the prostate is being removed later Prof Cabot, on the other hand, condemns the catheter, because it is apt to give only obstructed drainage, which is probably worse than no drainage at all In about half the cases, he says, the tied-in catheter is unsatisfactory, either it is gravely uncomfortable or it does not drain This failure may be due to the peculiar conformation of the neck of the bladder, which makes the vesical end of the catheter stick straight into the air, or it may be due to intermittent plugging of the opening into the catheter by pus or muco-pus from bladder or kidney In a proportion of cases the bladder, ureters, and renal pelvis form a continuous canal, and obstructed drainage means a constant backwash and transference of vesical infection to the kidney in a way which destroys the results of drainage, there is always the chance, moreover, that pressure of the catheter against the middle lobe of the prostate will cause ulceration—an uncomfortable and even disastrous complication From this Prof Cabot concludes that suprapubic drainage is desirable; it is easily performed, if necessary under local anæsthesia, and causes little upset to the patient Renal decompensation follows, and afterwards infection, but not immediately This infection he regards as not wholly objectionable, so long as it is separated from the actual operation of prostatectomy Removal of the prostate without preliminary drainage inevitably leads to infection of the upper urinary tract, but if infection has previously been incurred the patient has probably got a temporary immunity which will ward off the dangers following prostatectomy itself

---

[1] Analyst July 1926

[2] Biometrika 1922, xiv, 23–102

[3] Special Report No 103, H M Stationery Office 1926 5s

These, then, are the main advantages of preliminary drainage, and they certainly suggest its employment in all cases where the result of a one-stage operation is at all in doubt To decide definitely whether such drainage is necessary, and on the time it must continue, it has first to be ascertained what is the renal efficiency and also what is the general health of the patient Various tests of renal function are available; their merits are still in dispute, but what is important is that a surgeon or pathologist should get to know the significance of those he employs Dr J Marrack and Dr S Robinson, of the London Hospital, give an interesting account in our present issue (p 369) of comparative results of estimating blood-urea, urea concentration, and excretion of phenolsulphonephthalein; their results indicate especially the value of finding out the blood-urea content, the urea-concentration test being useful as a supplement On the other hand, as has also been shown by I Cohen, E C Dodds, and Shorney Webb,[4] a low urea content in the blood cannot always be regarded as an indication that renal function is normal, and these investigators came to the conclusion that the non-protein nitrogen content and uric-acid content of the blood were the most reliable guide to prognosis Their figures indicated that the upper limit of safety for a one-stage prostatectomy was 50 mg. per 100 c cm for non-protein nitrogen and 3 5 mg per 100 c cm for uric acid Where the amounts were higher they recommended preliminary cystotomy Such drainage, if the patient survives, generally improves the renal efficiency, and the question then arises How long should it be continued? Prof. Cabot answers this by saying that drainage should continue until the patient's renal function is as good as it will become That is universally less than what is regarded as normal function, partly because a great many of the patients are about 70 years of age. When the efficiency has become stable it may be assumed that the optimum has been reached; function will sometimes improve, slowly at first, until the kidney is working fairly well—better perhaps than it can continue to work, but as long as the efficiency is still variable it is unwise to finish the operation In the average patient, who has not had prolonged retention, who has little residual urine, and whose urinary tract is already infected, two or three weeks' drainage will probably be enough The patient with uninfected urine should have six or eight weeks to get over decompensation and to acquire a moderate chronic catarrhal pyelitis But in those cases in which renal function has been seriously impaired it may be necessary to continue suprapubic drainage for months, or even years, until the patient has got over his period of low renal function so far as he can

HOSPITALS AND CHARITIES

A PREFACE to the 1926 edition of "Burdett's Hospitals and Charities"[5] states that changing conditions have made it possible to reduce some of the sections and have allowed the inclusion of more interesting facts This year-book, which was founded by the late Sir Henry Burdett and is now in its thirty-sixth year, contains nearly 1000 pages of information about hospitals and allied charities throughout the British Empire The early chapters are devoted to the great funds and organisations, and there is an interesting discussion on hospital advertising by way of introduction Especial reference is made to the St Marylebone Hospital League and to the Sheffield Joint Hospitals Council, of which it is remarked "Both enterprises are much more than agencies for raising money, and are successfully organising hospital work no less than income in their respective areas While making hospital contributions as nearly universal as possible, they are coordinators also, and, looking beyond finance, they help and educate their members in the benefits as well as in the duties of civic responsibility" From the successes and failures of the appeal for funds made last year by the Westminster Hospital the moral is drawn that an appeal campaign should be concentrated and intensive, and that advertising is almost useless without the support of every other kind of stimulant, in letters, on posters, on the screens of cinemas and theatres, and, if possible with some sporting or cumulative effort Mutual cooperation between hospitals issuing appeals is absolutely necessary, they must warn each other of their plans, and this brings

---

[3] Archives des Maladies des Reins, June 1st, 1926

[4] British Journal of Surgery vol xiii, No 52

[5] Burdett's Hospitals and Charities 1926 London The Scientific Press, Ltd, 28 and 29, Southampton street, Strand, W C Pp 990 17s 6d

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CLXXXVI

THE TREATMENT OF ACUTE IRITIS.

It may appear a truism to state that the first and most important step in treatment is accurate diagnosis, but nevertheless in dealing with the question of acute iritis this point must be particularly stressed, since in this case a mistaken diagnosis may lead to one of the gravest possible errors of treatment Patients with either acute iritis or acute glaucoma complain in the first instance of redness and pain in the eye accompanied by disturbance of vision It is of paramount importance to distinguish between the two diseases since their treatment is diametrically opposed and in either case injudicious treatment may be fraught with the most serious consequences

Differential Diagnosis

Acute iritis may be distinguished from acute glaucoma by means of (1) the condition of the pupil, (2) the depth of the anterior chamber, (3) the intraocular tension, and (4) the subjective symptoms

1. *The condition of the pupil* is of the utmost importance. In iritis the pupil of the affected eye is smaller than that of its fellow It reacts sluggishly (and often irregularly) to light In glaucoma the pupil is semi-dilated, usually vertically oval in shape, and absolutely immobile

2 *The anterior chamber* is deep in iritis and very shallow in glaucoma

3 *The intraocular tension* is variable in iritis It is usually slightly raised and becomes higher the greater the involvement of the ciliary body—i e, in iridocyclitis In glaucoma the eye is stony hard The estimation of the intraocular tension, especially in painful eyes, requires a certain amount of practice and experience, but the extreme hardness of the glaucomatous eye can usually be appreciated with ease.

4 *Subjective symptoms*—In acute iritis the pain is referred to the eye and to the region of distribution of the ophthalmic division of the fifth nerve only In glaucoma it is much more severe, often spreads to the areas supplied by the second and third divisions of the fifth and may be accompanied by vomiting and collapse Disturbance of vision in iritis depends directly upon the degree of turbidity of the aqueous and is seldom reduced below 6/18, while in glaucoma it is seriously impaired, appreciation of hand movements or even perception of light only being present.

Other signs of iritis, such as posterior synechiæ (adhesions of the iris to the anterior capsule of the lens), greenish discoloration of the iris, turbidity of the aqueous, &c, may be immediately obvious and will clinch the diagnosis, but they may be hard to discover without elaborate methods of examination In some cases of acute iridocyclitis with raised tension and œdema of the cornea, the diagnosis may be one of extreme difficulty, and the recent improved method of focal illumination by means of the slit-lamp[1] and binocular microscope may be employed with advantage, since it will show definitely the presence or absence of even a slight amount of aqueous haze or a few minute deposits on the back of the cornea

The question of diagnosis being settled in favour of iritis, the treatment must be carried out thoroughly if serious complications are to be avoided In all cases an attempt should be made to ascertain the cause, since treatment to be efficient must be general as well as local[2]

Local Treatment

The objects of local treatment in iritis are three· 1 To dilate the pupil so that the risk of adhesions forming between the iris and the anterior capsule of the lens is reduced to a minimum 2 To place the iris and ciliary body at rest 3 To relieve the congestion and pain

Mydriatics

A mydriatic should be instilled into the affected eye as soon as possible A 1 per cent solution of atropine sulphate is most commonly used, but in severe cases an ointment containing 1 per cent or 2 per cent of the pure alkaloid may prove more efficient, as it is easier to apply, and its action is more continuous The atropine must be pushed until full dilatation of the pupil is obtained, after which it is only necessary to maintain this condition. In obstinate cases it is better to increase the frequency of the application (every two to three hours will usually be sufficient) rather than the strength of the preparation, though occasionally it may be necessary to make a single application of a small particle of solid atropine This should always be done by the surgeon himself, who must see that the patient keeps the lachrymal passages occluded with the finger during its action, otherwise severe symptoms of poisoning may result There is little risk of poisoning with the 1 per cent. ointment, though a fair number of patients will complain of dryness of the throat after it Watch must also be kept for signs of "atropine irritation" which may come on in susceptible individuals after a day or two, usually not immediately It is characterised by extreme congestion of the conjunctiva with œdema and redness of the skin of the lids, often spreading to the cheek and resembling erysipelas If it occurs some other mydriatic (hyoscine, scopolamine, or duboisin) must be substituted and the affected skin treated with a cooling preparation such as zinc ointment or calamine lotion

The Application of Heat

The use of a mydriatic alone often does wonders in decreasing pain and congestion, but it is usually wiser to combine it with the application of some form of heat The simplest form of hot application is the fomentation, but this needs to be very frequently changed and is apt to produce a sodden condition of the lids. It is, therefore, better that the patient should bathe the eye thoroughly with boracic lotion as hot as can be borne for a quarter of an hour at a time every three to four hours covering it in the intervals with a heated pad of dry sterilised wool. This hot bathing can be most efficiently carried out by means of an ordinary wooden spoon, the bowl of which is covered with lint The patient dips this in a basin of hot lotion and applies it to the closed lids, repeating the process and adding more boiling water as the lotion cools If preferred, dry heat alone may be employed. For this purpose a Japanese muff warmer will be found invaluable It can be lightly bandaged over a pad of wool placed on the closed lids and will keep hot for a considerable period

Leeches

In cases where there is much hyperæmia and severe pain a couple of leeches may be applied to the temple just behind the external angular process The bleeding may with advantage be encouraged by warm sponging after the leeches have dropped off Relief is considerable and almost immediate.

General Treatment

Every effort must be made to ascertain the cause Syphilis, gonorrhœa, rheumatism, gout, diabetes, and tubercle must be considered Occasionally the appearance of the eye may give a clue to the cause In syphilitic cases there is a good deal of exudate and a tendency to the formation of broad synechiæ Iritis of this type is most common in the secondary stage, and a search should be made for accompanying skin lesions and faucial ulceration. In the tertiary stage a gummatous iritis may occur with localised nodules on the iris In the rheumatic and gonorrhœal types (which may be difficult to differentiate) the exudate is less dense and has a greyish gelatinous appearance A tuberculous iritis alone is rare, it is usually accompanied by a cyclitis Pain is not a marked feature but dimness of vision may be severe owing to the presence of cellular deposits on the back of the cornea (K. P.).

---

[1] T Harrison Butler Clinical Use of the Slit Lamp THE LANCET August 14th 1926

[2] Traumatic iritis due to direct infection through a perforating wound is not here dealt with, nor is the iritis of sympathetic ophthalmia.

"non-specific" phases, all are inter-agglutinable freely in the non-specific phase, this can only be attributed to the existence of a common factor or group of factors running through the entire series of types named, but unknown elsewhere In the distribution of the other non-specific factors there is much irregularity, but everywhere overlapping occurs which welds this series of types together into an intricate but compact system From these facts he accepts the series of diphasic types as derived from a single ancestral source The monophasic types offer greater difficulties but show definite general evidence of relationship Both monophasic and diphasic types show sound agglutinative evidence of true relationship to one another, and the grouping, originally on cultural grounds, is sound It is of interest to note that the *B enteritidis* type is considered as the most primitive of known Salmonellas and that the others branched off from this strain

As Mr White points out, a deeper study of antigenic relationships, far from suggesting a rational method of subdividing the group, has proved more than ever destructive to such an idea Several forms hitherto excluded have had to be included and the varieties in the group are more complicated than ever His final, but still tentative classification, is as follows —

Meta-Salmonella Types—Pullorum and Sanguinarium.

Monophasic Series—(1) Paratyphosus A, (2) Typhosus, (3) Enteritidis, (4) Derby, (5) Abortus Equi, (6) Dar-es-Salaam

Diphasic Series—(1) Paratyphosus B, (2) Stanley, (3) Aertrycke, (4) Newport, (5) Morbificans Bovis, (6) Reading, (7) Sendai, (8) Suipestifer-Hirschfeld

Some may feel that theoretical conceptions of this kind as a basis for classification are out of place or at least premature It is, however, quite certain that the present welter of unconnected facts and observations about members of a large group of bacteria is not likely to be diminished until some coherent scheme of relationship is established between their different members, and to evolve such a scheme an evolutionary basis is probably the most helpful

A MODERN PILGRIMAGE

THE Order of the Hospital of St John of Jerusalem, though fallen in some measure from its former high estate, yet continues in the body of the Grand Priory of England to carry out the precept of the first Master of the Order, the blessed Raymond du Puy, to the effect "that the Knights who should make their profession in it should adorn their Knighthood with a true Charity, the mother and solid foundation of all Virtues" Apart from its great work in organising first-aid and ambulance, the Order maintains an ophthalmic hospital at Jerusalem After the Great War the members of the English Priory were anxious to visit the ancient homes of the Order in Jerusalem, Rhodes, and Malta, and the various scenes of the doings of the Order in the East, an official pilgrimage was therefore arranged leaving Venice by sea on March 4th last and going by way of Jerusalem and Haifa to Cyprus, Rhodes, Malta and so back to Venice They had an extraordinarily interesting journey and Colonel King gives an excellent account of it in an official journal now published [1] It should be of interest to compare the accounts of their comfortable journeys with that given by an earlier pilgrim to the Holy Land The unhappy Father Felik Fabri described his sufferings on the galley about the year 1480 in the vivid phrase· "Multis noctibus fui, quod nunquam clausi oculum" The most striking episode of the recent pilgrimage was the corporate communion of the pilgrims in the ancient conventual church of the Order in the Muristan It dates from the sixth century and is now known as Mar Hanna, which should be a Syriac title Colonel King gives an admirable photograph of the interior of the building Everywhere the pilgrims met with courtesy and unbounded hospitality, and the journey must have left unforgettable memories

TUBERCLE-FREE MILK.

To ensure that a herd of cows shall supply milk free from tubercle bacilli it is necessary to eliminate all those animals which react when tested with tuberculin. Unfortunately, this is a troublesome and expensive thing to do The extra cost of the tuberculin-tested cow varies, of course, in different places and under different conditions, but the estimate of £2 5s per annum, given a few months ago at Reading,[1] is probably not too high. The average loss on every cow that reacts positively and has to be got rid of may be taken as somewhere about £10, and strict precautions must be taken against infection, so that unless there is a large demand for Certified or Tuberculin-tested milk the farmer may find his adventure into hygiene somewhat unremunerative It has its compensation, however, in a lessened morbidity amongst the animals, and the number of tubercle-free herds in this country is steadily increasing We learn with regret from Sir John Robertson's annual report on the health of Birmingham that during 1925 the number of such herds included in the Birmingham tubercle-free scheme fell from 24 to 22 Even where a good market is assured the farmer's difficulties do not end with the removal of reactors from his herd, for he is faced with the necessity of keeping up the number of his stock, which can only be done by breeding within the herd or by importing fresh blood Opinion differs as to the qualifications required of an animal before its introduction into a tubercle-free herd Some authorities consider that it should be kept apart until it has been tested, quarantined for six months, and again tested with negative result, this is perhaps a counsel of perfection and is certainly a costly proceeding Prof. G H Wooldridge, at the Reading conference, advised a medium course and said that no animal should be admitted straight into the herd unless it comes from another tubercle-free herd, and that in general one month's isolation is needed in case the cow, although not at present reacting to tuberculin, should be suffering from infection as yet undeveloped Most of the troubles of owners, he remarked, were caused by cows being given the benefit of the doubt Under the Birmingham scheme 15 of the herds are maintained by breeding, but even here constant vigilance is necessary, and last year seven of them had reactors at the half-yearly tests It must be remembered that cattle long kept away from all tuberculous infection are likely to lose their immunity and may become so susceptible as to succumb at the first opportunity This problem seems to present epidemiological problems for further study At the present time tubercle-free herds are comparatively rare, and nearly all milk is derived from herds which have not been tested, but more and more care is being taken to discover and remove cows which are supplying frankly tuberculous milk In Birmingham, of 681 samples examined 52 were found to be infected with tubercle bacilli, and in most cases the offending animals were followed up and slaughtered The Tuberculosis Order, which came into force on Sept 1st, 1925, has been helpful in securing the elimination of these cows because it provides some means of compensating their owners The technique employed for the discovery of infection seems to be variable, for the results of sampling in different areas are remarkably different In the annual report of the medical officer of health for Glasgow for instance, it is stated that 360 samples of mixed milk from road and rail transport and from milk supplied to the hospitals were examined for tubercle bacilli without any being found, which suggests an improbable superiority over milk in the Birmingham district transport of dead bodies to the Holy Places in Mesopotamia, and of the Hejaz Railway The disappearance of an efficient international organisation, aimed at checking the spread of disease by those various channels, and its replacement by a purely Turkish body, must naturally raise the question whether the health of Europe may not be seriously menaced by the change The menace is, perhaps, considerably less serious than it would at first sight seem to be, for, *with the vast territorial changes* brought about by the war, the task of the present Turkish sanitary administration has been immensely reduced and simplified, both as regards the area for the sanitary supervision of which it has assumed responsibility and the problems which it will have to solve The two Moslem pilgrimages, Sunni and Shiah, no longer take place on Turkish territory, the Hejaz Railway has passed to other Powers; the majority of the large lazarets (such as those of Basra, Khanikin, Camaran, Jeddah, Clazomene) and health offices that the Board administered are now administered by the sanitary authorities of various other countries Briefly, indeed, the principal—almost the sole—really important charge laid on the *present Turkish Administration is that of applying* measures in the Straits (Bosphorus, Sea of Marmora and Dardanelles), and we have little doubt that this question will continue to engage the attention of the permanent international health bodies of Geneva and Paris

---

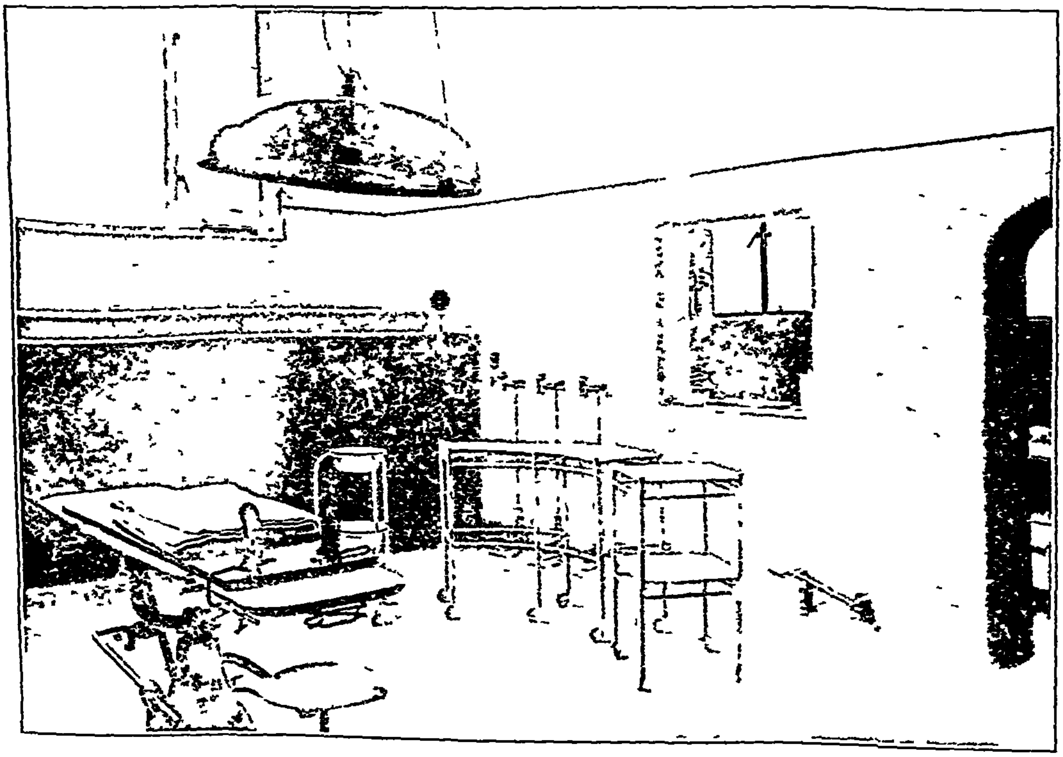
[1] The Pilgrimage of 1926, being the Official Journal of the Knights of St John. By Colonel E J King, C M G With an introduction by Major-General the Earl of Scarborough, G B E, K C B, Sub Prior London St John's Gate 1926 Pp 144

[1] THE LANCET, 1926, i, 777

A MODERN OBSTETRIC THEATRE

PART of a theatre on the fourth floor of the new Obstetric Hospital presented to University College Hospital by the Rockefeller Foundation and opened last June is shown in the accompanying photograph

On the extreme right is seen a doorway into the theatre sterilising room, where there are sterilisers for bowls, instruments, hot and cold water, and saline solution The outlet pipes for water and saline run through the wall into the theatre where the supply is regulated by pedals, the taps and regulators are seen to the left of the hatch or window in the dividing wall The two instrument sterilisers are placed at the level of this hatch, and by means of the pedal just below it the covers of the sterilisers can be raised and the instruments taken through the hatch by those in the theatre, which makes it unnecessary for anyone to pass in and out of the theatre during operations Ventilation is so arranged that the steam from the sterilising room is drawn out through the roof and does not escape into the theatre The main dressing steriliser is in a separate room and all the sterilisers are heated with steam from the main boilers Near the theatre is a washing-up room for the surgeon and assistants, whilst anæsthetic and recovery rooms open out of the theatre itself There are two galleries for the use of students, who gain access to them from the floor above and not through the theatre itself One of them is on the theatre floor level immediately below the north window and is seen to the left of the photograph. The other is higher up and has a plate-glass screen cutting it off from the main theatre At the end of the gallery will be seen one of two movable projection lamps on a ball-and-socket joint for illuminating the field of operation in the lithotomy position For general purposes the theatre is lit by flush ceiling lights, whilst for operations the Scyalitica shadowless lamp hung from the centre of the ceiling is used The floor is made of marble terrazzo paving, and the walls, up to the height of 8 feet, have a light green Biancola marble finish; above this enamel paint is used The junction between walls and floor is rounded



NEW OBSTETRIC THEATRE AT UNIVERSITY COLLEGE HOSPITAL.

The age of the patient may be of some assistance An iritis occurring in infants is almost certainly syphilitic in origin Tubercle is more common in adolescents, while acquired syphilis and gonorrhœa usually make their appearance between 20 and 40, and gouty and diabetic cases often occur in later life In all doubtful cases a search should be made for septic foci—e g , teeth, nasal sinuses, tonsils, &c

In all cases treatment should commence with a sharp purge, and attention to the bowels should be continued throughout the attack The patient should be confined to the house, and if possible to bed Aspirin should be given for the relief of pain It is seldom necessary to resort to morphia In syphilitic cases it is essential to get the patient under the influence of mercury as soon as possible and a full course of antisyphilitic treatment should be instituted In both the rheumatic and gonorrhœal cases sodium salicylate is of benefit and should be given heroically. It is best to start with a 10 gr dose every four hours and increase this rapidly by decreasing the interval between the doses until definite signs of intolerance (headache, buzzing in the ears, and deafness) are produced The use of vaccines during the acute stage is not to be recommended

In the tuberculous cases attention should be paid to the environment Open-air treatment, adequate rest, fattening foods, and attention to septic foci are all essential Tuberculin injections appear to do good in a certain number of cases, and more recently excellent results have been obtained by generalised ultra-violet irradiation It must, however, be realised that the tuberculous cases tend to pass into a condition of chronic iridocyclitis, one of the most difficult of eye diseases to treat

Operative Treatment

No operation is ever necessary in the acute stage of a pure iritis In cases of acute iridocyclitis with raised tension a paracentesis may occasionally be performed, but conservative measures are usually successful Operation is only required for complications of iritis due in most part to inefficient treatment during the acute stage Posterior synechiæ, exclusio and seclusio pupillæ, iris bombé, secondary glaucoma, and cataract may all call for operative interference later, but it is out of place to deal with them here, since it is the object of early treatment to avoid their occurrence

Prognosis

The patient should be reassured as much as possible, but every effort should be made to impress on him the necessity of thorough treatment, which must be kept up even after the subsidence of acute symptoms A mydriatic should be used for at least a fortnight after all pain and injection have disappeared or there is a danger of recurrence The syphilitic cases should be warned to carry out treatment in detail, since, although a recurrence of iritis is improbable, it is usually a sign of a severe infection In rheumatic and gonococcal cases the prognosis with regard to recurrence should be more guarded as it is difficult to eradicate the cause In tuberculous cases the outlook is always grave, both for the eye and because there is a possibility of general dissemination

IDA C MANN, M B , F R C S Eng ,
Assistant Surgeon to the Central London Ophthalmic Hospital, Ophthalmic Surgeon to the Elizabeth Garrett Anderson Hospital

---

EXTENSION OF ST BARTHOLOMEW'S HOSPITAL, ROCHESTER —The buildings of this ancient institution, which was founded in 1078, reconstituted in 1858, and reopened in 1863, are in certain respects inadequate, and a fund of £80,000 is being raised for necessary extensions It is proposed to increase the number of beds from 105 to 157, to enlarge the orthopædic and out-patients' departments, to provide a self-contained theatre for minor operations in an improved casualty department, and new X ray rooms, and to make other additions and improvements, including further accommodation for the nursing and domestic staffs

---

Special Articles.

THE INTERNATIONAL SANITARY BOARD OF CONSTANTINOPLE

IN the autumn of 1914, a few weeks before Turkey came into the war on the side of the Central Powers, the Constantinople Superior Council of Health ceased to exist as an international body By a stroke of the pen the Turkish Government eliminated the foreign delegates and converted the Council into a purely Turkish organisation Under the Treaty of Lausanne of 1923 the demise of the Board was formally recognised, but it was at the same time stipulated that a special Commission should be set up to liquidate its affairs and administer its estate The nature of the Commission's mandate is clearly laid down in Art 116 of the Treaty —

> "Turkey undertakes to respect to the full the right of dismissed sanitary employees to an indemnity, to be paid out of the funds of the former Superior Council of Health of Constantinople, as well as all other established rights of the employees and ex-employees of that Council and their heirs All questions relating to these rights, to the destination to be given to the reserve fund of the former Council, to the final liquidation of the former Sanitary Administration, and all other similar or connected questions, will be decided by a Commission ad hoc, which will be composed of one representative of each of the Powers formerly represented on the Superior Council of Health of Constantinople, with the exception of Germany, Austria and Hungary In case of disagreement among the members of that Commission on any question relating either to the above liquidation or to the affectation of the funds remaining after that liquidation, any Power represented on the Commission will have the right to refer the matter to the Council of the League of Nations, which will give the final decision"

This Liquidation Commission held its first meeting on Feb 19th, 1925, and its final meeting on June 12th of this year The task with which it was charged was by no means a light one On the one hand were a large number of ex-employees of the former Turkish Sanitary Administration, whose career and prospects had been blighted by the changes brought about in the Board, and an even larger number of pensioners whose established rights had been seriously threatened by those changes, on the other was an entirely new and purely Turkish Sanitary Administration, which claimed to be regarded as the lineal successor of the former Administration and, as such, to be entitled to at least a portion of the latter's estate Fortunately the reserve funds of which that estate was mainly composed were not only considerable in amount, but, being placed in various Government stocks of the first character and deposited mainly in English and French banks, had survived the war almost intact and were at the disposal of the Commission to meet the above conflicting claims

With the completion of the work of the Liquidation Commission a not unimportant chapter in the history of international disease control comes to its final close For over three-quarters of a century the Constantinople Board of Health had shared with the corresponding body in Alexandria the task of endeavouring to keep plague, cholera, and other pestilential diseases from penetrating into Europe from their endemic centres in the East Of the nature of the barriers which it set up against those diseases a clear idea may be gathered from articles that have appeared at intervals in THE LANCET.

The task of the deceased Board was, indeed, a complex one It administered many large lazarets and health offices extending from the Persian Gulf and Turco-Persian frontier on the East to the coasts of Albania on the West, and from the shores of the Black Sea on the North to those of Arabia and the Cyrenaic Peninsula on the South It was charged by successive international conferences and conventions with the sanitary control of the Moslem Haj to Mecca and Medina, of the Shiah pilgrimage and not apply in respect of prescriptions given by Frederick George Lewtas, M.R.C.S., L.R.C.P., at present residing in the Slade Nursing Home, Bideford, Devon. A prescription signed by Dr. Lewtas will therefore not be any authority for the supply of any of the drugs to which Part III. of the Dangerous Drugs Act, 1920, applies, and any person supplying the drugs on such a prescription will be committing an offence against the Acts. Dr. Lewtas's authorisations as a duly qualified medical practitioner to be in possession of and supply raw opium and the drugs to which Part III. of the Act of 1920 applies were withdrawn in June, 1925.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Vienna Dermatologists.

Prof. Ernst Finger, director of the first dermatological clinic of the University, has reached his seventieth year and, according to the regulations, should now retire. But in view of his exceptional knowledge and experience the Senate has asked him to continue for an honorary year at the clinic so that his services may be still at its disposal. Prof. Finger is one of those rare men who combine the qualities proper to the physician, the teacher, the investigator, the organiser, and the critic. His comprehensive personality has won the admiration and affection of countless students and patients and has given him high international reputation. Since his work began in 1880 it has covered most of the field of venereology. Besides his investigation of the gonococcus and his experiments (with Landsteiner) on syphilis in apes Prof. Finger has been responsible for various dermatological studies, especially on tuberculous and atrophic conditions of the skin and on the problems of immunity. More recently his attention has been turned to social medicine, and to his unceasing efforts are ascribed the immense benefits of energetic treatment of venereal disease in the Austrian army during the war. He organised a hospital for prostitutes, which was the first of its kind on the continent, and his text-books have been translated into most European languages.

Prof. Leopold Arzt succeeds Prof. Gustav Riehl as chief of the second dermatological clinic. He was born in Vienna and has spent his whole life in the city, which was undoubtedly one of the reasons for his being preferred to others nominated for the appointment: there is nowadays a tendency to refrain from calling in men from abroad to the leading positions. His scientific attainments, moreover, are certainly sufficient.

The Weight of the Brain.

Dr. Pape and Dr. Kopelzky have reported on a series of 833 brains which they have examined. The average weight of the brain, they find, is 1363 g. in males and 1260 g. in females. During the first five years of life it is doubled, but during and after puberty it increases but little: the highest average weight is found in the age-period 11–15 years, when it is 1443 g. in boys and 1306 g. in girls. During the climacterium, these observers consider, the weight is rather greater than might be expected from the fact that after puberty it generally diminishes in a steady curve. The gradual diminution is due partly to atrophy and partly to the fact that many persons with heavy brains die early in life. The extremes of variation are commoner amongst men than women, perhaps because of an alleged further biological differentiation. One adult had a brain weighing 1730 g. which did not show any pathological changes, whilst a boy of 3 had a brain weighing 1700 g. Amongst suicides the average weight was found to be 100 g. more than normal and no brains classed as light occurred in this group. In all these investigations it is necessary to take into consideration the incidence of pathological conditions such as tumour and meningitis at the various ages.

Uncompleted Medical Studies.

There is a remarkable disproportion between the number of students who matriculated 6–10 years ago and the number of degrees granted by the University during the last five years. Evidently many students change their minds and take up other occupations before they reach the end of their studies, or else they complete their training somewhere else, which is unlikely since a large proportion of them come from abroad—e.g., the Balkans—and have no opportunities for study elsewhere. No doubt it is the economic factor that is responsible, but whatever the cause, only 1200 students graduated here in 1924–25, though there were 2780 first-year students in 1919–20.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Care of the Disabled.

OF 1,500,000 disabled soldiers in this country more than 660,000 are still in receipt of a pension. The allowance of those whose impairment of efficiency was less than 25 per cent. has been capitalised, but those disabled by more than 50 per cent. are described as Schwerbeschädigte and enjoy certain privileges—for instance, employers must find work for a certain number of them. There are 2734 blind among the victims of the war, and the pensionaries include 39,000 men suffering from tubercle whose disease was contracted or aggravated by service. Some 5000 men are registered as mentally affected, and over 44,000 have lost a leg or a foot, this disability being almost twice as common as the loss of an arm or hand. The great development of orthopædic technique, however, has enabled the majority of them to work. Since 1924 the number of applicants for disablement allowance has increased, as the bad economic state of Germany has made a pension necessary to many who were previously able to do without it. The number of widows is 365,000, and the number of fatherless children 962,000, of whom 65,000 have lost both parents. A sum of 1,491,800,000 marks—nearly £75,500,000—is spent every year on the support of war victims. This is about 30 per cent. of the whole German Budget.

Voronov's Operation.

Before the Society for Sexual Research Prof. R. Mühsam lately read a paper on the results of transplanting the testicles by Voronov's method. He gave particulars of seven patients on whom he had operated, one of whom was eunuchoid, two impotent after castration, one bisexual, and four homosexual. Shortly after operation the results seemed to be rather satisfactory, but the improvement was transitory and lasted only for periods varying from a few days to several months. The eunuchoid patient had erections for two months: the homosexual patients had dreams of heterosexual character, but were incapable of normal intercourse, and similar results were obtained in the case of those castrated. Only in the bisexual patient was the result satisfactory; his desires became male in character and at last he married and begot a child. The apparent efficacy of the operation in the early stages is obviously due to the hormonic effect of absorption from the transplanted organ.

Before the same society Prof. E. Joseph read a paper on the influence of suprapubic prostatectomy on the sexual power. He had performed the operation, he said, in 78 patients, in 52 of whom reliable answers to his question about sexual function were obtained. Only one patient said that his sexual power had totally disappeared after the operation, whilst of eight patients over 70 years of age five had regained their sexual power. Of the patients under 70 years of age, in eight the sexual power had totally disappeared before the operation and was not restored, whilst in 34 improvement was observed. As he pointed out, however, it is difficult to say whether

MEDICINE AND THE LAW.

The Legal Definition of Live Birth · A Gap in the Law.

Dr. Godfrey Carter's paper on the Legal Definition of Live Birth, read before the British Medical Association at Nottingham in July, commented upon a remarkable gap in the criminal law of England It is neither murder nor manslaughter to kill a child until it is born. So far as murder and manslaughter are concerned, the law does not deem a child to be born until the whole body of the child is brought alive into the world, having an independent circulation, and breathing, or capable of breathing, from its own lungs, so that it possesses, or is capable of, an existence independent of connexion with its mother, though the child may legally be deemed completely born in spite of the fact that the umbilical cord is not severed That is how the law is stated in Lord Halsbury's "Laws of England," and, as Dr Carter remarked, the legal requirement of evidence of an independent existence after the complete extrusion of the child seems to have arisen in the ignorant past at a time when it was believed that a fœtus drew its blood direct from its mother's circulation To this legal definition must be added two judicial decisions In 1834, Park, J., held that a child born alive could be the subject of a murder, though it had in fact not breathed; and in 1837 it was held that the fact that a child had breathed was not conclusive proof that it had been born alive, as it might have breathed and died before birth.

Dr Carter makes the points that an appreciable number of full-term healthy infants lose their lives through deliberate interference during birth, that this interference occurs in the endeavour to conceal birth, that it occurs in secret and often without the connivance of a second person, and that the law assumes the child to be born dead unless satisfactory evidence is produced to the contrary He quotes with approval a Scottish ruling given by Lord Young to a jury in the High Court of Perth in 1892, in a case of alleged infanticide, which is worth repeating

> "If the child was killed, and the prisoner was to blame for its death, she is guilty of culpable homicide If she went on from the conception to the birth of the child, desiring to hide her shame, and refrained from calling assistance when assistance was at hand and took upon herself to assist herself, and in the agony of childbirth grasped the throat of the child with the result of causing its death, I cannot say that she is not blameworthy or that her blameworthiness does not amount to culpable homicide If you think that blame does attach to her, then culpable homicide is the name for that blame, resulting as it did in the death of a child which had both cried and breathed. It does not matter in the least, so far as the criminality of the accused is concerned, if the injuries were inflicted when the child was partly in its mother's body"

But those words cannot be taken as a statement of English law, nor does English law accept without considerable reservation a dictum by the late Mr Justice R S Wright (quoted by Dr Carter as having been uttered in a case at Shrewsbury Assizes in 1901) to the effect that the test of separate existence is the question whether the child is carrying on its being without the help of the mother's circulation. The Royal Commission on Capital Punishment in 1865 recommended statutory provision for punishing the infliction of grievous bodily harm or serious injury upon a child during its birth or within seven days afterwards, and added that no proof should be required of the fact that the child was completely born. A later Commission (in connexion with the draft code) proposed to enact that "every woman shall be guilty of an indictable offence who, being with child and being about to be delivered, with intent that the child shall not live, neglects to provide reasonable assistance in her delivery if the child dies either just before, or during, or shortly after birth, unless she proves that such death was not caused either by such neglect or by any wrongful act to which she was party" This rather cumbrous clause would have met Dr. Carter's difficulty, but the recommendation has never been taken further Presumably Parliament would be unwilling to interfere with the traditional principle which leaves the burden of proof upon the shoulders of the prosecution The type of accused person at whom the change in the law would be aimed is usually the unhappy mother of an illegitimate child, an object of general sympathy. A change in the law might secure more convictions, but the whole policy of Parliament is to mitigate punishment in such cases; indeed, it was necessary to pass the Infanticide Act of 1922 because of the unreality of passing sentence upon such mothers where the death of a newly-born child was caused by some wilful act or omission at a moment when the mother's balance of mind was disturbed It is doubtful if a mother under such circumstances would pay much attention to the wording of an Act of Parliament, whether the law remains in its present state or whether it is changed as the two Commissions have recommended Dr Carter argues rightly that to place the burden of proof upon the mother would force her into the witness-box to state how it came about that the child did not survive, she would then be liable to cross-examination. But the cross-examiner would have a repugnant task, and the jury—whose undefined privilege it is to temper the keen edge of the law—would readily allow their verdict to follow their natural feelings of sympathy Nevertheless, the law is at present surprisingly unsatisfactory, and it is highly desirable that the legal definition of what constitutes live birth should be reconciled with modern science

Drunkenness while in Charge of Motor-Car Defence of Insulin Poisoning

A physician practising at Bentinck-street, W., charged at Marylebone police-court on August 13th, raised an unusual defence to a charge of being drunk while in charge of a motor-car, and driving in a manner dangerous to the public He gave evidence that his disability was due, not to alcoholic poisoning, but to an overdose of insulin, and he called four doctors who agreed in stating that the symptoms of insulin poisoning might easily be mistaken for those of alcoholic poisoning He was fined £20 with 10 guineas costs on the charge of drunkenness, and £10 on that of dangerous driving with the alternative of 21 days imprisonment The magistrate ordered the convictions to be endorsed upon his licence, and the accused was disqualified from holding a licence for 12 months. As the case is subject to appeal, further comment is withheld The evidence for the prosecution was that the defendant's motor-car about midnight mounted a pavement in St John's Wood, ran along it, recrossed the road, ran into a lamp-post, rebounded, and came to rest against a garden wall On being spoken to by a policeman, he was said to have driven across the road again into the same lamp-post The constable's evidence, confirmed by the divisional surgeon, was that the defendant was drunk.

Dentistry in the Market-place

A coloured man who was selling tooth-powder in a street in Liverpool was on August 10th fined £5 at the police-court for practising dentistry without being registered under the Act of 1878 It was alleged that he had performed an extraction with his finger and thumb so as to show his knowledge of dentistry On behalf of the defendant it was stated that no payment was made for the extraction, and the question arose whether the extraction could be described as such work as is usually performed by qualified dentists The deputy-stipendiary ruled that it could and that the defendant had obtained a reward in the way of an advertisement for his tooth-powder

Dangerous Drugs Withdrawal of Permit

The Home Secretary gives notice that he has directed that the exception in Regulation 4 of the Dangerous Drugs Regulations, 1921, which permits dangerous drugs to be supplied on a prescription given by a duly qualified medical practitioner, shall

6 The clinical history subsequent to delivery, including the amount and character of lochia; copy of temperature chart, &c

7 The time of the onset and the probable cause of pyrexia

8 Any cases of specific fevers, erysipelas, puerperal pyrexia, or other possible forms of sepsis, visited recently by doctor or other attendant, giving dates

The new Regulations come into operation on Oct 1st next The usual fee for notification will be paid

THE HEALTH OF LONDON SCHOOL-CHILDREN IN 1925

THE report of the school medical officer for the County of London indicates how negligence and ignorance the bulwarks of disease, are rapidly falling to the attacks of a wider education, witness the materially lessened mortality at the ages of comparative helplessness The enormous scope of school medical work in London can be gauged by a study of this report, prepared by Dr F N. K. Menzies in collaboration with Sir William Hamer, wherein is described an organisation designed to deal with roughly an eighth of the total school population in England and Wales There are 664,890 children on the roll, with an average attendance of 580,316 The number of routine children examined during the year was 240,365, including 41,011 leavers; 235,745 special inspections and reinspections were made The percentage of routine children requiring treatment (excluding uncleanliness and dental defects) was 42 9.

During 1925 several important developments have taken place (1) The examination of children leaving school was reinstated, giving valued assistance in vocational guidance to all care workers and employment agencies (2) Extension of facilities for treating dental defects and minor ailments (3) Inauguration of two new centres for the in-patient treatment of tonsils and adenoids (4) A new scheme for the treatment of discharging ears and the establishment of six ionisation centres (5) Further provision for remedial exercises by the formation of 100 "health classes" for treating incipient deformities, including postural curvatures, flat feet, and defective expansion of the chest—these classes are taken by skilled instructors under the supervision of the medical officer, and reports of their activity show excellent results (6) Increased provision for open-air education from 95 open-air classes in 1924 to 117 in 1925

Many parts of the country have reported a fall in the nutritional state of the children during the past year, the nutrition of the London entrants has not so far shown any falling away Dr C J. Thomas, in his detailed analysis of the work, gives his reasons for stating that there has been a real increase in the number of children suffering from enlarged tonsils and adenoids and their sequelæ, which he attributes to the effect of climatic conditions and the prevalence of infectious complaints There has been a steady increase in the percentage of children leaving school whose teeth are noted as satisfactory There has also been a definite increase of 6 to 7 per cent of the number of entrants found to have perfect teeth There is a steady decline in the number of children leaving school with defective vision—the Council's regulations now prohibit the teaching of needlework by artificial light, unless in exceptional circumstances. The all-round improvement in the general condition of the leaving child is a tribute to the care and training given during the period of school life

Dr F. C Shrubsall gives an analysis of the after-effects of encephalitis lethargica in the different age-groups, showing the higher incidence of mental changes in the child An excellent map shows that the distribution of encephalitis in London during 1921–25 followed the density of population Dr Elizabeth McVail has made a careful investigation of educational retardation in 69 girls in backward classes The proportion of these children with physical defects was much higher than amongst normal children, 16 per cent had defective vision, the same proportion had defective hearing. The effects of disabilities persisted long after these had been cured or mitigated, in particular a child who has been unable to hear gets into a habit of not troubling to listen Many children in all the groups evidently owed their school backwardness to loss of attendance due to illness or unfavourable home conditions The children in these classes are not merely behind their fellows but are so badly lacking in education that they would be severely handicapped in employment Intensive methods of education would do them little if any, good, and Dr McVail sets out the necessity for small classes under close medical supervision

That the full functioning of the mind, whatever the level of intelligence may be, is largely dependent on the well functioning of the body is increasingly brought out in many researches along different lines Dr J Nairn Dobbie, working in conjunction with the staff of the National Institute of Industrial Psychology on the subject of vocational guidance, records the physique and general condition of 237 boys and girls of 14 years, and indicates how brightness and high spirits go hand-in-hand with robust health and good nutrition. The physical contra-indications for special occupations were considered, 49 boys out of 128 showed 103 contra-indications between them, and 40 girls out of 109 showed together 80 contra-indications

Dr R H Norman has investigated the frequency of albuminuria in 1787 school-boys, and found it present in 23 1 per cent at all ages between 7 and 15 years—the incidence rising from 10 per cent at the lower age to 40 per cent at 15 years—re-examination was carried out a few weeks later and in the majority of the cases it was still present, the persistence being greatest in the elder boys

Dr Mabel Russell gives an account of the social and physical condition of children living in canal barges, and finds that the physique and general health of these children is better than that of town children, though in hygiene and education they are far below the town standards

Dr. Letitia Fairfield, in analysing 650 cases of illness among school teachers, states that prevention and treatment of functional nervous disorders are on a less satisfactory basis than is the case in purely physical disorders, and that the severity of the breakdown is in inverse ratio to the gravity of the alleged causes

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the statistics of the cities of Glasgow and Birmingham for 1925 The density of population per acre is nearly three times greater in Glasgow than in Birmingham (the ratio is 57 : 21), but the number of persons per house is less in Glasgow—namely, 4 60 as compared with 4 83

Name of city.	Estimated mid year population (R G.)	Birth rate.	Death rates per 1000 of the population					Death-rates per 1000 births	
			All causes	Tuberculosis	Cancer	Resp diseases with influenza	Heart disease	Infant mortality.	Maternal mort from childbirth
Glasgow	1,057,100	24·0	14 5	1 33	1 31	2 8	1 4	102	7 2
Birmingham	945,900	18 8	11 7	1 14	1 27	2 4	1 4	78	4 1

Glasgow.

This is Dr A S M MacGregor's first report, and during the first half of the year his predecessor, Dr A K Chalmers, was still in office He briefly describes the growth of the city. During last century it grew beyond its boundaries at a greater rate than within them After the extension of 1891 rapid building took the regeneration occurs because the general state of health is improved, or because the operation frees the seminal vesicles from the pressure of the enlarged prostate. Some of the patients complained that whilst the libido was restored no ejaculation followed, and in these cases it was ascertained that the semen was passed into the bladder. Prof. Joseph considers that suprapubic prostatectomy is likely to restore the sexual power if it has not totally disappeared before operation.

Cancer Cured by Mesothorium

Prof. Lazarus recently showed to the Berlin Medical Society a patient with cancer of the tongue cured by the administration of mesothorium. He explained that the application of the rays has three objects—to destroy the cancerous tissue, to vitalise the stroma so as to obtain fibrous encapsulation of the tumour, and to produce a protective zone by hyperæmia and cellular infiltration. The patient shown was 61 years of age and had a squamous-celled epithelioma. A 50 per cent. radiothorium was applied emitting β and γ rays. In place of the cancer, of which a photograph was shown, there was marked cicatrisation. No relapse has occurred since the treatment in 1921 and the weight of the patient has increased by 20 kg.

An Inundation Disease

An epidemic of fever from an unknown cause has been observed in Silesia, where there have been heavy floods. The disease began with high fever, pains in the limbs, and great weakness. The symptoms usually last only for a few days, though occasionally there is a second attack. The patients were conveyed to the University Clinic of Breslau, and Prof. O. Minkowski, chief physician of the clinic, Prof. K. Prausnitz, chief of the Institute of Hygiene in the University, and the district medical officer of health, who formed a committee of investigation, state that all the patients had either slept in the wet meadows or had helped to get in the hay. The disease is carried by insects, but is not transmitted from one person to another, and certainly the floods have favoured its development.

Supervision of the Preparation of Serum

In Chemnitz, Saxony, a child has died of septicæmia after an injection of the Degkwitz anti-measles serum, and examination of the serum showed that it contained streptococci. The serum was obtained from the Chemnitz municipal hospital, and it is now discovered that no bacteriological examination of it had been made. The Degkwitz serum is recommended for prophylaxis against measles, and school medical officers insist on its administration to prevent the spread of the disease in schools. Prof. A. Schlossmann, of Dusseldorf, draws attention to the dangers of preparing serum in hospitals and distributing it to practitioners without any official scrutiny, and considers that its preparation should be as carefully supervised as that of antidiphtheritic serum. Health authorities ought to ascertain who has prepared the serum and whether the necessary serological and bacteriological tests have been carried out properly.

Prosecution of a Medical Man

Not long ago a patient died of heart failure whilst undergoing fat-reducing treatment, and the medical attendant was prosecuted for having caused the death by neglect. The experts gave evidence that the condition of the heart should have been known to the doctor and that he ought to have been especially cautious and should have regularly observed the progress of the case. The neglect complained of was that the doctor left town for two days without giving orders to the nurse. The defendant pleaded that the patient, against his will had taken very hot baths in order to reduce weight rapidly, which he regarded as the principal cause of death. He was nevertheless found guilty and fined 300 marks (£15), and the family of the deceased is now in a position to bring a civic action for damages against him which is likely to cost a good deal of money.

Public Health Services.

NOTIFICATION OF PUERPERAL PYREXIA.

An Order,[1] dated July 31st, 1926, issued by the Ministry of Health, makes important new regulations regarding the notification to the sanitary authority of fever occurring in the recently delivered woman. Puerperal fever, as it is rather loosely called, has been notifiable for the last 25 years, but, owing to the fact that the condition cannot be accurately defined since the disease is not specific in the sense that scarlatina or diphtheria are specific, notification has been incomplete, with the result that the prevalence of puerperal infection is imperfectly known and measures for its prevention and effective treatment have been abortive. To some extent, too, the term "puerperal fever" has been felt to be a slur upon the patient or her medical attendant. For these reasons the Ministry has decided to follow the advice of a representative committee, which reported in February of last year, and to make it obligatory on the accoucheur to report any febrile condition occurring in a woman within 21 days after childbirth or miscarriage in which a temperature of 100.4° F. (38° C.) or more has been sustained during a period of 24 hours or has recurred during that period. This obligation is added for the present to the existing obligation to notify puerperal fever, for although it is intended to abolish the latter term altogether, this cannot be done without legislation to amend the Act of 1899. Puerperal pyrexia, as defined above, is now to be notified irrespective of the cause to which the fever may be attributed, the importance of securing adequate treatment in the early stages of puerperal infection outweighing the objection that the new rule will result in the reporting of a number of trivial cases. The Ministry has formed the impression that pyrexia during the puerperium is not infrequently looked upon as a comparatively unimportant incident, and the circular[2] impresses upon maternity institutions the fact, since illustrated so poignantly in the Kingston case, that the presence of infection, however slight in degree in a patient or in a member of the staff, should be considered as liable to give rise to an outbreak of virulent infection and should be dealt with accordingly. Local authorities are instructed to advise all practitioners within their area of the new duty imposed upon them and to supply them with forms on which to indicate whether assistance is desired in dealing with the case. In London the notification is handed on to the Metropolitan Asylums Board which has made special arrangements in its hospitals for the treatment of cases of puerperal fever. Outside London the onus is laid on the local authorities administering maternal welfare schemes to provide facilities for diagnosis and treatment, including consultation with an obstetric specialist and the provision of skilled nursing or institutional treatment. Should the practitioner desire special assistance from the local authority the medical officer of health is to ask for information from him in regard to some or all of the following points:—

1. Conditions in the patient, if any, prior to the labour, which might have been factors in producing the pyrexia—e.g., septic foci, vaginal discharge, carious teeth, &c.
2. The names of all persons who have made internal examinations, including the name of the person who delivered the patient, their occupations and professional qualifications (if any).
3. Day and hour of commencement of labour or miscarriage.
4. The clinical course of labour or miscarriage, mentioning any special means used to assist labour—e.g., obstetrical operations or manual removal of placenta, and any injuries incurred by the patient.
5. The duration of labour and time of termination of labour or miscarriage.

---

[1] Statutory Rules and Orders 1926 No. 972. Public Health, England. H.M. Stationery Office. 2d.

[2] Ministry of Health, Circular 722, issued to County Councils and Local Sanitary Authorities. 2d.

flow through an agricultural district, and the water is chlorinated before use. The third supply, from three deep wells sunk in the Bunter Beds, is only brought into use when needed. The area over these wells is becoming populated and the water from Aston well is now chlorinated Individual houses in the rural area are supplied by shallow wells In the majority of courtyard houses there is no water-supply inside the house, the service being by a standpipe in the yard The river Tame receives drainage from other towns and villages outside the city; it is grossly polluted and complaints of smell are common during the summer months A recent conference of the authorities concerned is already producing results The flooding of the Hockley Brook in 1925 caused considerable alarm and nuisance Work to prevent the flooding is in progress and expected to be complete in 1926. Efforts are being made, where practicable, to secure one water-closet for each house in the case of courtyard houses

The Gas and Electric Supply Committees are backing up the work of the public health department in striving for a purer atmosphere; there are 83,000 gas fires and 185,000 gas cookers in use. Eighty-six convictions were obtained against factory chimneys for emitting black smoke, but the average fine was only £2 2*s* 9*d* The use of coal-dust and inferior slack has led to a grit nuisance In the local Act of 1922 powers were obtained to deal with chimneys emitting grit and several firms have had to alter their plant The unaided eye cannot see the grit coming out of the chimney, but it has been found possible to trace the offending chimneys by observing the direction of the wind and putting down papers smeared with a slow-drying varnish. The use of a field-glass or telescope has also been found helpful

Birmingham does better than most towns in the building of new houses, 4840 were erected in 1925, 3066 by the corporation and 1774 by private enterprise During the last six years 13,099 houses have been put up, 8516 by the corporation and 4583 by private enterprise Three-quarters of these have been erected in the healthier suburban wards There is still much overcrowding, and in order to discover its extent information was sought at about 500 houses in each of two representative areas In the poorest area 25 per cent of the houses were found to be overcrowded, in the artisan area only 2 per cent The definition of overcrowding was "more than four persons per bedroom" or "persons of opposite sexes over the ages of 13 in the same bedroom" Some of the bedrooms are very small so that the standard adopted was obviously a low one Examples are given of some of the worst cases of overcrowding. There is a great need for decent small furnished houses, and as an experiment two-roomed houses are to be erected and let furnished to small families until the housing shortage is less, when two of these small houses may be combined into a good four roomed cottage

Dr E H R Harries is convinced, after more than five years' experience, of the value of the Schick test and immunisation for the protection of the staff of the hospitals against diphtheria Up to the end of the year the method had been extended to three large institutions for children, and it is hoped next year to give a fuller account of work on both diphtheria and scarlet fever immunisation Dr C G Dixon has had encouraging results from the artificial light treatment of various forms of tuberculosis at Yardley Road Sanatorium Dr Ethel Cassie gives an interesting account of the work of the Carnegie Infant Welfare Institute. The clinics for treatment by light and by massage and remedial exercise have done good work, and the breast feeding clinic has given striking results in the restoration of lactation. Lactic acid milk has proved valuable for cases of marasmus and chronic enteritis[1] The damage to eyesight from ophthalmia neonatorum during 1925 was unusually severe Two babies, one born in hospital and the second under the charge of doctor and midwife, were left totally blind In a third, born in a maternity hospital, both eyes were left very defective, a fourth, born in a general hospital, had slight defect of the left eye, and the fifth, also born in hospital, had the right eye slightly scarred The five cases came under treatment of the eye hospital after varying intervals—namely, three months, 23 days. 10 days, one month, and 18 days respectively

Efforts to eliminate tubercle bacilli from milk are referred to on page 398 of this issue.

TYPHUS FEVER IN GLASGOW.

As we reported last week, there has been a small outbreak of typhus fever in Glasgow By courtesy of the divisional medical officer of health we are able to give the following particulars

On the evening of July 30th a case of suspected typhus fever was admitted to Belvidere Hospital Later in the same evening the home of this patient was visited, and two younger children of the family were found to be 'febrile and out of sorts" A married daughter of the family, residing at a house some distance away, was also confined to bed with the same symptoms These three patients were immediately removed to hospital

The blood of the original patient gave a positive Weil-Felix reaction, and all contacts from both infected houses were removed to a reception house for observation. On the afternoon of July 31st one of these contacts, who had developed a temperature of 100° F, was also removed to hospital On August 1st a sister of the original case—a resident maid in a local hospital—was reported to have developed a temperature of 104°, and she also was admitted for observation to Belvidere Hospital On the following day another contact who had become febrile was removed from the reception house to hospital for observation Within a few days of admission to hospital all the contacts showed definite evidence of typhus fever. On August 10th another case of typhus fever was admitted to Belvidere Hospital This last patient was a contact with the original case

Inquiry into the history of previous illnesses in the infected households revealed that the father of the first seven cases had died on July 16th from an illness whose nature was somewhat obscure His movements were difficult to determine, and it was thus impossible to trace any source of infection The mother of the family had also suffered from an indefinite illness lasting eight days but had recovered A Weil-Felix blood reaction was in her case negative: this test was performed six weeks after the onset of the illness

The precautions adopted by the public health authorities were as follows —

1 Removal of direct contacts to a reception house for observation.

2 Daily medical inspection of these contacts, and removal to hospital of any who had developed febrile symptoms The temperature was taken morning and evening as a routine measure

3 Disinfestation, cleansing, and closure of the infected houses

4 Daily visitation of indirect contacts in various parts of the same district.

5 House-to-house visitation of all houses in the near vicinity

6 The illness of the father was regarded as typhus fever administratively, and all contacts with him in the institution where he died were treated as contacts with the disease

7 As the original case had been admitted to a general hospital in the first instance, the ward of that institution was closed for the admission of new cases, the nurses and patients of that ward were kept under observation and extensive disinfection was performed In addition the ambulance by which the patient was conveyed to the general hospital was disinfected, and both the driver and the attendant treated as typhus contacts

8 One of the later cases of typhus fever was a maid in a local institution All the direct contacts with this patient were removed to the reception house for observation The dormitory in which she slept was closed after extensive disinfection and disinfestation had been carried out

---

[1] THE LANCET, August 14th, p 322

place within the enlarged area. From 1901–11 there was a decline of house building in the city and the empty houses numbered 20,000, whilst growth increased outside. From 1911 onwards the decline in house building was marked and empty houses —good, bad, and indifferent—became re-occupied. Building practically ceased in 1917 and since then it has been resumed much too slowly to meet the demand. The outside growth now taking place is of no service to the large population most in need of accommodation.

Variations which occur in ward populations are due to corporation housing schemes on the one hand and a clearance of slum areas on the other. The unoccupied houses, of which there were 18,710 in 1913, numbered 366 in 1925 and 449 in 1924. In last year's report it was estimated that 5000 houses annually for the next 20 years would be needed to meet the shortage; in 1925 only 1394 were provided. Back-lands are being gradually cleared. During last year the number of back-land tenements had been reduced to 450, and of these 50 are to be included in a clearance scheme. The houses most needed are those of moderate size, and no houses of less than three rooms are being built under subsidy schemes. In the present report is included a monograph by the late Dr. Alexander Maclean on the height and orientation of buildings in relation to sunshine, wherein it is recognised that at the latitude of Glasgow the streets have to be wider or the buildings lower than in London if they are to get the same benefit from sunshine. Proximity to place of employment is not so necessary in Glasgow, and in the interests of the children a low density with access to open spaces should be preferred to the erection of high buildings near the place of work.

The new life-tables for Glasgow show that the expectation of life for males up to the age of 42 is slightly better than in Liverpool and Manchester, but after that age it is worse. The expectation of life for females is better in Liverpool and Manchester. At birth the expectation in Glasgow is 48·41 years for males and 52·22 for females; at the age of 10 it is 50·81 for males and 53·19 for females.

Several new maternity and child welfare centres have been recently completed or are under construction; the report has illustrations of them. At four of the centres arrangements have been made for the diagnosis and treatment of venereal diseases. A special nurse has been appointed to follow up women and children whose attendances have lapsed, and her efforts have met with considerable success. Dr. Chalmers Smith reports on the light treatment in use at Cochrane-street. The cases treated have been children under 5 years of age suffering from rickets, malnutrition, and debility, and the success attained is likely to lead to a further extension of the work. At the maternity hospital a course of lectures and demonstrations has been given to midwives and will be repeated. At the instance of the Scottish Board of Health two aural surgeons have been appointed to treat the children in the isolation hospitals who contract otitis media as the result of scarlet fever or other diseases. In 1925, 3878 women attended the antenatal centres, as compared with 2957 in 1924. Midwives sent for medical help in 22 per cent. of their cases. A chart shows that the case rate for ophthalmia neonatorum per 1000 births was about 6 before the war, rose to 10 in 1917, and 10½ in 1919, since which it has rapidly declined. Since 1914 a total of 168 of the survivors have shown some degree of impaired vision, but during the last three years only 18 have suffered in this way. During 1925 there were 32 gonococcal cases, all of which recovered without impairment of vision, whilst of the 354 non-gonococcal cases two lost the sight of one eye and one had slightly impaired vision. During the last five years the average death-rate from puerperal fever per 1000 births has been 2·6. The number of cases notified last year was nearly five times greater than the number of deaths, which shows that notification is being better carried out. Of 500 consecutive cases admitted to Belvidere Hospital between April, 1923, and November, 1925, 96, or 19·2 per cent., died; in many of the fatal cases death was due to general peritonitis.

Two small outbreaks of scarlet fever were traced to the milk-supply. In each of them the infection was apparently due to missed cases which had developed otorrhœa. Since encephalitis lethargica became notifiable there have been 683 cases with 174 deaths. It is estimated that of the survivors about 200 are definitely disabled, some 25 per cent. of whom have symptoms of Parkinsonian type. Further observations have been made on the mosquitoes of the district. Six species have been identified, including only one of the anopheline type—viz., *Anopheles bifurcatus*. Deaths due to mosquito bites are attributed by Dr. W. C. Gunn to septic poisoning arising from scratching. He finds that a solution of camphor and menthol in absolute alcohol is an efficient remedy to apply to the bite. It was noted that the fogs, accompanied by a low temperature, in the latter half of November caused considerable increase in the respiratory death rate among older people but did not apparently affect children. Dr. Fergus L. Henderson reports on the use of X rays in the diagnosis of tuberculosis. He thinks that radiologists tend to diagnose hilum tuberculosis or peri-bronchial tuberculosis on insufficient evidence, but regards X rays as of considerable value and dissents from the opinion of one leading lung specialist that no radiologist should say that a chest is normal. During the last six years very few cases classed as negative have returned later as tuberculous. X rays are useful in the treatment of gland tuberculosis, but tuberculosis of the skin is better treated by ultra-violet radiation. Artificial light treatment has been in operation at Robroyston Sanatorium during the whole of 1925. One hundred and two patients of various types were treated, including ten carefully selected pulmonary cases. Dr. Alexander Smith concludes that artificial sunlight therapy is undoubtedly of great value for surgical tuberculosis, but is by no means infallible. For pulmonary disease its usefulness has yet to be proved. If used as a tonic and prophylactic for debilitated children, particularly those who have been in contact with tuberculosis, it would, he thinks, be almost invaluable.

The smoke inspector claims that 1925 will be notable for the first practical step taken by the corporation to produce a solid smokeless fuel suitable for domestic purposes. It has been named Kincole. It is said that it lights easily with paper and wood, gives out more radiant heat than the same weight of coal, and might well be substituted for coal in all domestic fires.

Birmingham

Sir John Robertson reminds us that 1925 was the jubilee year of public health effort. During 50 years the birth-rate, death-rate, and infant mortality-rate in Birmingham have been halved; small-pox and enteric fever have practically disappeared; scarlet fever has gone far towards disappearing also, and the prevalence of all the other so-called zymotic diseases has been enormously diminished. A statement gives some idea of what happens to illegitimate babies. Of 624 reported on in 1925 87 still remained in infirmaries and similar places, 51 died before the first visit was paid, and 86 removed. In 156 cases the father and mother were living together. In 48 the father was making an allowance under order, in 56 he was making a voluntary allowance, and in 106 cases he was not contributing towards upkeep at all. Investigation of the results of operation for cancer of the breast showed that early and complete operations were much more successful than the surgeons were aware of. Steps were taken to bring their success to the notice of the public by the house-to-house distribution of leaflets.

Birmingham has several sources of water-supply. The Welsh gathering ground is only used up to about a quarter of its full capacity. The rivers Bourne and Blythe are not a very desirable source; both streams same milk which would otherwise be sold as raw milk is thereby made safe and its keeping power (mainly taxed in the home) is much improved. Your correspondent refers to a manager of a company who is selling pasteurised milk as "Grade A" milk. This would not be possible if the local authority was doing its duty. The rogue in question is running the daily risk of heavy penalties, and the local authority should be put upon his track.

As to Mr. McLachlan's alleged disadvantages of pasteurised milk, I am unable to accept any one of them. Pasteurised milk, he states, "may go bad without curdling if kept for any length of time." Surely no one can dispute that there are lactic acid producing organisms which survive pasteurisation at 145° F. for 30 minutes, and therefore such pasteurised milk always sours before it decomposes. Furthermore, he states that reductase is destroyed by such pasteurisation. I dissent; but supposing that it is so, what is the disadvantage? The ferments found in cows milk mostly gain access in contamination; and those present in uncontaminated milk do not appear to be of value from the standpoints of either digestion or nutrition. The chief enzymes are destroyed, in 30 minutes at about 158°; and it is probable that at 145° the activity of some may be even slightly promoted.

As to the suggestion that pasteurised milk is less digestible than raw milk, I would suggest to your correspondent that he extends his work and research on this matter before he makes up his mind upon it.

I am, Sir, yours faithfully,

London, August 14th, 1926. HENRY KENWOOD.

THE FERTILITY OF THE TUBERCULOUS

To the Editor of THE LANCET.

SIR,—In his recent book, "The Need for Eugenic Reform," Major Leonard Darwin concludes a section on the eugenics of tuberculosis with the following sentence: "Many of these questions are still in doubt, but there can be no doubt that a diminution in the fertility of all tubercular patients would be a blessing to mankind." If this is true it is of evil omen that the fertility of the tuberculous should be as has recently been shown, somewhat above the normal. But is it true? Major Darwin's argument leading to this conclusion is based on two suppositions: that heredity is a very important, almost a dominant, factor in the determination of clinical tuberculosis, and that if this is not the case it must alternatively be assumed that the child of tuberculous parents is excessively liable to become a tuberculous patient by infection.

It is the former reason which weighs with himself. "The most striking fact," he writes, "telling in favour of the power of the hereditary factor is that a higher rate of incidence of this disease generally occurs amongst the children of tuberculous men as compared with that obtaining amongst their wives: for if this fact is to be explained by infection, it means that a man is more likely to infect his child than his wife, a very improbable conclusion."

The possibility—indeed, in view of Krause's work on the lymphatics of the child's as compared with the adult's lung we may say the great probability—that the same human being has less resistance as a child than as an adult has not been taken into account. Another error, all too common among eugenists, into which this most distinguished eugenist has fallen is to assume that natural immunity is the only factor which determines whether or no an infected subject shall become a clinical case. The influence of unusual physical strain, of the quantity of the infecting dose, of the frequency of its repetition—such considerations as these are altogether overlooked. We do not have to believe in the inheritance of acquired characteristics to believe that an individual who has successfully combated clinical tuberculosis may be unusually good stock from which to breed resistant progeny. In the case of tuberculous women there is, of course, a special reason why childbirth is to be feared, but that is altogether aside from the present discussion. It is reasonable to assume, and there is some statistical evidence to support the assumption, that on the whole those patients endowed with low natural immunity die before the consummation of marriage, while those who survive to have children leave to society a legacy of good stock in this particular respect.

And that brings out another weakness of the eugenist's case. Are we to think of tuberculosis resistance as the overwhelmingly important factor in breeding? Man is a complex animal, and it is conceivable, is it not, that there are some individual cases where the genes of the parents contain elements of such solid worth in mental and physical traits that an extra risk of their offspring getting tuberculosis might be worth the taking? As for the argument that the child should be spared the risk of infection from its father, we know first that parental infection, when it does occur, is most often from the mother, that the risk of fatal infection is only slightly greater among children of tuberculous parents than among the general population, and that a well-educated consumptive is a safer person to live with than the many unrecognised carriers of infection who do not know of their complaint.

I am, Sir, yours faithfully,

August 1st, 1926. T.B., M.D.

The Services.

HONORARY SURGEONS TO THE KING.

His Majesty has approved of the appointment of the following to be Honorary Surgeons to the King: Maj.-Gen. H. P. W. Barrow, C.M.G., late R.A.M.C., in succession to Maj.-Gen. C. E. Pollock, late R.A.M.C. (retired); and Maj.-Gen. D. Harvey, C.M.G., late R.A.M.C., in succession to Maj.-Gen. J. R. McMunn, C.B., C.M.G., late R.A.M.C. (retired).

ROYAL NAVAL MEDICAL SERVICE.

Surg. Lt.-Comdrs. to be Surg. Comdrs.: A. C. Shaw, R. A. Brown and A. C. V. Green.

The following appointments are notified:—Surg. Lt.-Comdrs. P. Lyon to R.N. Hospl. S. Queensferry; L. R. Warburton to R.N. Hospl. Haslar; J. F. Ainley to the *Excellent*; J. R. Brennan to the *Durban*; and E. S. Mellor to the *Yarmouth* for trooping trip. Surg. Lts. C. Godfrey to the *Ark Royal* and A. H. Harkins to the *Broke*.

ROYAL ARMY MEDICAL CORPS.

Capts. to be Majs.: D. C. G. Ballingall, H. G. Winter, N. Cantlie, E. A. P. Brock (Prov.), E. Phillips, S. D. Reid, P. J. Ryan and Bt. Maj. E. A. Sutton.

ARMY DENTAL CORPS.

Lt.-Col. J. P. Helliwell to be Col. to complete estab.

ARMY RESERVE OF OFFICERS.

Lt.-Col. W. A. Woodside, having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

TERRITORIAL ARMY.

Maj. W. H. P. Hey resigns his commn. and retains his rank with permission to wear the prescribed uniform.

Lt. E. R. Woodroofe to be Capt. (Prov.)

Lt. C. C. P. Anning is secd. under para. 137, T.A. Regns.

W. H. M. Jones and J. W. Murdoch to be Lts.

ROYAL AIR FORCE.

Flying Officer R. S. MacLatchy is transferred to the Reserve, Class D 2.

BRITISH DENTAL HOSPITAL.—The annual report shows that the work of the hospital in providing dental treatment and advice to expectant and nursing mothers and their young children through the medium of clinics established in conjunction with local authorities has been maintained at a high level. A dental clinic for [illegible] child welfare and tuberculous patients is also [illegible] to be opened in [illegible] at the [illegible] School Dental Treatment Centre [illegible] during 192[illegible]

Correspondence.

"Audi alteram partem."

HOSPITAL COMMITTEE VISITORS

To the Editor of THE LANCET.

SIR—The position of members of hospital committees, to whom the duty of visiting the hospital on behalf of the committee is delegated, is too vague I can quite understand that the responsibility must vary to some extent with every institution, that each committee might expect something particular from the visitor, and that each visitor might have his individual interpretation of what was wanted None the less, I think that if hospital visitors could have a general definition of what is required from them, so that they may be useful in reporting to their committees on the conduct of the institutions, they would be usefully served

Want of knowledge as to what is expected of a visitor is a stumbling-block to efficient inspection The visitor is nervous on the one hand lest he should be officious, and on the other lest he should fall short of what is required, while he has no *definite* place in hospital organisation Yet he occupies, or should do so, a place as a definite link between the outside public, as representing a lay committee, and the internal administration of the institution, its medical administrative and nursing services If his work is to be of practical value he should be expected to ask pertinent questions of the secretary or the matron, and if those questions concerned any of the minor officials or nursing staff he ought not to be considered to be exceeding his position. To demand explanations of detail requires tact, but tact should not go so far as to obscure truth

The hospital visitor should know what to observe and to whom he has a right to report needs or omissions, if only that he may obtain explanations, for these might show that the circumstances were not unknown, but that the remedy was not easy to find It would be the visitor's duty to collaborate with the hospital officials to discover the remedy Would it not be possible to suggest the kind of entries that should be made in a visitor's book, so that a record could be kept for the information of the hospital committee as to what the visitor thought required consideration and as to what the hospital officials had to say on the matter? In this way the committee would be informed whether the hospital official responsible in some concrete matter was the matron or the secretary, for at the present time hospital committees must often be in doubt of the particular origin in the administration of the institution of some default brought to their notice from outside As far as I know the relations of the hospital visitor to the secretary, to the matron, and even to his own committee in session are quite vague

A hospital visitor should have a *defined position*, so that he may not fall short of his duties, but particularly so that he should not incur the disagreeable reputation of exceeding them It should be understood that he is on the look-out to suggest improvements in equipment, whether they be merely to raise the standard of comfort or be gravely concerned with the provision for dying patients The amenities of the nurses' home and the administration of the kitchen are matters with which every visitor ought to be familiar He can only be so if he has a position giving him the right to ask questions He can only learn to ask the right questions by the consideration of the replies, and he will only receive useful and detailed replies if it is recognised that he has a right to ask the questions

I am sure that this matter is well worth the attention of hospital committees and hospital medical administrative and nursing services

I am Sir yours faithfully
A VISITOR

August 11th, 1926

SPRUE AND ADDISONIAN ANÆMIA.

To the Editor of THE LANCET

SIR,—In the very interesting and timely article by Dr Manson-Bahr and others in your issue of August 7th there occurs the remark "In Addisonian anæmia, the anæmia is due to disease of the blood-forming organs so that recovery is not dependent on the processes of digestion and assimilation, the glossitis and gastro-intestinal symptoms appear to be secondary to, or to follow on, the primary anæmia" This is a very old view which is, I imagine, generally abandoned to-day in favour of Hunter's theory of hæmolysis in the portal area as the primary factor It is certainly difficult to suppose that the glossitis is due to disease of the bone-marrow

But I only stress this point at the moment in order that the appropriate treatment of both conditions may not be hindered by unproven ætiological theories From the hæmatologist's point of view there is present in both cases an anæmia of hæmolytic type—in other words, hæmolysis is so active that hæmogenesis even when working to the limit (quick work is bad work as we see in the blood) cannot overtake the loss The treatment of this condition usually includes the giving of arsenic If this has some direct action on hæmolysis in Addisonian anæmia it will be as valuable in sprue as in Addisonian anæmia If it only acts in some indirect manner—e g, by inhibiting the growth of organisms in the alimentary canal or by neutralising their toxins—it may still be of use in both cases One is therefore surprised to read concerning arsenic, that "all observers agree upon its harmful effects" I have at the moment under my care a case of sprue in which arsenic seems to be of undoubted value I had another case in which the patient swallowed six days' allowance (54 minims of Fowler's solution) in one day, and it did him so much good that he forthwith returned for more. A week or two back I met an eminent specialist in tropical diseases in consultation over a case of severe sprue-anæmia, and he ordered iron and arsenic with no small emphasis The patient highly approves of the results

Even in Addisonian anæmia, it is possible to give arsenic with so little care that bad results follow, sometimes it is very difficult to avoid bad results, and at others the attacks of gastritis which often appear in this disease are attributed to arsenic But these facts do not outweigh the undoubted benefit in other cases Is it possible that in sprue also arsenic might find a place? The close resemblance between the diseases certainly suggests a careful trial If this has already taken place, I should be glad of any reference to an account of it

Might I also mention that long before the modern lamps were available I was accustomed to use what sunlight Nature provided in the treatment of anæmia and with excellent results This therapeutic weapon has been somewhat discredited of late by the works of unbalanced enthusiasts, but the sprue-anæmia would probably benefit as much as any other

I am, Sir, yours faithfully,
GORDON WARD

Sevenoaks, Kent, August 12th, 1926

PASTEURISATION OF MILK

To the Editor of THE LANCET.

SIR,—Your readers will be in close agreement with your correspondent, Mr T McLachlan, when he states that whenever pasteurised milk is sold to the public the purchaser should be informed of the fact This is the present practice of the leading London firms of distributors, in so far as bottled pasteurised milk is concerned For instance, every bottle of milk distributed by the dairies controlled by United Dairies, Limited, has the word "pasteurised" printed on the cap of the bottle It is obviously impossible to label the milk which is distributed in cans—a rapidly decreasing quantity. There is no trade desire to hide the fact of pasteurisation for it is recognised that in large towns deriving milk from long distances such pasteurisation is greatly in the public interest, for it ensures that the excellent collection of etchings and prints, the Ceramic Art Society and similar organisations gained much by his support For many years he enjoyed the friendship of Mr Arnold Bennett, and is said to have been the original of the Dr Stirling, of Bleakridge, who figures in that author's novels of the Five Towns

Medical News.

Final F R C S Eng Examination —Courses of instruction for the Final Examination for the Fellowship of the Royal College of Surgeons of England will commence on Wednesday, Sept 1st, at Guy's Hospital Medical School and at the London Hospital Medical College The fee in either case is 20 guineas, operative surgery 5 guineas extra Further particulars in our advertisement columns

University of Sydney Chair of Psychiatry —The Senate invites applications for the Chair of Psychiatry, of which we publish particulars in our advertisement columns The professor will be expected to enter on his duties on March 1st, 1927, and applications from the United Kingdom should be sent in proper form to the Agent-General for New South Wales before Sept 15th Applicants, it is stated, should have been trained in a mental hospital, and should be interested primarily in clinical rather than pathological work

National Institute for the Blind —The voluminous and well-illustrated report for the year ended March 31st, 1926, is a record of steady constructive progress It is, in fact, a small encyclopædia dealing with all aspects of the blind community The report has been compiled on new lines The first part is an account of the actual work accomplished during the year, including details of the Institute's endeavour to link up national and local work and of the scheme now adopted, with the approval of the Ministry of Health, to ensure that the distinctions "national" and "local" shall indicate relationship and not rivalry The second part is divided into sections each illustrative of some phase of work for the blind

Hospital Treatment of Encephalitis Sequels in Scotland —Encephalitis lethargica has been notifiable in Scotland since December of last year, and the disease in its acute stage has been dealt with in the hospitals provided for the treatment of infectious disease in general. The subsequent care of bedrid patients who still require special treatment and nursing is providing a difficult problem The Parish Council of Glasgow has now allotted 40 to 50 beds to these cases in a separate block of the Stobhill Hospital with a daily charge of 7*s* provisionally fixed Less suitable cases will be gradually eliminated so as to leave only those who urgently require the benefits of institutional care At the hospital the services of a mental specialist and of the council's pathologist will be available

Fellowship of Medicine and Post-Graduate Medical Association —On Monday, August 23rd, Queen Mary's Hospital will begin a two weeks' intensive course in medicine, surgery, and the specialties, this will include operations, lectures, and demonstrations in all departments of the hospital, which will be thrown open for the whole of each day There is a well-equipped pathological department and new maternity wards Every week the City of London Maternity Hospital holds a special course in obstetrics, instruction being given during the whole day. Personal application for this course must be made to the Secretary of the Fellowship During September arrangements will be as follows An intensive course covering all branches of medicine, surgery, and the specialties will be given at Westminster Hospital during the whole of each day from Sept 20th to Oct 2nd On Sept 13th the Infants Hospital will begin a course in the diseases of infants, lasting for two weeks, there will be lectures and demonstrations each afternoon and a visit has been arranged to Thavies Inn V D Centre on the Sunday At the Royal Free Hospital Dr C B Heald will give four lecture-demonstrations in treatment by electrotherapy on Wednesday, Sept 22nd, and the three succeeding Wednesdays, at 5 15 P M A course will be given at the Central London Ophthalmic Hospital from Sept 6th to Oct 2nd instruction being given every afternoon The Bethlem Royal Hospital staff will hold a series of lecture-demonstrations on Tuesdays and Saturdays at 11 A M from Sept 2nd to Oct 2nd An all-day course in orthopædics will be held at the Royal National Orthopædic Hospital from Sept 20th to Oct 2nd, covering all branches of the subject. Copies of all syllabuses, of the General Course programme, and of the *Post Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1 Wimpole street, London, W 1

Major Henry Edward Sutherland Richards, Chief Medical and Health Officer, has been appointed a member of the Executive Council of the Island of Grenada

The address of the Panel Committee for the County of London is now 17–18, Russell-square, W C 1 Telephone number Museum 9912

Dr J B Hurry, the founder of the Michael Foster studentship in physiology at the University of Cambridge, has increased its endowment by £100

Dr L J Witts, of the University of Manchester, has been elected to the John Lucas Walker studentship in pathology at Cambridge for three years, and Mr J O W Bland, Jesus College, to a second studentship for one year

Mr Basil Graves is to give an address on the Surgery of Senile Cataract at the thirty-first annual congress of the American Academy of Ophthalmology and Oto-Laryngology, which opens on Sept. 13th at Colorado Springs.

Dr Karl Henschen, who has been appointed to succeed the late Prof Hotz in the Chair of Surgery at the University of Basle, is surgeon to the Cantonal Hospital at St. Gall with the title of Professor at the University of Zurich

Princess Mary at Hartlepool Hospital.—On August 11th Princess Mary opened a new wing of this hospital named the Morison Wing, in honour of the late Dr A. E Morison, an energetic worker for the institution The new building has cost £10,000

The Laennec Centenary —On August 12th the hundredth anniversary of the death of Laënnec was celebrated at his native village of Ploaré, Finistère, Brittany. The French medical profession was strongly represented and a panegyric was delivered in Ploare church. Next December the centenary will be celebrated in Paris

Messrs Chapman and Hall have been preparing a book on "The Theory and Practice of Radiology," by Dr Bernard Leggett, but owing to a recent fire at the Whitefriars Press the whole work, almost completed, has been destroyed, and it will therefore be some months before it can be published.

The late Dr W A M Garry —Dr William Alfred MacMahon Garry, who died at his home in Liverpool on August 7th at the age of 62, was an Irishman by birth and studied medicine at Queen's College, Galway, and at the Catholic University, Dublin. Before settling in Liverpool, where he practised for 40 years, he was a resident in the Coombe Lying-in Hospital, Dublin, and assistant medical officer at the Salford Hospital. Dr Garry was especially well known to the Roman Catholic community and much of his time and professional skill was given to charitable causes He was hon physician to the House of Providence, Aigburth, and visiting physician at the Priory, Allerton, a home for feeble-minded and mentally defective children.

The Causation of Gout —The 115th annual report of the Devonshire Hospital and Buxton Bath Charity covers the period from Jan 1st, 1925, to March 31st, 1926 The report of the bacteriological department states that numerous determinations of the amount of calcium in the blood serum of gout cases were made, and that the results showed quite definitely that "there is no association of hypercalcæmia with uncomplicated gout"—the direct opposite of the results obtained in the small Bath series of Coates and Raiment It is suggested that some other factor, possibly connected with the parathyroid, accounted for the abnormal values obtained in the Bath series The blood analyses of gout cases indicate that, with the exception of certain nephritic cases, the carbonic acid content of the plasma in gout is not abnormally low and that a general lack of base in the circulating blood cannot be a factor in the deposition of uric acid in the tissues. A special report is being prepared.

The late Dr K C Gimson —Dr Karl Carwardine Gimson, of Witham, who died suddenly on August 3rd, was a son of the late Dr Gimson Gimson of Witham, and was born in 1866 He received his medical education at Cambridge and St Bartholomew's Hospital graduating at Cambridge in 1891 After making several voyages to the Far East as ship's surgeon he joined his father in practice. When his father died 26 years ago Dr K C Gimson with one of his two medical brothers took over the practice which became very large Whilst his brother was away at the war he carried on the work by himself and in addition to his ordinary duties, acted as medical officer to the temporary war hospital at Bridge Home He was a keen sportsman shooting cricket fishing, and golf being his principal recreations and was a generous supporter of any kind of work for the benefit of his fellow townsmen Dr Gimson was a bachelor

Obituary.

ROBERT HENRY COLE, M D, F R C P LOND

THE death of Dr R. H Cole, which we recorded last week, removes a much respected authority on mental disease from the ranks of London consulting physicians

Robert Henry Cole was the eldest son of the late Mr R C Cole, of Ealing, and was born in 1866 He was destined for the Civil Service, and for a short time worked as a clerk in the India Office. He qualified in medicine nevertheless, at the age of 23, and after holding a house appointment at St Mary's Hospital, took up the special study of psychiatry to which the rest of his life was devoted Thirty-six years of association with Moorcroft House began with his appointment as resident physician soon after leaving St Mary's, and in the years during which he held this post he won a high reputation for clinical skill and for the helpful care which he bestowed on his patients He always made remarkably good use of his time; he read a great deal and he was keenly interested in his specialty. In 1907 he began to engage exclusively in consulting practice, and soon afterwards was appointed physician for mental diseases to St Mary's Hospital and lecturer in the medical school. He later became an examiner in mental diseases and psychology in the University of London, and held several other appointments, including those of Home Office Visitor to the State Inebriate Reformatory at Aylesbury, visitor to the approved institutions for the mentally defective in Middlesex, and lecturer in mental diseases at Bethlem Royal Hospital His considerable experience is embodied in the well-known text-book on mental diseases which he wrote—now in its third edition—whilst his knowledge of, and sympathy with, modern views on psychology and treatment were shown in his presidential address to the Section of Psychiatry of the Royal Society of Medicine recently published in our columns [1] This thoughtful comment on the progress of the last 30 or 40 years is evidence of a wide outlook, and is written in his characteristic style

For the Royal Medico-Psychological Association Dr Cole did a great deal of painstaking work At the time of his death he was chairman of the Parliamentary Committee of the Association, in which office his acquaintance with the legal relations of insanity were very valuable Intimate knowledge of the history of lunacy legislation enabled him to offer wise counsel, and the Association owes a great deal to him "His place" writes one of his colleagues, "will be hard to fill Those who knew him will miss his genial and kindly presence Unchanging loyalty was the most striking feature of his friendship He always gave unsparingly of his best, and was accustomed to take immense pains with his patients, on whose behalf he laboured without counting the cost in time and trouble And his younger colleagues would seek his advice constantly, knowing that he would appreciate their problems and help them in every possible way"

Dr Cole leaves a widow, a son, and a daughter

JOHN FRANCIS HALL-EDWARDS,
L R C P EDIN, D M R E CAMB, F R S EDIN

Dr J. F Hall-Edwards, who died at Edgbaston on August 15th, was one of the first medical men in this country to use X rays, and like many others who have worked with unknown materials for the advancement of knowledge, he had to pay heavily for an adventure which has benefited other people In the first few years of this century he contracted dermatitis by exposure to X rays, but his courage and enthusiasm were such that in spite of increasing disability he carried on with his work until recently

The son of Dr John Edwards, of Sparkbrook, John Hall-Edwards was born in 1858 and was educated at King Edward's School and at Queen's College, Birmingham, where he acted as assistant demonstrator in physiology for two years At the age of 27 he took the diploma of L R C P Edin, and settled in practice at Moseley His hobby was photography, and he soon became a leading light in the local photographic societies, publishing papers on microphotography and kindred subjects When, in 1896, Rontgen published his discovery of X rays, Hall-Edwards brought a well-prepared mind to the study of their application to medicine and surgery He was soon writing articles on their use, and in 1889 was appointed surgeon-radiographer to the General Hospital and other Birmingham institutions In the following year he went out to South Africa and successfully organised a radiological service for the Imperial Yeomanry Hospitals at Deelfontein and Pretoria At this time, unfortunately, no precautions were taken against X ray burns, and Hall-Edwards began to suffer from their effects soon after his return The dermatitis was progressive and after six years of suffering he had his left arm amputated, later he lost four fingers of the right hand as well In 1908 his sacrifices in the furtherance of radiology were recognised by the grant of a Civil List pension

The outbreak of the late war found Hall-Edwards ready and anxious for further service, and he did good work as radiologist to the 1st and 2nd Birmingham War Hospitals and the Monyhull Military Hospital, he held a temporary commission as Major in the Royal Army Medical Corps and was twice mentioned. At the end of the war he continued to practise as radiologist in Birmingham and even took the diploma of radiological medicine at the University of Cambridge in 1920 Two years later the Carnegie Hero Trust medallion was awarded to him, and in the present year he was elected an honorary member of the British Medical Association He was also at one time *President of the British Electro*-therapeutic Society, and editor of *Archives of the Rontgen Ray* Enthusiasm for his work, however, did not make him a man of one idea After the war he served usefully on the corporation of the city of Birmingham and was a member of the Art Gallery Committee Originally he had intended to be an artist himself, and during the last few years he took up painting again, holding the brushes between the thumb of his right hand and an artificial finger Some of his work was shown at the exhibition by medical men at the Royal Society of Medicine in 1924

JOHN RUSSELL, O B E, M B. ABERD

Dr John Russell, who died on August 10th at the age of 64, was for many years one of the best-known medical men in the Potteries, he practised in Burslem until last year, when he retired to Grantown-on-Spey Born at Insch in Aberdeenshire, he was educated at the University of Aberdeen, where he graduated in arts in 1883 and in medicine three years later He also studied in Dublin Forty years ago he went to Burslem and soon established a large private practice and entered upon many public appointments At the time of his death he was consulting physician to the North Staffordshire (now the Royal) Infirmary and to the Haywood Hospital, Burslem, and *for many* years he was public vaccinator, police surgeon, and medical officer of health for *the* Burslem district. Several pottery manufacturers appointed him their adviser on industrial diseases He was at one time President of the North Staffordshire Medical Society and of the Staffordshire branch of the British Medical Association and *as assistant* county director of the British Red *Cross* Society did good work during the war in connexion with convoys of wounded to the *local hospitals For* this and other public services he was made an officer of the Order of the British Empire Dr Russell's life in Burslem was full of interests For some time he was a captain in the Volunteers, he was keen on every kind of sport, and was a popular member of local clubs and societies He read extensively, had a good library and an excellent collection of etchings and prints: the Ceramic Art Society and similar organisations gained much by his support For many years he enjoyed the friendship of Mr. Arnold Bennett and is said to have been the original of the Dr. Stirling, of Bleakridge who figures in that author's novels of the Five Towns.

---

[1] THE LANCET, July 24th, p 166

Medical News.

FINAL F R C S ENG EXAMINATION.—Courses of instruction for the Final Examination for the Fellowship of the Royal College of Surgeons of England will commence on Wednesday, Sept 1st, at Guy's Hospital Medical School and at the London Hospital Medical College. The fee in either case is 20 guineas, operative surgery 5 guineas extra. Further particulars in our advertisement columns.

UNIVERSITY OF SYDNEY: CHAIR OF PSYCHIATRY — The Senate invites applications for the Chair of Psychiatry, of which we publish particulars in our advertisement columns. The professor will be expected to enter on his duties on March 1st, 1927, and applications from the United Kingdom should be sent in proper form to the Agent-General for New South Wales before Sept. 15th. Applicants, it is stated, should have been trained in a mental hospital, and should be interested primarily in clinical rather than pathological work.

NATIONAL INSTITUTE FOR THE BLIND —The voluminous and well-illustrated report for the year ended March 31st, 1926, is a record of steady constructive progress. It is, in fact, a small encyclopædia dealing with all aspects of the blind community. The report has been compiled on new lines. The first part is an account of the actual work accomplished during the year, including details of the Institute's endeavour to link up national and local work and of the scheme now adopted, with the approval of the Ministry of Health, to ensure that the distinctions "national" and "local" shall indicate relationship and not rivalry. The second part is divided into sections each illustrative of some phase of work for the blind.

HOSPITAL TREATMENT OF ENCEPHALITIS SEQUELS IN SCOTLAND —Encephalitis lethargica has been notifiable in Scotland since December of last year, and the disease in its acute stage has been dealt with in the hospitals provided for the treatment of infectious disease in general. The subsequent care of bedrid patients who still require special treatment and nursing is providing a difficult problem. The Parish Council of Glasgow has now allotted 40 to 50 beds to these cases in a separate block of the Stobhill Hospital with a daily charge of 7s provisionally fixed. Less suitable cases will be gradually eliminated so as to leave only those who urgently require the benefits of institutional care. At the hospital the services of a mental specialist and of the council's pathologist will be available.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION —On Monday, August 23rd, Queen Mary's Hospital will begin a two weeks' intensive course in medicine, surgery, and the specialties; this will include operations lectures, and demonstrations in all departments of the hospital, which will be thrown open for the whole of each day. There is a well-equipped pathological department and new maternity wards. Every week the City of London Maternity Hospital holds a special course in obstetrics, instruction being given during the whole day Personal application for this course must be made to the Secretary *of* the Fellowship During September arrangements will be as follows: An intensive course covering all branches of medicine, surgery and the specialties will be given at Westminster Hospital during the whole of each day from Sept. 20th to Oct. 2nd. On Sept. 13th the Infants Hospital will begin a course in the diseases of infants, lasting for two weeks: there will be lectures and demonstrations each afternoon and a visit has been arranged to Thames Inn V.D. Centre on the Sunday At the Royal Free Hospital Dr. C B Heald will give four lecture-demonstrations in treatment by electrotherapy on Wednesday, Sept. 22nd, and the three succeeding Wednesdays, at 5 15 P.M. A course will be given at the Central London Ophthalmic Hospital from Sept. 6th to Oct. 2nd, instruction being given every afternoon. The Bethlem Royal Hospital staff will hold a series of lecture-demonstrations on Tuesdays and Saturdays at 11 A.M. from Sept. 2nd to Oct. 2nd. An all-day course in orthopædics will be held at the Royal National Orthopædic Hospital from Sept. 20th to Oct. 2nd, covering all branches of the subject. Copies of all syllabuses, of the General Course programme, and of the *Post-Graduate Medical Journal* may be had from the Secretary of the Fellowship at 1 Wimpole-street London, W 1.

Major Henry Edward Sutherland Richards Chief Medical and Health Officer, has been appointed a member of the Executive Council of the Island of Grenada.

THE address of the Panel Committee for the County of London is now 17–18, Russell-square, W.C. 1. Telephone number, Museum 9942

Dr. J. B. Hurry, the founder of the Michael Foster studentship in physiology at the University of Cambridge, has increased its endowment by £100

Dr L J Witts, of the University of Manchester, has been elected to the John Lucas Walker studentship in pathology at Cambridge for three years, and Mr. J. O W. Bland, Jesus College to a second studentship for one year

Mr. Basil Graves is to give an address on the Surgery of Senile Cataract at the thirty-first annual congress of the American Academy of Ophthalmology and Oto-Laryngology, which opens on Sept. 13th at Colorado Springs

Dr. Karl Henschen, who has been appointed to succeed the late Prof. Hotz in the Chair of Surgery at the University of Basle, is surgeon to the Cantonal Hospital at St. Gall with the title of Professor at the University of Zurich.

PRINCESS MARY AT HARTLEPOOL HOSPITAL.—On August 11th Princess Mary opened a new wing of this hospital named the Morison Wing, in honour of the late Dr. A. E. Morison, an energetic worker for the institution. The new building has cost £10,000.

THE LAENNEC CENTENARY.—On August 12th the hundredth anniversary of the death of Laënnec was celebrated at his native village of Ploaré, Finistère, Brittany. The French medical profession was strongly represented and a panegyric was delivered in Ploaré church. Next December the centenary will be celebrated in Paris.

Messrs. Chapman and Hall have been preparing a book on "The Theory and Practice of Radiology," by Dr Bernard Leggett, but owing to a recent fire at the Whitefriars Press the whole work, almost completed, has been destroyed, and it will therefore be some months before it can be published.

THE LATE DR. W. A. M. GARRY.—Dr. William Alfred MacMahon Garry, who died at his home in Liverpool on August 7th at the age of 62, was an Irishman by birth and studied medicine at Queen's College, Galway, and at the Catholic University, Dublin. Before settling in Liverpool, where he practised for 40 years, he was a resident in the Coombe Lying-in Hospital, Dublin, and assistant medical officer at the Salford Hospital. Dr. Garry was especially well known to the Roman Catholic community and much of his time and professional skill was given to charitable causes. He was hon. physician to the House of Providence, Aigburth, and visiting physician at the Priory, Allerton, a home for feeble-minded and mentally defective children.

THE CAUSATION OF GOUT.—The 115th annual report of the Devonshire Hospital and Buxton Bath Charity covers the period from Jan. 1st, 1925, to March 31st, 1926. The report of the bacteriological department states that numerous determinations of the amount *of calcium* in the blood serum of gout cases were made, and that the results showed quite definitely that "there is no association of hypercalcæmia with uncomplicated gout"—the direct opposite of the results obtained in the small Bath series of Coates and Raiment. It is suggested that some other factor, possibly connected with the parathyroid, accounted for the abnormal values obtained in the Bath series. The blood analyses of gout cases indicate that, with the exception of certain nephritic cases, the carbonic acid content of the plasma in gout is not abnormally low and that a general lack of base in the circulating blood cannot be a factor in the deposition of uric acid in the tissues. A special report is being prepared.

THE LATE DR. K. C GIMSON.—Dr. Karl Carwardine Gimson, of Witham, who died suddenly on August 3rd, was a son of the late Dr. Gimson Gimson, of Witham, and was born in 1866 He received his medical education at Cambridge and St. Bartholomew's Hospital, graduating at Cambridge in 1891. After making several voyages to the Far East as ship's surgeon he joined his father in practice. When his father died 26 years ago Dr. K. C. Gimson, with one of his two medical brothers took over the practice, which became very large. Whilst his brother was away at the war he carried on the work by himself, and, in addition to his ordinary duties acted as medical officer to the temporary war hospital at Bridge Home. He was a keen sportsman, shooting cricket, fishing, and golf being his principal recreations, and was a generous supporter of any kind of work for the benefit of his fellow-townsmen. Dr. Gimson was a bachelor.

Obituary.

ROBERT HENRY COLE, M D , F R C.P. LOND

THE death of Dr R H Cole, which we recorded last week, removes a much respected authority on mental disease from the ranks of London consulting physicians

Robert Henry Cole was the eldest son of the late Mr R C Cole, of Ealing, and was born in 1866 He was destined for the Civil Service, and for a short time worked as a clerk in the India Office He qualified in medicine, nevertheless, at the age of 23, and after holding a house appointment at St Mary's Hospital, took up the special study of psychiatry to which the rest of his life was devoted Thirty-six years of association with Moorcroft House began with his appointment as resident physician soon after leaving St Mary's, and in the years during which he held this post he won a high reputation for clinical skill and for the helpful care which he bestowed on his patients He always made remarkably good use of his time; he read a great deal and he was keenly interested in his specialty. In 1907 he began to engage exclusively in consulting practice, and soon afterwards was appointed physician for mental diseases to St Mary's Hospital and lecturer in the medical school He later became an examiner in mental diseases and psychology in the University of London, and held several other appointments, including those of Home Office Visitor to the State Inebriate Reformatory at Aylesbury, visitor to the approved institutions for the mentally defective in Middlesex, and lecturer in mental diseases at Bethlem Royal Hospital His considerable experience is embodied in the well-known text-book on mental diseases which he wrote—now in its third edition—whilst his knowledge of, and sympathy with, modern views on psychology and treatment were shown in his presidential address to the Section of Psychiatry of the Royal Society of Medicine recently published in our columns [1] This thoughtful comment on the progress of the last 30 or 40 years is evidence of a wide outlook, and is written in his characteristic style

For the Royal Medico-Psychological Association Dr Cole did a great deal of painstaking work At the time of his death he was chairman of the Parliamentary Committee of the Association, in which office his acquaintance with the legal relations of insanity were very valuable Intimate knowledge of the history of lunacy legislation enabled him to offer wise counsel, and the Association owes a great deal to him "His place," writes one of his colleagues, "will be hard to fill Those who knew him will miss his genial and kindly presence Unchanging loyalty was the most striking feature of his friendship He always gave unsparingly of his best, and was accustomed to take immense pains with his patients, on whose behalf he laboured without counting the cost in time and trouble And his younger colleagues would seek his advice constantly, knowing that he would appreciate their problems and help them in every possible way"

Dr Cole leaves a widow, a son, and a daughter

JOHN FRANCIS HALL-EDWARDS,
L R C P EDIN , D M R E CAMB , F R S EDIN

Dr J F Hall-Edwards, who died at Edgbaston on August 15th, was one of the first medical men in this country to use X rays, and like many others who have worked with unknown materials for the advancement of knowledge, he had to pay heavily for an adventure which has benefited other people In the first few years of this century he contracted dermatitis by exposure to X rays, but his courage and enthusiasm were such that in spite of increasing disability he carried on with his work until recently.

The son of Dr John Edwards, of Sparkbrook, John Hall-Edwards was born in 1858 and was educated at King Edward's School and at Queen's College, Birmingham, where he acted as assistant demonstrator in physiology for two years At the age of 27 he took the diploma of L R C P Edin., and settled in practice at Moseley. His hobby was photography, and he soon became a leading light in the local photographic societies, publishing papers on microphotography and kindred subjects When, in 1896, Rontgen published his discovery of X rays, Hall-Edwards brought a well-prepared mind to the study of their application to medicine and surgery He was soon writing articles on their use, and in 1899 was appointed surgeon-radiographer to the General Hospital and other Birmingham institutions In the following year he went out to South Africa and successfully organised a radiological service for the Imperial Yeomanry Hospitals at Deelfontein and Pretoria At this time, unfortunately, no precautions were taken against X ray burns, and Hall-Edwards began to suffer from their effects soon after his return. The dermatitis was progressive and after six years of suffering he had his left arm amputated, later he lost four fingers of the right hand as well In 1908 his sacrifices in the furtherance of radiology were recognised by the grant of a Civil List pension

The outbreak of the late war found Hall-Edwards ready and anxious for further service, and he did good work as radiologist to the 1st and 2nd Birmingham War Hospitals and the Monyhull Military Hospital; he held a temporary commission as Major in the Royal Army Medical Corps and was twice mentioned At the end of the war he continued to practise as radiologist in Birmingham and even took the diploma of radiological medicine at the University of Cambridge in 1920 Two years later the Carnegie Hero Trust medallion was awarded to him, and in the present year he was elected an honorary member of the British Medical Association He was also at one time President of the British Electro-therapeutic Society, and editor of *Archives of the Rontgen Ray* Enthusiasm for his work, however, did not make him a man of one idea After the war he served usefully on the corporation of the city of Birmingham and was a member of the Art Gallery Committee Originally he had intended to be an artist himself, and during the last few years he took up painting again, holding the brushes between the thumb of his right hand and an artificial finger Some of his work was shown at the exhibition by medical men at the Royal Society of Medicine in 1924

JOHN RUSSELL, O B E , M B. ABERD

Dr John Russell, who died on August 10th at the age of 64, was for many years one of the best-known medical men in the Potteries, he practised in Burslem until last year, when he retired to Grantown-on-Spey Born at Insch in Aberdeenshire, he was educated at the University of Aberdeen, where he graduated in arts in 1883 and in medicine three years later He also studied in Dublin Forty years ago he went to Burslem and soon established a large private practice and entered upon many public appointments At the time of his death he was consulting physician to the North Staffordshire (now the Royal) Infirmary and to the Haywood Hospital, Burslem, and for many years he was public vaccinator, police surgeon, and medical officer of health for the Burslem district. Several pottery manufacturers appointed him their adviser on industrial diseases He was at one time President of the North Staffordshire Medical Society and of the Staffordshire branch of the British Medical Association, and as assistant county director of the British Red Cross Society did good work during the war in connexion with convoys of wounded to the local hospitals For this and other public services he was made an officer of the Order of the British Empire Dr. Russell's life in Burslem was full of interests For some time he was a captain in the Volunteers, he was keen on every kind of sport, and was a popular member of local clubs and societies He read extensively, had a good library and an

---

[1] THE LANCET, July 24th, p 166

Notes, Comments, and Abstracts.

MEDICINE IN MEXICO

By Frances E Smith, M R C S Eng

During a private visit to Mexico last year I saw a good deal of the condition of medical practice there, which may be worth describing

The country has every kind of climate, from tropical on the coast to temperate further inland, and away from the populous areas it is very wild indeed Though good medical advice is to be had in the towns it is usually unobtainable elsewhere The best medical treatment is found in the capital, Mexico City, conditions in which I shall describe first.

Mexico City

There are several hospitals, the most modern being the Cowdray Sanatorium, also known as the English Hospital This is endowed by Lord and Lady Cowdray and was completed some three years ago It is situated in beautiful and healthy country just outside the city and has accommodation for 50 patients The equipment includes an isolation ward, laboratories, two theatres—one of them an obstetric theatre—and excellent quarters for the nursing staff The matron is British and the nurses British or American The Trust Deed provides for the appointment of a resident medical officer, but it was decided to do without one All the patients are private cases ; they are attended by their own doctors, and most of them have their own rooms or suites Emergency cases are in the hands of the matron and her staff until the particular surgeon arrives There are two wards for poor patients, the cost of whose maintenance is defrayed by societies The charges for room and board vary from $6 Mex. a day for a bed in a common ward to $50 a day for a suite ($1 Mex =1 peso, worth about 2*s*) The average charge is between $10 and $12 per day The chief other hospitals are the American, the French, and three native hospitals, one of which is under the Red Cross The American and French hospitals are in what were once large private houses, and the American has a pathological department which is at the disposal of practitioners One of the native hospitals has been in existence since the time of Cortes who conquered Mexico in 1521

Private practice is carried on in much the same way as in England There are large numbers of Mexican doctors, graduates of the University of Mexico, many of whom have had European or American experience, are competent and have large practices The foreigners are mostly American, but there are also English, French, German, and Spanish practitioners The city has numerous good surgeons, specialists, and dentists Fees are adjusted to the means of the patients A prosperous business man pays $5 Mex. for a visit to the consulting-room and $10 if the doctor comes to the house (These fees were paid to a well-known American practitioner, but I am told that Mexican doctors do not charge so much.) Foreigners generally go to a doctor of their own nationality In comparing these fees with those in England it should be remembered that the cost of living in Mexico just now is roughly twice as high as in the United Kingdom. Mexico City is, moreover, a prosperous place and sometimes large sums are asked and given A high official of a commercial company was charged $1500 Mex by a foreign doctor for attending a case of typhoid. Advertising by members of the medical profession is common, it is chiefly done through the newspapers or by notices in hotels Foreigners are required to take the examinations of the University of Mexico before being allowed to practise

The Red Cross Society, supported by public subscription, seems to be well organised , it has its own hospital, and ambulances arrive promptly on the scene of an accident I saw an aeroplane crash in a field well outside the city, and within five minutes there were present two ambulances and three carloads of police A small boy was operated on at the hospital within 20 minutes of having his leg crushed in the street

Health propaganda is carried on freely, and at times whole pages of the newspapers are devoted to suitable subjects, such as trachoma

Charlatanism is rife. Chiropractors, osteopaths, naturopaths, and others are found everywhere. Their nationality varies , many have had to leave the United States and find in Mexico a lucrative field. They advertise in most of the periodicals and newspapers, and by means of pamphlets distributed in the streets

Health of Poor People

The native Mexican leads a very primitive life He lives with his family in a shack of wood or leaves whose floor is the bare earth His chief possessions are the clothes on his back, his blanket, a gun, a dog (starving and mangy), and a few chickens The family has also some cooking utensils and a charcoal stove Maize is grown around the hut and beans and chiles from the local market complete the staple diet The sunny climate makes this sort of life possible, but great hardships are undergone during cold or rainy weather

Infant mortality is high Although the average Mexican adores his children, the babies are fed unwisely on chiles beans, hot sauces and other adult food, much of which is greasy As a result, they suffer so much from malnutrition and digestive disturbances that they are usually puny creatures, especially in the towns Exposure to cold occurs during the rainy season (July to September), and sometimes during the winter months The results are often disastrous, children, and even adults, being found dead after a cold spell During these times the mortality from pneumonia is very high , the Mexican shows a very poor resistance to pneumonia and tuberculosis, and in Mexico City a common cold often ends in pneumonia, both amongst natives and foreigners

Digestive troubles are very common everywhere The chief cause is general over-eating of heavy rich foods, sweet things being much liked Another cause is irregular eating , a walk through the streets is punctuated by small purchases of candies, pastries, and fruits, which are sold everywhere at little stalls

Deformities of all kinds are seen Most deformed people are beggars, and begging is a profession. It is said that babies are prevented from having treatment, and even deliberately deformed, in order to be made beggars, and I have seen the most extreme cases of all kinds—old infantile paralyses, Little's disease, spinal curvatures, and all forms of tuberculous deformities—such as are rarely to be found in England Beggars are everywhere—in the streets, outside churches, and on the country roads Many are unable to use crutches, and drag themselves along very efficiently on their knees and hands protected by guards of wood and leather Most of them are well cared for and often their cotton clothes are spotlessly white Blindness, scars, wounds, and amputation stumps are all exploited

Rural Mexico

San Luis Potosi, Monterey, Orizaba, and Tampico are the principal towns outside Mexico City itself, and the above remarks may be said in general to apply to them There are few hospitals, however, in these towns and few in the "hot country," though Tampico has two and there are a certain number in connexion with industrial concerns Private practice exists everywhere, and in the larger towns there are English and American doctors as well as Mexican. Malaria is common all along the coast and sometimes bad cases have to go up to Mexico City to obtain relief from the repeated attacks Yellow fever occurs in the more southern regions, including the Isthmus of Tehuantepec and Yucatan, and typhoid is also very prevalent

Snakes, tarantulas, and alacrans abound everywhere. Chiggers (sand fleas) cause a lot of trouble, the female penetrating under the skin of the foot or hand, especially at the nails, and producing intense irritation Unless the patient is prepared to wait until the insect sloughs out, it is best removed by enucleation, which is often neatly done by native women, who fill up the hole left with tobacco ash

The plain of Mexico on which the capital is situated is about 7500 feet above sea-level The effects of the altitude on newcomers and inhabitants vary, but severe symptoms are uncommon, the most usual being drowsiness, headache, shortness of breath on exertion, nausea, and indigestion. A person usually experiences one or two of these symptoms on arrival, but they pass off after a few days Rowing and football are very strenuous games at this altitude and races at a recent regatta were rowed over a shorter course than at home

ILLUMINATION AND VISUAL ACUITY

A COMMITTEE of the Medical Research Council is at work studying problems involving questions of vision Their first task has been to publish an analysis of the more recent work upon the relation of illumination and visual capacities, prepared by Mr R J Lythgoe (H M Stationery Office 2*s* 6*d*) The works analysed are monographs by European or American writers, and their subjects include the influence of different intensities of illumination on visual acuity, the effect of varying the character of illumination on visual acuity, the discrimination of differences of brightness adaptation as a factor in visual discrimination, the influence of lateral illumination including "glare" on visual judgments, the speed of retinal impression, the influence of illumination on the discrimination of colours, and lastly visual fatigue The utility of the brochure consists in its concise summaries of recent work on all these subjects and a good bibliography Its avowed object is not to present a final pronouncement on any of these subjects but to afford help to other workers

MEDICAL REGISTRATION IN IRELAND —An order has been made by the Executive Council of the Irish Free State continuing the existing arrangements for medical registration for the period of one month.

CENTENARY OF THE COOMBE LYING-IN HOSPITAL, DUBLIN —The centenary of the Coombe Hospital will be celebrated from Tuesday, Sept 14th, to Friday, Sept. 17th Dr Louis Cassidy is acting as hon secretary and will be glad to send further information to those interested His address is 6, Kildare-street, Dublin We hope later to publish details of the programme

RAILWAYMEN SUPPORT HOSPITALS —The majority of the staff of the London, Midland and Scottish Railway, comprising about a quarter of a million workers, contribute 2*d* per week to the L.M S Hospital Fund , this is deducted through the paybills The directors of the company augment the sum by another 1*d* , and a total amount of £136,000 was by these means contributed last year The privileges of membership include admission to any hospital in the country for the member himself and for his wife and children. In addition, the railwaymen (of all companies) maintain seven convalescent homes of their own. The railway directors have now handed over the management of the fund to the staff, and on the committee of 13 they have only one representative.

THE LATE DR O J CAREGAN —Dr Owen Joseph Caregan, who died on August 7th at his home in Ormskirk, was a native of Liverpool and studied at the Liverpool School of Medicine and at the University College He qualified L R C P & S Edin in 1892, and was for a time junior house surgeon at Bootle Borough Hospital. After going as assistant to the late Dr Walsh, of Ormskirk, he settled in that town and soon had a large practice there as well as in West Lancashire generally, being appointed surgeon to the Ormskirk Cottage Hospital, certifying factory surgeon, and medical referee to several assurance companies He worked in the district for over 30 years, and although not in good health continued to practise up till the week of his death. Dr. Caregan was 64 years of age and leaves a widow

Medical Diary.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole street, W

MONDAY, August 23rd, to SATURDAY, August 28th —QUEEN'S HOSPITAL FOR CHILDREN, Hackney road, Bethnal Green, E Course in Diseases of Children. Lectures and demonstrations all day, and work available in all departments (second week) —QUEEN MARY'S HOSPITAL, Stratford, E Course in Medicine, Surgery, and the Specialties Lectures and demonstrations all day for two weeks in all departments Operations Further particulars from the Secretary of the Fellowship

POST-GRADUATE HOSTEL, Imperial Hotel, Russell square, W C

TUESDAY, August 24th —9 P M Mr W McAdam Eccles will open a discussion on When not to Operate for Hernia

THURSDAY —9 P M , Mr R J McNeill Love will open a discussion on the Treatment of Acute Appendicitis

Appointments.

JONES, D W , M R C S , L R.C P Lond., has been appointed one of the Medical Referees under the Workmen's Compensation Act for the County Courts Districts of Pocklington, Selby, Beverley, Bridlington, Goole, Great Driffield, Howden, and Kingston-upon-Hull

SLOT, GERALD, M D , M R C P Lond , D.P H., Honorary Physician to the Royal Hospital, Richmond

THIERENS, MILDRED M., M B , Ch B Liverp , Asst Medical Officer of Health for Maternity and Child Welfare, Batley

WEST, B A , M D Belf , D P H , Certifying Surgeon under the Factory and Workshop Acts for the Epperstone District of the County of Nottingham

Vacancies.

For further information refer to the advertisement columns

Birkenhead and Wirral Children's Hospital, Woodchurch-road —H S £100

Birmingham, Queen's Hospital —H P At rate of £70

Bootle Borough Hospital —Sen M O and two Jun M O's £150 and £125 respectively

Bradford, Municipal General Hospital, St Luke's —H P.'s and H S 's Each at rate of £200

Bridgend, Glamorgan County Mental Hospital —Jun Asst M.O £350

Brighton, New Sussex Hospital, Windlesham road —H S At rate of £50.

Bristol General Hospital —H P.'s, H S 's, &c Each at rate of £80

Bristol Royal Infirmary —H P 's, H S 's, &c Each at rate of £80

Bristol University —Asst to Professor of Surgery £400

Cardiff, Prince of Wales's Hospital —H S £100

City of London Hospital for Diseases of Heart and Lungs, Victoria-park, E —Asst Tuberculosis O £600

Edinburgh, Royal Mental Hospital, Morningside —Asst M O £350

Essex, Administrative County of —Asst County M O H £600

Halifax County Borough —Tuberculosis O £650

Infants Hospital, Vincent-square, Westminster —Jun Anæsth.

Leicester Royal Infirmary —H P At rate of £120

Leicestershire County Council —County M.O H £1200

Maidstone, Kent County Mental Hospital.—Asst M O £300

Manchester, Royal Children's Hospital, Gartside street —Asst. M.O At rate of £150

Manchester, Royal Children's Hospital, Pendlebury —Res M.O At rate of £120

Manchester Royal Eye Hospital —Jun H S £120

Mildmay Mission Hospital, Austin street, Bethnal Green, E —Hon Dental S

Oxford, Radcliffe Infirmary and County Hospital —H.P and Cas H S Each at rate of £120

Poplar Hospital for Accidents, East India Dock road, Poplar, E —Second Res O £175

Queen's Hospital for Children, Hackney road, E —P for Skin Dept Also H P and H S Each at rate of £100

Royal National Orthopædic Hospital, 234, Great Portland street, W —H S At rate of £150

St Mary's Hospital, W —Asst M O for X Ray Dept

Sheffield University (Dept of Pathology) —Asst Bacteriologist £300

Sydney University, New South Wales, Australia —Professorship of Psychiatry £1100

Taunton Rural District, &c —M O H &c £800

West London Hospital, Hammersmith road, W —One H P and Two H S 's Each at rate of £100

Willesden General Hospital —Cas O. At rate of £120

Wolverhampton and Staffordshire Hospital,—H S At rate of £150

Worcester General Infirmary —Jun. Res M O £120

The Chief Inspector of Factories announces vacant appointments for Certifying Factory Surgeons at Burntisland (Fifeshire), and Tibshelf (Derbyshire)

Births, Marriages, and Deaths.

BIRTHS

BEAUMONT —On August 11th, at Welbeck street, the wife of Dr Beaumont, of Swains lane, Highgate, of a son

COOK —On August 11th, at "Marven," Uplyme, Lyme Regis, the wife of Dr P N Cook, of a daughter

CRANSTOUN —On August 12th, at Perry Hill, Worplesdon, the wife of Dr G Cranstoun, of a son

DUFFUS —On August 7th at a nursing home, Aberdeen, the wife of Dr Allan A. Duffus, Gilling Lodge, Watford, Herts, of a son

FLEMING —On August 9th, at Red House, Staines road, Bedfont Middlesex, Dr Muriel Fleming, the wife of Dr Arthur Fleming, of a son

MARSHALL.—On August 7th, at The Grove, Heacham, Norfolk, the wife of Philip Sydney Marshall, M R.C S , D P H., of a daughter

MARRIAGES

NOAKES—GERARD —On July 21st at The Oratory of the Sacred Heart, Bournemouth, by the Rev Joseph Flynn (with Nuptial Mass), Basil Henry Noakes, of The Rest Brockenhurst, to Mary Josephine Gerard (Minnie), of Devonshire House, Bournemouth

ROWAND—NAISMITH.—On August 4th, at the Parish Church, Fortingal, Andrew Rowand, M D , James Mackenzie Institute, St Andrews, to Edith Mary, widow of W J Naismith, M D , D S O , and youngest daughter of the late Prof. W R Sanders, Edinburgh University

DEATHS

CALLENDER —On August 14th, at Inverard, Sidcup, Kent, Thomas Marshall Callender M D , F R C S E , aged 52

HARRIS —On August 12th, at Frome, Andrew Harris, M B E., F R C S I , aged 63 years

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

INDEX TO "THE LANCET," VOL I, 1926

THE Index and Title-page to Vol I, 1926, which was completed with the issue of June 26th, is now ready A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of THE LANCET, 1, Bedford-street, Strand, W C 2 Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now

STUDENTS' GUIDE—SESSION 1926-1927.

THE scheme upon which the Students' Number of THE LANCET is constructed will make it easy, we hope, for all who consult it to find what they seek The General Council of Medical Education and Registration is the controlling authority of all the medical and dental education of the country, and its responsibility for the upkeep of the Medical Register and for the maintenance of the examination standard is first explained.

But the student has to be taught as well as examined, and as the systems under which instruction can be obtained do not conform to one pattern, the various curricula are described in detail, and under their respective headings the necessary information will be found concerning the facilities for medical study offered at the different teaching centres of the United Kingdom The regulations for the examinations, both preliminary and professional, at these centres are set out so that the student desiring to obtain a medical degree from any university, or a diploma from any medical corporation, may ascertain the course of clinical instruction and the conditions under which submission for examination has to take place The metropolitan medical schools and hospitals are grouped under the University of London, of which they are constituent bodies, although their educational opportunities are offered to students of other universities as well as to those seeking the qualifications of the medical corporations A similar plan is adopted in dealing with the provincial universities, the hospitals in direct connexion with which are described with the universities; the hospitals may not be official schools of the universities, but they supply an integral section of the teaching required.

Upon securing degrees or diplomas admission to the Register follows, and greater education begins The prudent young doctor already knows what he or she desires to make the next step, and there is a large range of choice displayed. The inducements to enter one of the Services should prevail more than they have done of recent years An account is given of the conditions under which commissions can be obtained in the Navy, Army, Indian, and Air Force Medical Services, and in the Colonial and other Medical Services

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION OF THE UNITED KINGDOM.

POWERS, DUTIES, AND CONSTITUTION OF THE GENERAL MEDICAL COUNCIL.

THE powers and duties of the General Medical Council, or " General Council of Medical Education and Registration of the United Kingdom " to give the Council its full title, have been set out in detail in many previous Students' Numbers of THE LANCET. It is first a registering body: no person, even though his qualifications have been obtained by examination, is a legally qualified medical practitioner until his name appears on the Medical Register. Secondly, it is a standardising body, ensuring that medical education reaches an efficient standard by scientific examination. Thirdly, it is a penal and disciplinary body, having power to remove from the Register any practitioner convicted of felony or misdemeanour or adjudged guilty of conduct "infamous in a professional respect" Fourthly, to the Council is committed the codification of pharmaceutical remedies The duties of the Council are thus primarily of a public nature, and its construction shows its fitness for its fourfold responsibilities

The Council at present consists of 38 members, of whom, as will be seen by the annexed list, all but 11 are official representatives of some corporate body. Five members are chosen by the Crown on the advice of the Privy Council, and six others are elected by the members of the medical profession as Direct Representatives There are also three additional members appointed by the Privy Council under the Dentists Act, 1921, under which the powers and duties of the General Medical Council with regard to the keeping of the Dentists Register and the administration of the Dentists Acts were largely transferred to the Dental Board of the United Kingdom (see p 479)

The President of the General Council is Sir Donald MacAlister, and the sitting members of the Council are enumerated in the Medical Register

THE EDUCATIONAL CURRICULUM

Professional Education.—The course of professional study after registration occupies at least five years. The Final Examination in Medicine, Surgery, and Midwifery must not be passed before the close of the fifth academic year of medical study.

The following are the General Medical Council's Regulations in regard to the registration of medical students which came into force on Jan 1st, 1923

Registration of Medical Students

1. Subject to such exceptions as the Council may from time to time allow, every medical student, at the commencement of his studies, should be registered under the conditions hereinafter set forth.

2. Before registration every candidate should produce evidence that he has attained the age of 17 years.

3 The minimum standard of General Education required is that of University matriculation or entrance examination in the Faculties of Arts or Pure Science.

4 Before registration as a student every applicant should be required to have passed an approved examination in general education, and, in addition thereto, an examination in elementary physics and elementary chemistry conducted or recognised by one of the licensing bodies.

5. A student who has diligently attended an approved course of instruction in elementary biology at a secondary school or other teaching institution recognised by a licensing body may be admitted to the professional examination in elementary biology immediately after his registration as a student.

6. The commencement of the course of professional study recognised by any of the licensing bodies should not be reckoned as dating earlier than 15 days before the date of registration.

7. Every person desirous of being registered as a medical student should apply to the registrar of the division of the United Kingdom in which he is residing, according to a prescribed form, copies of which may be had on application to the several licensing bodies, medical schools, and hospitals, or at the offices of the Medical Council; and should produce or forward to the registrar evidence that he has attained the age of 17 years, that he has passed a preliminary examination in general education recognised by the General Medical Council, and, in addition, an examination in elementary physics and elementary chemistry conducted or recognised by one of the licensing bodies, and that he has commenced medical study.

Regulations which the Council has prescribed for the maintenance of the register of medical students:—

1. It shall be delegated to the Education Committee to prepare and issue from time to time a list of examining bodies whose examinations in general education fulfil the conditions of, and are specially recognised by, the General Medical Council.

2 The Council has recognised the undernoted university examinations, subject to the conditions specified below: viz, at Oxford University, Responsions; at Cambridge University, the Previous Examination; at the Scottish Universities, the Preliminary Examination; and the Matriculation Examination at the Universities of Birmingham,

MEDICAL ENGLISH

EVERY year the English and American vocabulary is enlarged by the addition of many new words Those conceived in popular nuptials and brought to birth as slang are plunged at once into the stream of everyday speech, the strongest win through, and if they live they live because they convey ideas not hitherto expressible so exactly—their utility, as much as their terseness saves them, but they perish (*T.D L*) when laziness and vacuity employ them in and out of season. But unfortunately not every new word has to go through the tests to which slang is subjected. The offspring of scientific brains are usually nursed from childhood in the enervating atmosphere of the printed page; their first plunge into public life is made in the Turkish bath of a learned society, but, no whit discouraged by the weedy growth of these semi-classical terms, their parents are urged by the fervour of procreation to subsequent efforts

Now any word has merit if it is short, easy to say, and really needed. On the other hand, brevity is not everything, and there is a real advantage in calling diseases or operations by names of Greek or Latin derivation because such names are descriptive, and their messages can be read by anyone of any nation having the necessary familiarity with a smattering of these dead languages But such descriptive words must be exact If they are carelessly put together, or "telescoped," or misspelt, they become unintelligible to scholar and Philistine alike, and a source of pain to both. Ornate and useless articles of clothing are going out of fashion, ornate architecture is not as popular as it has been; is it too much to hope that scientific language can be cleansed of its circumlocutions and made into a simpler medium for expressing facts? This can only be done if individuals apply to their sentences the same tests of relevance as they apply to signs and symptoms and laboratory phenomena, it can only be done if the full meaning of words is understood, and it can only be done, therefore, by the free use of medical dictionaries Fortunately these can easily be got and presumably they are more and more employed, for we note with pleasure that the one written by Dr T L Stedman has now reached its eighth edition [1] It was compiled by him in the leisure hours of a busy life as practitioner and editor, and it is a useful guide to the writing and reading of English Dr Stedman deplores the fact that "only a small percentage of even well-educated physicians of the present day can read the Greek characters," and registers his conviction that the elimination of Greek in schools has done much to barbarise the language of medicine and to make special medical dictionaries necessary He has yielded so far as to give the Greek words in Roman letters—a practice which it is hard to approve, since Greek words, however spelt, are not likely to convey much to those who know no Greek, whilst their familiar look is lost to those who might otherwise remember them. The general use of "c" instead of "k" to represent the Greek kappa—as in leucæmia (leukæmia)—can certainly be justified in itself, but there seems to be no reason for going on to pronounce the word as though the "c" were an "s," as Dr Stedman recommends This needlessly takes the word further away from its origin, as also—some would say—does the abolition of diphthongs which he approves because it is a simplication in accord with the Italian and Spanish derivatives of Latin He would have us write "hemorrhage" and "edematous," just as we write "equal" and "economy", but it is possible to reply that all four are regrettable if they lead to the original meanings and affinities being forgotten These, however, are little more than questions of taste, what is really important is that in Dr Stedman's dictionary we have a book which tells the reader and the writer the meaning of words and which commends the truer and purer forms The more general use of such books would go far to promote the writing of good scientific English

"A HASTY GENERALISATION"

To the Editor of THE LANCET

SIR,—I read the note in THE LANCET this week with the above title with much interest I think when the National Insurance Acts turned the medical practitioner into a Government official much was done to destroy the human touch which used to mark the relations between the doctor and his poorer patients In the war nurses and doctors saw death on such a large scale they became hardened, and after the war unfortunate elements blended, and produced a spirit which is, alas, not confined to any one profession. On all sides we see selfishness, a love of pleasure, a love of money, a lack of the spirit of self-sacrifice, which cause a feeling of resentment in many who remember better days The old-fashioned doctor and nurse may have lacked something in skill, but that lack was more than supplemented by a sympathetic interest in the patient—a human element too often lacking to-day.

There is a further adverse element at work—i e, a decline in religious belief, not without reason were the religious and medical professions closely related in the past, but they are largely divorced to-day I am inclined to think that the "hasty generalisation" is often a possibly unconscious revolt against this divorce It is not the duty of the doctor to preach, but when psycho-analysis shows the trouble to be mental rather than physical, the old-fashioned doctor with his hearty, "Trust in God, madame, He knows best," brushed away many a shadow, which the rather hopeless, "hard luck," or the superstitious "touch wood" of the irreligious modernist does little to relieve

As I go here and there I find a deep yearning for a word of sympathy, for the modern rush has eliminated the time required for the courtesies of life And we are the poorer for this In the United States for many years there has been a selfish materialism united with a worship of the Almighty Dollar, but only lately has this evil spirit invaded England. Our sick appreciate a word of comfort from doctor or nurse, and resent the loss of it; but I fear under modern conditions they must resign themselves to that loss

The National Insurance Acts, the war, and the lack of religion have smashed sympathy and real self sacrifice—for the present at least—I am, Sir, yours faithfully,

LOOKER ON

August 16th, 1926

A REGISTERED NURSES' BUREAU

A SCHEME has been organised to promote the interests of private nurses upon a plan which is already in existence in the United States Under the scheme the nurse pays a subscription of 3 guineas a year and a nominal registration fee of 2*s* 6*d*; only State registered nurses are eligible, and they will be registered on a general or a supplementary list, the latter implying allocation only to some particular branch of nursing. The subscription does not run until employment is found for the nurse, the registration fee securing a place on the waiting-list In order to be on the register a nurse must fill in an application form, enclosing her State certificate and proofs of training, while she is invited to give a very detailed personal account of herself in other ways. The Bureau is a limited liability company with an honorary advisory committee of well-known medical men, the registrars are fully-trained and registered nurses Any nurse wishing to obtain an application form should write to Mr Alfred Rose, the managing director of the Bureau, at 55, Chancery-lane, London, W C

TRAVEL IN FRANCE

THE Directors of the Office Français du Tourisme (56, Haymarket, London, S W. 1) write to say that, contrary to current rumour, no new or special taxes have been as yet levied on foreign visitors to France Existing taxes have, however, been increased to some extent The cost of the Identity Card has been raised from 68 to 375 francs, but as this card need only be obtained after a two months' stay it does not affect the tourist The cost of the Laisser Passer for motor-cars has been increased from 2 50 to 10 francs per day The increase of 30 per cent in the price of passenger tickets which came into force on August 16th will not make much difference in the total fare for continental travellers from Great Britain.

OVER-SIZE BABIES

To the Editor of THE LANCET

SIR,—One of my patients, a woman of 35, has had three children weighing respectively 10, 10¼, and 11¾ lb She is rather undersized and slender and her husband is also undersize and weighs less than 10 st I have looked up many authorities and can find no reference to the prevention of a repetition of these, which naturally she dreads She is very active and is a small eater Perhaps you or some of your readers could help me Probably it is a matter of diet

I am, Sir, yours faithfully,

P J B

August 16th, 1926

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED AUGUST 7TH 1926

Notifications—The following cases of infectious disease were notified during the week—Small-pox, 60 (last week 60), scarlet fever, 1045, diphtheria, 756, enteric fever, 36, pneumonia, 318, puerperal fever, 35, cerebro-spinal fever, 5, acute poliomyelitis, 20, acute polio-encephalitis, 4, encephalitis lethargica, 34, continued fever, 1, dysentery, 7, ophthalmia neonatorum, 99 There were no cases of cholera, plague, or typhus fever notified during the week.

Deaths—In the aggregate of great towns, including London, there were no deaths from small-pox, 5 (0) from enteric fever, 13 (3) from measles 2 (0) from scarlet fever, 16 (1) from whooping-cough, 26 (7) from diphtheria 98 (15) from diarrhœa and enteritis under 2 years of age and 10 (2) from influenza The returns for diarrhœa and enteritis show a small drop from those of the previous week. The figures in parentheses are those for London itself

---

[1] A Practical Medical Dictionary By T L Stedman, A.M, M.D London: Baillière, Tindall and Cox. 1925 Pp 1134 35s

THE MEDICAL EXAMINING BODIES AND SCHOOLS OF THE UNITED KINGDOM.

A Guide to the Facilities for Obtaining the Various Medical Degrees and Other Qualifications for the British Medical Register

I —ENGLAND AND WALES

THE UNIVERSITIES

UNIVERSITY OF OXFORD

This University confers two degrees in Medicine, those of *B.M.* and *D.M*, two in Surgery, *B Ch* and *M Ch*, and diplomas in *Public Health and Ophthalmology*

Only Graduates in Arts of the University are eligible for the Medical and Surgical degrees The most convenient course for the B A degree for intending graduates in Medicine is to take Responsions, the Preliminary Science Examinations mentioned below, and the Final Honour School of Physiology. To obtain the degrees of B M and B Ch the following examinations must be passed. 1. Preliminary subjects: Physics and Chemistry, Zoology, and Botany 2 Professional (*a*) First Examination Subjects—Organic Chemistry, unless the candidate has satisfied the examiners in Part I. Chemistry in the Honour School of Natural Science, Human Physiology, unless he has obtained a First or Second Class in Animal Physiology in the Honour School of Natural Science; Human Anatomy. (*b*) Second Examination: Subjects—Medicine, Surgery, Midwifery, Pathology, Forensic Medicine with Hygiene, Materia Medica and Pharmacology. The First and Second Professional examinations are held in June and December. The first B M examination may be passed at any time after the Preliminary Scientific examinations Anatomy and Physiology must be passed at the same time—Organic Chemistry may be taken separately

At any time after passing the First Examination, the candidate can, on producing certificates, present himself for examination in the subjects of Pathology, Forensic Medicine with Hygiene, Materia Medica and Pharmacology, but cannot, unless he is already a registered medical practitioner, enter for examination in Medicine, Surgery and Midwifery until the eighteenth term from his matriculation, nor until a period of at least thirty-three months has elapsed from the date of passing the First B M Examination. He must pass in Medicine, Surgery and Midwifery at one and the same time

Before admission to the Second B M Examination, the student must produce certificates of having attended laboratory courses in Pathology, Bacteriology and Pharmacology either in Oxford or in a recognised medical school He must also produce certificates of having acted as Clinical Clerk and Dresser, each for six months, in a medical school-approved by the University, of post-mortem clerking, of attendance on Labours, of instruction in Infectious Diseases and Ophthalmology, of proficiency in vaccination and the administration of anæsthetics, and of three academic years of Hospital Practice.

The degree of B Ch is granted with that of B M after passing the above examinations The degree of D M. is granted to Bachelors of Medicine of the University who have entered upon their thirtieth term from Matriculation, and have submitted a dissertation which is approved by the examiners for the B M degree whose subjects are dealt with therein and by Professors in the Faculty of Medicine The degree of M Ch is granted after examination to Bachelors of Surgery in the University who have entered upon their twenty-first term, and who are Members of the Surgical Staff of a recognised hospital, or have acted as Dresser or House Surgeon in such a hospital for a period of six months The examination, which includes Surgery, Surgical Anatomy and Pathology and Surgical Operations, is held annually in June, after the Second B M examination

The examinations for the Diploma in Public Health (see p 474) in two parts are held in Trinity and Michaelmas terms (until further notice in Trinity term only), that for the Diploma in Ophthalmology (see p 474) is held annually in July

Travelling Fellowship, Scholarships, and Prizes—A Radcliffe Travelling Fellowship is awarded annually after an examination held in February. It is tenable for two years and of the annual value of £300 The examination is in Physiology, Pathology, and Hygiene, and is partly "practical" Candidates must be graduates in Medicine of the University. The holder must travel abroad for the purpose of medical study. Application should be made to the Radcliffe Examiners, Department of Medicine, University Museum A Christopher Welch Scholarship of £100, tenable for four years, is awarded annually after examination Candidates must be men undergraduate members of the University, who have not exceeded the twelfth term from their matriculation, or been admitted to any degree in the University They may offer any one of the subjects, Animal Physiology, Botany, Zoology A Rolleston Memorial Prize is awarded once in two years to members of the Universities of Oxford and Cambridge of not more than ten years' standing for an original research in some Biological subject, including Physiology or Pathology The Radcliffe Prize, founded by University College (1907), is of the value of £50 and is awarded biennially (alternating with the Rolleston Memorial Prize) for research in some branch of medical science The Theodore Williams Scholarships, each of the value of £50 a year for two years, are awarded annually in the subjects of Anatomy, Physiology, and Pathology. A Radcliffe Scholarship in Pharmacology, of the value of £50 for one year, is awarded annually by the Master and Fellows of University College A King's College Hospital Burney Yeo Scholarship of £80 is awarded each year on the nomination of the Regius Professor of Medicine The Scholarships and Exhibitions in Science which are offered by most Colleges are open to those who intend to pursue Medicine. The value of these scholarships is usually £80 a year for four years, the exhibitions vary in value from £30 to £90 per annum The number of scholarships and exhibitions in Science offered annually is about forty. There are also Medical Scholarships of the value of £100 a year at University College and at Pembroke College. The Welsh Memorial Prize for Anatomical drawing is awarded annually, and is of the value of about £10.

In addition to the University Lectures and classes the several Colleges provide their undergraduates with tuition for all examinations up to the B.A. degree

In the Radcliffe Infirmary and County Hospital elementary clinical instruction is given by the Regius Professor of Medicine, the Litchfield Lecturers in Medicine and Surgery, and the other physicians and surgeons Instruction is also given in post-mortem work and Clinical Pathology in connexion with the courses in Pathology Post-graduate courses are held at the beginning of October

More detailed information may be obtained from the University Calendar; from the Examination Statutes, 1923 (both of which are published by the Clarendon Press); from the Regius Professor of Medicine, from the Professors in the several departments of medical science; and from the Dean of the School of Medicine, Department of Medicine, Museum, Oxford

University of Oxford Radcliffe Infirmary and County Hospital.—*Courses of instruction* are given in connexion with the Oxford University Medical School These include (1) a course in Practical Medicine by the Regius Professor of Medicine; (2) clinical lectures by the Litchfield Lecturers in Medicine and Surgery; and (3) tutorial instruction and demonstrations in special Regional Anatomy (medical and surgical), methods of Medical and Surgical Diagnosis, and Surgical Manipulation (4) Pathological demon-

Bristol, Durham, Leeds, Liverpool, London, Manchester, Sheffield, and Wales

3. The conditions prescribed by the Council are :—(1) The standard of the examination shall not be lower than that of the University Matriculation Examinations in the Faculties of Arts and Pure Science. (2) The certificate shall bear evidence that the candidate has passed in the following subjects, viz. :—(*a*) English. (*b*) Mathematics, Elementary. (*c*) A language other than English (*d*) An additional subject or subjects, as required by the regulations of the particular examination, to be chosen from the subjoined list, viz. · History, Geography, Physical Science, Natural Science, Latin, Greek, Hebrew, French, German, or other language accepted by the University for the purpose.

4 Subject to the conditions specified above (Section 3, Subsection (2)), the Council will recognise all examinations conducted by recognised authorities in Great Britain accepted by one or more of the above-named Universities as equivalent for purposes of Matriculation to an examination named in the preceding list (Section 2). *Bristol University* · Higher School Certificate Examination ; Schools Certificate Examination. *Cambridge Local Examinations and Lectures Syndicate* · Higher School Certificate Examination ; School Certificate Examination *Central Welsh Examination Board* · Senior Certificate Examination. *Durham University:* Higher Certificate Examination ; School Certificate Examination *London University:* General School Examination, Higher School Certificate Examination. *Northern Universities Joint Matriculation Board* Higher Certificate Examination, School Certificate Examination *Oxford and Cambridge Schools Examination Board:* Higher Certificate Examination ; School Certificate Examination. *Oxford Delegacy for Local Examinations.* Higher School Certificate Examination ; School Certificate Examination. *Scottish Education Department:* Leaving Certificate Examination.

5. The Council will continue to recognise examinations conducted by educational bodies other than those (referred to in Section 4) directly recognised by the Universities of Great Britain Recognition will not be extended under this section to any examination unless the Council is satisfied (1) that in scope and standard it is equivalent to a recognised Matriculation Examination of a British University, and (2) that it fulfils the conditions specified by the Council (Section 3, Sub-section (2)) Such examinations are ·—The College of Preceptors (England) Senior Certificate. The Educational Institute of Scotland : Preliminary Medical Certificate.

Examinations in Ireland—6 Subject to the specified conditions (Section 3, Sub-section (2)), the Council will recognise the Entrance Examination to the School of Physic of the University of Dublin, the Matriculation Examinations of the National University of Ireland and the Queen's University of Belfast, the Preliminary Examination of the Irish Royal Colleges of Physicians and Surgeons, the Leaving Certificate of the Intermediate Education Board of the Irish Free State, and the Senior Leaving Certificate of the Ministry of Education of Northern Ireland, and all examinations accepted by one or more of the Universities as equivalent for purposes of entrance or Matriculation, to the above-named examinations.

7. The Council will recognise the Final Examinations for Degrees in Arts and Science of any University of the United Kingdom or of the British Dominions

Colonial Examinations,—8. Subject to the specified conditions (Section 3, Sub-section (2)), the Council will recognise all examinations of Colonial Universities which are accepted by one or more of the British Universities as equivalent, for purposes of Matriculation, to an examination named in the list of examinations recognised by the Council (Section 2)

A copy of the Medical Students Register prepared by each of the Branch Registrars is transmitted, on or before Dec. 31st in each year, to the Registrar of the General Council, who supplies an alphabetical list of all students registered in the preceding year to each of the licensing bodies in the United Kingdom, and to each of the several medical schools and hospitals

All applications for special exceptions to the foregoing regulations as to registration should be addressed to the Registrar of the General Council

Lists of Universities (including their Colleges and Medical Schools) and Schools of Medicine at which Medical Study may be Commenced in the United Kingdom—1. Universities (including their colleges) Aberdeen University, Belfast, Queen's University, Birmingham University, Bristol University, Cambridge University; Dublin University (including Trinity College), Durham University (including the Durham College of Medicine), Edinburgh University; Glasgow University (including Queen Margaret College), Ireland, National University (including University College, Cork, University College, Dublin; University College, Galway), Leeds University; Liverpool University, London University (including the following Schools and Colleges St Bartholomew's Hospital, Charing Cross Hospital, St. George's Hospital, Guy's Hospital, King's College, King's College Hospital, London Hospital, St Mary's Hospital, Middlesex Hospital, St Thomas's Hospital, University College, Westminster Hospital, London (Royal Free Hospital) School of Medicine for Women, Bedford College, Royal Holloway College; Manchester, Victoria University, Oxford University; St Andrews University (including University College, Dundee), Sheffield University; Wales, University of (including University College of Wales, Aberystwyth, University College of North Wales, Bangor, University College of South Wales and Monmouthshire, Cardiff, Welsh National School of Medicine, Cardiff, University College, Swansea). 2 Schools of Medicine Recognised by the Licensing Bodies —*Dublin. Royal College of Surgeons, Schools of Surgery; Edinburgh* · School of Medicine of the Royal Colleges; Glasgow · Anderson's College, St Mungo's College

The address of the Registrar, to whom further communications should be addressed, is as follows · The Registrar of the General Medical Council, 44, Hallam-street, Portland-place, London, W. 1.

Medical Registration and the Irish Free State.

In August, 1925, the announcement was made by the Government of the Irish Free State that the Executive Council had decided not to seek the continuation of the United Kingdom arrangement whereby the medical profession in Ireland is controlled by the General Medical Council. This decision was unexpected, as it had been understood that the Irish Government was content to continue the existing system of registration It caused much perturbation as it was feared that any alteration, by placing an obstacle in the way of Irish medical men seeking admission to the General Register, might influence the Irish medical schools to their hurt During the 12 months that have passed since that pronouncement conferences have taken place between representatives of the profession and members of the Government Although no official pronouncement has yet been made on the subject, it is believed that a scheme has been devised which will protect the right at present enjoyed by medical men qualified in Ireland of registering in the General Register, and at the same time will secure to the Irish Free State the control of those who desire to practise in that country As no publication of the proposed scheme has taken place, it is not possible to indicate the particulars of it with precision Students of medicine in the Irish Free State, and those who intend to enter on the study of medicine, may, however, have a fair security that their choice of a place of practice will not be limited by any future change

For the present, by temporary legislation in the Irish Parliament, the powers of the General Council are exercised as heretofore in the Irish Free State at the University and who are pursuing a course of study approved by the University, either (*a*) under the direct control of the University or a committee appointed thereby, or (*b*) under one or more of the appointed or recognised teachers of the University. Centres for preliminary and intermediate medical studies have been established by the University at University and King's Colleges. Internal students must pursue their studies at one of the above centres, or at one of the medical schools connected with the University. These are St. Bartholomew's Hospital, Charing Cross Hospital, St. George's Hospital, Guy's Hospital, King's College Hospital, the London Hospital, St. Mary's Hospital, the Middlesex Hospital, St. Thomas's Hospital, University College Hospital, Westminster Hospital, and the London (Royal Free Hospital) School of Medicine for Women. The London School of Tropical Medicine, the Lister Institute of Preventive Medicine, the Maudsley and Bethlem Royal Hospitals are also recognised as schools of the University in special departments. External students are all other matriculated students, and may pursue their studies at other approved universities and medical schools, presenting themselves for examination at the University.

Faculty of Medicine.—The Faculty of Medicine grants the joint degrees of M.B., B.S. (*Bachelor of Medicine and Surgery*), the higher separate degrees of M.D. (*Doctor of Medicine*) and M.S. (*Master of Surgery*) and the degree of B.D.S. (*Bachelor of Dental Surgery*): the two higher degrees being open only to candidates holding the M.B., B.S. degrees of the University.

The curriculum for the M.B., B.S. degrees is five and a half years from the time of matriculation, with certain exceptions which must be looked for in the official regulations of the University, to be obtained from the Principal Officer, University of London, South Kensington, S.W. 7.

A. *Internal Students.*—For the Bachelor's degrees in Medicine and Surgery a student must normally, after registration as an internal student, have: (1) *Attended* prescribed courses of study for five and a half years in one or more schools of the University. (2) Passed the following examinations under the conditions mentioned below: (*a*) The First Examination for Medical Degrees in Inorganic Chemistry, Physics including Mechanics and General Biology; (*b*) the Second Examination for Medical Degrees: Part I., Organic Chemistry; Part II., Anatomy, Physiology, and Pharmacology; (*c*) the Third Examination for Medical Degrees or M.B., B.S. Examination in Medicine, Surgery, Obstetrics and Gynæcology, Pathology, Forensic Medicine and Hygiene.

B. *External Students.*—For the Bachelor's degrees in Medicine and Surgery an external student must (1) have passed the Matriculation examination or have been exempted therefrom under Statute 116 not less than five and a half years previously; (2) have passed subsequent examinations similar to those required of an internal student; and (3) have been engaged in professional studies during the five and a half years subsequently to Matriculation and four and a half years subsequently to passing the First Examination for Medical Degrees at one or more of the medical institutions or schools recognised by this University for the purpose, one year at least of the four and a half years to have been spent in one or more recognised institutions or schools in the United Kingdom.

The First Examination for Medical Degrees (Inorganic Chemistry, Physics, including Mechanics and General Biology) will take place twice in each year, commencing on the Monday following Dec. 7th and on the first Monday in July. It must be passed not less than nine months after matriculation.

The Second Examination for Medical Degrees (Part I.). Organic Chemistry.—This examination will take place twice in each year, commencing on the Tuesday following the third Monday in March and on the second Monday in July. No candidate will be admitted to this examination until he has completed the First Examination.

The Second Examination for Medical Degrees (Part II.) takes place twice in every year, commencing on the Tuesday following the third Monday in March and on the Tuesday following the first Monday in July. No candidate shall be admitted to the examination unless he has passed the First Examination for Medical Degrees at least 18 months previously, and has passed Part I. of the Second Examination for Medical Degrees.

The Third or M.B., B.S. Examination.—The M.B., B.S. examination takes place twice in each year, commencing on the second Monday in November and on the first Monday in May. No candidate will be admitted to this examination unless he has completed the Second Examination for Medical Degrees, together with a course of study summarised below, nor within three years from the date of passing the Second Examination, Part II., in Anatomy and Physiology. The course of study comprises introductory course in (1) Clinical Medicine, (2) Clinical Surgery; and (3) Clinical Pathology; (4) Experience as Clinical Clerk; (5) Clinical Medicine, (6) (*a*) Fevers, (*b*) Children's Diseases, (*c*) Venereal Diseases, (*d*) Mental Diseases (at a recognised Asylum), (*e*) Dermatology, (*f*) Vaccination, (*g*) Materia Medica and Pharmacy; (7) Experience as a Surgical Dresser; (8) Clinical Surgery; (9) Ophthalmology; (10) Oto-Rhino-Laryngology; (11) (*a*) Operative Surgery, (*b*) Applied Anatomy, (*c*) Administration of Anæsthetics, (*d*) Dental Surgery, (*e*) Orthopædic Surgery; (*f*) Mechano-therapeutics; (12) Obstetrics and Gynæcology; (13) Lying-in Hospital, (14) The conduct of at least 20 Labours; (15) Antenatal Clinic; (16) Experience as a Clinical Clerk in Gynæcological Work, (17) General Pathology, Morbid Anatomy, Bacteriology, and Chemical Pathology; (18) Work in the Post-Mortem Room; (19) Clinical Laboratory; (20) Forensic Medicine; (21) Hygiene. He must have attended the Medical and Surgical Practice of a recognised hospital for two years and have held the posts of clinical clerk and surgical dresser for periods of six months each. Candidates will be examined in Medicine, Pathology, Forensic Medicine and Hygiene, Surgery, Obstetrics and Gynæcology. The subjects may be divided into two groups—namely: (1) Medicine, Pathology, Forensic Medicine, and Hygiene; and (2) Surgery, Obstetrics, and Gynæcology. These groups may be taken either separately or together. The list of candidates who have passed will be published in two parts—namely, an Honours list and a Pass list. Bachelors of Medicine of this University who graduated in or before May, 1904, may obtain the B.S. degree by passing the Surgical part of the M.B., B.S. examination.

Doctor of Medicine.—The examination for this degree takes place twice in each year, commencing on the second Monday in December and on the first Monday in July. Candidates may present themselves for examination in one of the following branches—namely: (1) Medicine; (2) Pathology; (3) Psychological Medicine, (4) Midwifery and Diseases of Women; (5) State Medicine; and (6) Tropical Medicine. Any candidate for the degree of M.D. (except in branch 5) may transmit to the Registrar a thesis or published work having definite relation to the branch of Medicine in which he is a candidate, and if the thesis be approved by the examiners the candidate may be exempted from a part or from the whole of the written examination in that subject.

Master of Surgery.—The examination for the degree of Master of Surgery takes place twice in each year and commences on the second Monday in December and on the first Monday in July. Candidates may present themselves for examination in one of the following branches: (1) Surgery; (2) Dental Surgery; (3) Ophthalmology; (4) Laryngology, Otology and Rhinology. A thesis may be submitted as for M.D.

Bachelor of Pharmacy.—The Senate has approved the institution of the Degree of Bachelor of Pharmacy (B.Pharm.). The course for this Degree extends over three years.

strations and instruction in post-mortem work are given by the Assistant Pathologist. Opportunities are offered to students who wish to act as surgical dressers and clerks. The hospital contains 225 beds

UNIVERSITY OF CAMBRIDGE

The student must enter at one of the Colleges, or as a non-collegiate student, and keep nine terms (three years) by residence in the University He must pass the Previous Examination in Classics, Mathematics, &c., before he comes into residence in October, or he may obtain exemption through the Oxford and Cambridge Schools Examination Board, the Oxford or Cambridge Senior Local Examinations, the London Matriculation Examination, the Scotch Education Department, Responsions at Oxford, and the Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, and Sheffield, the Matriculation Examination of the University of Birmingham, and certain other certificates, or by being a graduate of certain other Universities in the United Kingdom He may then devote himself to medical study in the University, &c Or he may, as nearly all students now do, proceed to take a degree in Arts by passing the Examinations for the ordinary B A degree, or an Honours degree by passing a Tripos Examination The Natural Sciences Tripos is taken most frequently by medical students, as some of the subjects are practically the same as those for the first and second M B

For the degree of *Bachelor of Medicine* (*M B*) five years of medical study are required either in Cambridge or at one of the recognised Schools of Medicine The first three or four years are usually spent in Cambridge till the student has passed the examination for Part I of the Natural Sciences Tripos and the first and second examinations for M B. Hospital practice and many of the requisite lectures may be attended in Cambridge, and some students remain to attend lectures and hospital practice until they have passed the second part of the second examination for M.B The laboratories for Botany, Chemistry, Physics, Biology, Zoology, Human Anatomy, Physiology, Biochemistry, Pathology, Bacteriology, Pharmacology, Psychology, and Public Health are well equipped Addenbrooke's Hospital, the Infectious Diseases Hospital, the Cambridge Research Hospital, and the Field Laboratories are utilised for study and research

There are three examinations for M B. The *first* includes (1) General and Inorganic Chemistry, (2) Mechanics, (3) Physics, and (4) Elementary Biology These parts may be taken together or separately. The *second* is divided into three parts—viz., (1) Organic Chemistry, (2) Human Anatomy and Physiology; and (3) Pharmacology and General Pathology The *third* is divided into two parts (1) Principles and Practice of Surgery (including Special Pathology and Midwifery and Diseases Peculiar to Women), and (2) Principles and Practice of Physic (including Diseases of Children, Mental Diseases, Medical Jurisprudence), Pathology (including Hygiene and Preventive Medicine), and Pharmacology (including Therapeutics and Toxicology) The examinations are partly in writing, partly oral, and partly practical, in the hospital, in the dissecting room, and in the laboratories An Act has then to be kept in the Public Schools, by the candidate reading an original dissertation composed by himself and being examined orally on some subject approved by the Regius Professor of Physic Candidates who have passed both parts of the third M B. examination are admitted to the registrable degree of *Bachelor of Surgery* (*B Chir*) without separate examination and without keeping an Act

The degree of *Doctor of Medicine* (*M D.*) may be taken three years after that of M.B. or four years after that of M A The candidate is required to produce certificates of having been engaged in Medical Study for five years, and if an M.A, to pass the same examinations as are required for the degree of M.B. An Act has to be kept, consisting of an original Thesis sustained in the Public Schools with *vivâ voce* examination; and a short extempore essay has to be written on a topic taken from the general subject of his thesis, whether it be Physiology, Pathology, Pharmacology, the Practice of Medicine, State Medicine, or the History of Medicine

For the degree of *Master of Surgery* (*M.Chir*) the candidate must have passed all the examinations for B Chir., or, if he is an M A, have obtained some other registrable qualification in surgery. He is required to pass an examination in Principles and Practice of Surgery, Surgical Anatomy and Surgical Operations, and Pathology, and to write an extempore essay on a Surgical Subject Before he can be admitted to the examination two years at least must have elapsed from the time when he completed all required for the degree of B.Chir

Diplomas are granted in Public Health, in Hygiene, in Tropical Medicine and Hygiene, in Medical Radiology and Electrology, and in Psychological Medicine Candidates must hold a recognised medical qualification (See p 473)

Women Students—Increased facilities have been offered to students of Girton and Newnham Colleges, and they are admitted to the M B Examinations

University Prize in Medicine—The one University Prize in Medicine, the Raymond Horton Smith Prize (value £19), is awarded to that candidate for the degree of M D. who presents the best thesis for the degree during the academical year, provided that he has taken honours in a tripos examination. Medical studies are endowed by the numerous Natural Science scholarships at the various colleges, information about which can be obtained from the respective Tutors

An abstract of the Regulations and Schedules of the range of the examinations in Chemistry, Physics, Biology, Pharmacology, and General Pathology may be obtained upon sending a stamped directed envelope to the Registrary, The Registry, Cambridge

Addenbrooke's Hospital.—Clinical Lectures in Medicine and Surgery, in connexion with Cambridge University Medical School, are given at this hospital twice a week during the academical year, and practical instruction in Medicine and Surgery is given in the wards and out-patients' rooms by the physicians and surgeons daily during the term time and vacations The fee for pupilship is 3 guineas a term, 9 guineas a year, 12 guineas perpetual. Further information may be obtained from Dr Aldren Wright.

UNIVERSITY OF LONDON

The University of London was established by Royal Charter in 1836 as an examining and degree-conferring body with affiliated colleges but no direct teaching functions In 1900 it was reconstituted under the Act of Parliament, 1898, and became a teaching as well as an examining body Many schools already existing became constituent colleges, including all the metropolitan medical schools Lecturers were also appointed in special subjects

Teaching Staff.—The teaching staff of the University is organised under two heads · 1 Appointed teachers—i e, such as are appointed by the University 2. Recognised teachers—i e, those who have been appointed and are paid by the several schools of the University and other institutions at which instruction is given under the auspices of the University, and who have been recognised by the Senate as conducting work of University standard Courses by non-recognised teachers may also be approved in schools of the University. The lecturers in the Medical Sciences and the professors in the Faculties of Medicine in University College, London, and King's College, London, will be found enumerated under their respective schools

Internal and External Students—All the examinations of this University are open to men and women alike. Matriculated students of the University may be either internal or external. Internal students of the University are students who have matriculated

An Institute of Pathology with a whole-time staff of scientific workers and fully equipped Laboratories has been established in the School Students receive their training in Preventive Medicine, Pathology, Bacteriology, and Biochemistry here, and are encouraged to undertake Research Special facilities are available for Post-graduate Research and Study

The course in Ophthalmology is given in the Royal Westminster Ophthalmic Hospital adjoining Special demonstrations are arranged for Post-graduates

The *Museum* contains over 4000 specimens, including a notable collection of over 800 gynæcological specimens, "The Cuthbert Lockyer Collection"

Students' Club —The social comfort and convenience of students are met by library, reading, and smoking-rooms, refreshment-room, &c The Club, which is under the control of a Committee of Students, provides needful athletic recreation, and includes the Medical Society An athletic ground, comprising six acres, has recently been acquired and is now in use

Women Students —Women students are admitted to the School and Hospital upon the same terms and conditions as men, and after qualification are eligible for resident Hospital appointments

Fees —Entrance Primary and Intermediate, 10 guineas, Final, 8 guineas, Annual, £42

Further information may be obtained on application to the Dean, Dr. W. J Fenton, Medical School, Charing Cross Hospital, London, W C

ST GEORGE'S HOSPITAL —This hospital has a service of 436 beds, of which 180 are allotted to surgical, 150 to medical cases, and 100 are at the Convalescent Hospital at Wimbledon One ward is set apart for Diseases Peculiar to Women, and there is a Maternity Ward of 11 beds Children's beds are placed in the women's wards Two wards are allotted to ophthalmic cases

Entrance Scholarships and Endowed Prizes of a total value of £700 are awarded annually; a detailed list is placed below The entire teaching and laboratories are now devoted to purely clinical subjects, and arrangements have been made with the authorities of King's College for students who enter the first, second, or third year of the curriculum as students of St George's to carry out the necessary courses of instruction at that College Students then complete their course, without payment of any entrance fee, in a school entirely devoted to clinical work

Twelve house physicians, 12 house surgeons, and 12 casualty officers are appointed annually. Special attention is directed to the following paid appointments, among others, which are open to students after they have held house office —Resident Assistant Physician and Resident Assistant Surgeon, at £350 per annum each, Medical Officer to the Atkinson-Morley Convalescent Hospital, at £300 per annum, Medical Registrarship at £200 per annum, Surgical Registrarship at £200, Assistant Curatorship of the Museum at £100, Obstetric Assistantship (Resident) at £50, the post of Resident Anæsthetist at £100, the posts (2) of Junior Anæsthetists, each at £30 The St George's Hospital Club, with smoking- and luncheon-rooms on the hospital premises, and an athletic ground at Wimbledon, is an amalgamation of the Hunterian Society, the *Gazette*, and the Rugby football, cricket, lawn tennis, boxing, rifle, and golf clubs Students have the advantage of a library of medical and scientific books which is kept up to date

Scholarships and Prizes —At this school five entrance scholarships are given, the money value and the subjects of examination being as follows: (*a*) and (*b*) two William Brown Exhibitions, £120 and £80 respectively, (*c*) and (*d*) two University Entrance Scholarships, 90 guineas and £70 respectively; (*e*) Devitt-Pendlebury Scholarship, £50, Anatomy and Physiology, except in the case of (*c*), subject of examination for which is General Pathology

This year, in addition to these Scholarships, Exhibitions, each of the value of £40 and up to six in number, will be awarded to candidates of approved merit in the Entrance Scholarships Examination The others are as follows. (*f*) Allingham Scholarship in Surgery for Students qualified not more than two years, £85, (*g*) and (*h*) two Brackenbury Prizes, one in Medicine and one in Surgery, £33 each, open to students of not more than five years' standing, (*i*) H C Johnson Memorial Prize, £19, Practical Anatomy, (*j*) Pollock Prize, £23, Physiology, Physiological Chemistry, and Histology, (*k*) Clarke Prize, £5, (*l*) Thompson Medal, £9, Clinical Reports; (*m*) Brodie Prize, £8, Clinical Reports, (*n*) Webb Prize, open to perpetual pupils, £34, Bacteriology; (*o*) Sir Francis Laking Memorial Prize, £65, open to students having registrable qualifications

Further information may be obtained from the Dean of the Medical School, Dr. A Feiling

---

GUY'S HOSPITAL —This hospital, founded by Thomas Guy in 1724 for the reception of 400 patients, and enlarged through the aid of a large bequest from the late William Hunt, contains at the present time 616 beds The whole of the medical school has been rebuilt during the last 27 years It provides ample accommodation, with modern equipment, for all the non-clinical subjects of the medical curriculum Within the grounds of the hospital are situated the residential college, with accommodation for 35 students, the students' club, with reading, smoking, luncheon, and dining-rooms, a fives court, and swimming bath The athletic ground and club house is situated at Honor Oak Park, and can be reached in 20 minutes from the hospital

House physicians, house surgeons, out-patient officers and assistant house surgeons, obstetric residents, house surgeons in the departments of ophthalmology and genito-urinary diseases, house physician in the department for diseases of children, clinical assistants, clerks to anæsthetists, surgeons' dressers, clerks to medical units, post-mortem clerks, extern obstetric dressers, and dressers and clerks in the special departments are appointed from among the students upon the recommendation of the Medical Council according to merit There is a Venereal Clinic, in accordance with the Scheme of the Local Government Board and London County Council. Lectures and clinical instruction are given, to which Medical Students and Practitioners are admitted without fee.

The following special departments are attached to the hospital Departments of ophthalmology, laryngology, gynæcology, diseases of children, diseases of the nervous system, dermatology, otology, actinotherapeutics, anæsthetics dentistry, orthopædics, vaccine, tuberculosis, genito-urinary and venereal diseases, Salomon's Welfare Centre (for Maternity and Children)

Scholarships —Six entrance scholarships are awarded annually as follows —(*a*) one War Memorial scholarship, providing a free Medical Education for five years of the value of £200, to be awarded alternately in Arts and Science (next award, July, 1928), (*b*) one Open Arts Scholarship of £100 for students under 21 years of age, Latin, English, Greek, or French or German, Arithmetic, Euclid, and Algebra; (*c*) one Open Junior Science scholarship for students under 21 years, £100, subjects, any two of the following *Inorganic Chemistry*, Physics, and Biology; (*d*) a confined Junior Science scholarship of the value of £100 is offered for competition, annually in July, to candidates who have attended the Preliminary Science Classes at this School, (*e*) two open Science scholarships (1) a War Memorial scholarship of the value of £80, awarded annually in September, (2) an open scholarship of the value of £80, awarded annually in September, for students under 25 years of age who have completed the curriculum for, or passed the examination in, Anatomy and Physiology for a medical degree in any University of the British Empire, and have not entered as students in any Metropolitan Medical School; subjects, any two of the following: *Anatomy*, *Physiology*, Organic Chemistry, Pharmacology, General Pathology.

Fees.—Matriculation £2 12*s* 6*d* for each entry, at provincial examinations an additional local fee is charged. First examination for Medical Degrees: £6 6*s*. for each entry to the entire examination. For re-examination in one subject the fee is £2 2*s*. Second examination, Part I: £3 3*s*., repeated on each subsequent entry, Part II. £9 9*s* for the whole examination. Third examination: £12 12*s* for each entry to the whole examination. M.D. Examination: £21; for re-examination £10 10*s*. M.S. Examination: As for M.D.

Full details of the prescribed curricula of study and the names of the recognised Internal and External Schools of the University, can be obtained free on application to the Academic Registrar, University of London, South Kensington, S.W. 7.

MEDICAL SCHOOLS OF THE UNIVERSITY OF LONDON[1]

St Bartholomew's Hospital and College.—The hospital contains 757 beds, of which 687 are for patients in the hospital at Smithfield and 70 at the Alexandra Hospital, Swanley. It receives over 9000 in-patients annually and its out-patients and casualties amount to more than 75,000 annually. Special departments have been organised for Diseases of Women and Children, the Eye, Ear, Larynx, and Skin, as well as for Orthopædic and Dental Surgery, and for Electro-therapeutics and X Ray work. Surgical operations take place every day, except Saturdays, at 1.30 P.M., and Surgical consultations are held on Thursdays at the same hour. Medical consultations are held on Thursdays at 3.15 P.M. The physicians and surgeons deliver clinical lectures weekly during both the winter and the summer sessions. Clinical lectures on all special subjects are also given. Wholetime Clinical Units under Professors of Medicine and Surgery have been established.

Ten house physicians and ten house surgeons are appointed annually, and are provided with rooms and board by the hospital authorities and receive £80 a year as salary. A resident midwifery assistant, an ophthalmic house surgeon, and a house surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and board, and receive a salary of £80 a year. Three resident administrators of anæsthetics are appointed, the senior for one year at a salary of £150, and two juniors for six months with a salary at the rate of £80 per annum, with board and rooms. An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year. The clinical clerks, the obstetric clerks, the clerks to the medical out-patients, the dressers to the surgical in-patients and to the out-patients, and the dressers in the special departments are chosen from the students. A residential college is attached to the hospital.

There are quarters for the resident staff, casualty, medical, surgical, and special out-patient departments, casualty wards, dispensary, and clinical lecture theatre. There is a chemical laboratory attached to the Medical College as well as a laboratory devoted to instruction in Public Health. A block is devoted to Pathology, and contains the post-mortem room as well as extensive laboratories for bacteriology, clinical pathology, and pathological chemistry. *The Medical School Buildings* include three large lecture theatres, a large dissecting room, laboratories for chemistry, biology, morbid anatomy and histology, and public health, as well as a spacious library (containing 14,500 volumes), a well-appointed museum of anatomy, physiology, comparative anatomy, materia medica, botany, and pathological anatomy. The pathological museum is the most complete in the kingdom. A new block in Giltspur-street has recently been acquired and has been fitted up as lecture theatres and laboratories for physics, chemical physiology, experimental physiology, histology, and pharmacology.

Special Classes for the Primary and Final F.R.C.S. are held twice yearly. *Instruction in Preliminary Science* is given to University of London students in chemistry, biology, and physics throughout the year. Facilities for research work are afforded in the Clinical Units and Laboratories of pathological and other departments. *A Vacation Post-graduate Course*, adapted to the needs of general practitioners, is given annually. The recreation ground of 10 acres is at Winchmore Hill for the use of the members of the Students' Union, which all students are expected to join. The Students' Union contains a large reading and smoking room, a committee and writing room, luncheon and dining hall, and a miniature rifle range.

Scholarships given in aid of Medical Study.—At this school various Scholarships, prizes, &c., are given. For five of the Scholarships and the Exhibition—namely, (*a*), (*b*), two Entrance Scholarships in Science of the respective values of £75 and £100, (*c*) Entrance Scholarship in Arts, £100, (*d*) Jeaffreson Exhibition, £50, and (*e*) Shuter Scholarship, £50—a full or University course at St Bartholomew's Hospital is required. The awards of (*a*) and (*b*) are made after examination in selections from the subjects of Chemistry, Physics, Zoology, Botany, Physiology, Anatomy, and Pathology. (*c*) and (*d*) are awarded after examination in Mathematics, Latin or Greek or French or German, a second language or Chemistry or Physics; (*e*) is awarded after competitive examination among Cambridge Graduates in Anatomy and Physiology. The more important of the other Scholarships and prizes are as follows:—Four Junior Scholarships—(*f*) No. 1, £30, Anatomy and Physiology, (*g*) No. 2, £20, Anatomy and Physiology, (*h*) No. 3, £25, Chemistry, Physics, and Biology, (*i*) No. 4, £15, Chemistry, Physics, and Biology. (*j*) Senior Scholarship, £50, Anatomy, Physiology, and Chemistry; (*k*) Kirkes Scholarship, £30 and medal, Clinical Medicine, (*l*) and (*m*) two Brackenbury Scholarships, £39 each, one in Medicine and one in Surgery, (*n*) Sir G. Burrows Prize, 10 guineas, Pathology, (*o*) Skynner Prize, 13 guineas, Regional and Morbid Anatomy, (*p*) Matthews Duncan Medal and Prize, £20, Midwifery and Gynæcology; (*q*) Luther Holden Research Scholarship in Surgery, awarded by election, £105, (*r*) Lawrence Research Scholarship and Gold Medal in Pathology, awarded by election, £115, and (*s*) Baly Scholarship in Clinical Medicine, £75, awarded by examination.

Information may be obtained on application to the Dean of the Medical College, Dr. T. W. Shore. The Warden of the Residential College is Mr. R. M. Vick.

Charing Cross Hospital.—The Hospital, to which the School is attached, contains 300 beds. Over 3000 cases pass through its wards each year, and some 24,000 out-patients and casualties are treated. There are special departments for Mental Diseases, Midwifery, Diseases of Women, of Children, of the Skin, Ear, Throat, Nose, and Teeth, for Orthopædic Cases, X Ray work, and for Electrical Treatment.

Appointments.—In the Medical School Demonstratorships and Assistant Demonstratorships are open to students of the School. Medical, Surgical, and Obstetric Registrars to the Hospital are appointed annually. Six House Physicians, six House Surgeons, and two Resident Obstetric Officers are appointed each year.

Primary and Intermediate Studies.—By an agreement with the University of London the School sends its Primary and Intermediate Students to receive their lectures and practical work at King's College, which is situated within four minutes' walk.

Final Studies.—These are taken in the school and hospital, where systematic lectures, demonstrations, and tutorial classes are arranged to cover all the subjects necessary for qualifying examinations. Departments are also available for other final subjects of Materia Medica and Operative Surgery.

---

[1] For Ancillary Metropolitan Medical Schools see p. 436.

An Institute of Pathology with a whole-time staff of scientific workers and fully equipped Laboratories has been established in the School Students receive their training in Preventive Medicine, Pathology, Bacteriology, and Biochemistry here, and are encouraged to undertake Research Special facilities are available for Post-graduate Research and Study

The course in Ophthalmology is given in the Royal Westminster Ophthalmic Hospital adjoining Special demonstrations are arranged for Post-graduates

The *Museum* contains over 4000 specimens, including a notable collection of over 800 gynæcological specimens, " The Cuthbert Lockyer Collection "

Students' Club—The social comfort and convenience of students are met by library, reading, and smoking-rooms, refreshment-room, &c The Club, which is under the control of a Committee of Students, provides needful athletic recreation, and includes the Medical Society An athletic ground, comprising six acres, has recently been acquired and is now in use

Women Students—Women students are admitted to the School and Hospital upon the same terms and conditions as men, and after qualification are eligible for resident Hospital appointments

Fees—Entrance Primary and Intermediate, 10 guineas; Final, 8 guineas, Annual, £42

Further information may be obtained on application to the Dean, Dr W J Fenton, Medical School, Charing Cross Hospital, London, W C

ST GEORGE'S HOSPITAL—This hospital has a service of 436 beds, of which 180 are allotted to surgical, 150 to medical cases, and 100 are at the Convalescent Hospital at Wimbledon One ward is set apart for Diseases Peculiar to Women, and there is a Maternity Ward of 11 beds Children's beds are placed in the women's wards Two wards are allotted to ophthalmic cases

Entrance Scholarships and Endowed Prizes of a total value of £700 are awarded annually, a detailed list is placed below The entire teaching and laboratories are now devoted to purely clinical subjects, and arrangements have been made with the authorities of King's College for students who enter the first, second, or third year of the curriculum as students of St George's to carry out the necessary courses of instruction at that College Students then complete their course, without payment of any entrance fee, in a school entirely devoted to clinical work

Twelve house physicians, 12 house surgeons, and 12 casualty officers are appointed annually Special attention is directed to the following paid appointments, among others, which are open to students after they have held house office—Resident Assistant Physician and Resident Assistant Surgeon, at £350 per annum each; Medical Officer to the Atkinson-Morley Convalescent Hospital, at £300 per annum, Medical Registrarship at £200 per annum, Surgical Registrarship at £200, Assistant Curatorship of the Museum at £100, Obstetric Assistantship (Resident) at £50, the post of Resident Anæsthetist at £100, the posts (2) of Junior Anæsthetists, each at £30 The St George's Hospital Club, with smoking- and luncheon-rooms on the hospital premises, and an athletic ground at Wimbledon, is an amalgamation of the Hunterian Society, the *Gazette*, and the Rugby football, cricket, lawn tennis, boxing, rifle, and golf clubs Students have the advantage of a library of medical and scientific books which is kept up to date

Scholarships and Prizes—At this school five entrance scholarships are given, the money value and the subjects of examination being as follows · (*a*) and (*b*) two William Brown Exhibitions, £120 and £80 respectively, (c) and (*d*) two University Entrance Scholarships, 90 guineas and £70 respectively, (*e*) Devitt-Pendlebury Scholarship, £50, Anatomy and Physiology, except in the case of (*c*), subject of examination for which is General Pathology

This year, in addition to these Scholarships, Exhibitions each of the value of £40 and up to six in number, will be awarded to candidates of approved merit in the Entrance Scholarships Examination The others are as follows (*f*) Allingham Scholarship in Surgery for Students qualified not more than two years, £85, (*g*) and (*h*) two Brackenbury Prizes, one in Medicine and one in Surgery, £33 each, open to students of not more than five years' standing, (*i*) H C Johnson Memorial Prize, £19, Practical Anatomy, (*j*) Pollock Prize, £23, Physiology, Physiological Chemistry, and Histology, (*k*) Clarke Prize, £5, (*l*) Thompson Medal, £9, Clinical Reports; (*m*) Brodie Prize, £8, Clinical Reports; (*n*) Webb Prize, open to perpetual pupils, £34, Bacteriology; (*o*) Sir Francis Laking Memorial Prize, £65, open to students having registrable qualifications

Further information may be obtained from the Dean of the Medical School, Dr. A Feiling

---

GUY'S HOSPITAL—This hospital, founded by Thomas Guy in 1724 for the reception of 400 patients, and enlarged through the aid of a large bequest from the late William Hunt, contains at the present time 616 beds The whole of the medical school has been rebuilt during the last 27 years It provides ample accommodation, with modern equipment, for all the non-clinical subjects of the medical curriculum Within the grounds of the hospital are situated the residential college, with accommodation for 35 students, the students' club, with reading, smoking, luncheon, and dining-rooms, a fives court, and swimming bath The athletic ground and club house is situated at Honor Oak Park, and can be reached in 20 minutes from the hospital

House physicians, house surgeons, out-patient officers and assistant house surgeons, obstetric residents, house surgeons in the departments of ophthalmology and genito-urinary diseases, house physician in the department for diseases of children, clinical assistants, clerks to anæsthetists, surgeons' dressers, clerks to medical units, post-mortem clerks, extern obstetric dressers, and dressers and clerks in the special departments are appointed from among the students upon the recommendation of the Medical Council according to merit There is a Venereal Clinic, in accordance with the Scheme of the Local Government Board and London County Council. Lectures and clinical instruction are given, to which Medical Students and Practitioners are admitted without fee.

The following special departments are attached to the hospital Departments of ophthalmology, laryngology, gynæcology, diseases of children, diseases of the nervous system, dermatology, otology, actino-therapeutics, anæsthetics dentistry, orthopædics, vaccine, tuberculosis, genito-urinary and venereal diseases, Salomon's Welfare Centre (for Maternity and Children)

Scholarships—Six entrance scholarships are awarded annually as follows—(*a*) one War Memorial scholarship, providing a free Medical Education for five years of the value of £200, to be awarded alternately in Arts and Science (*next award, July, 1928*), (*b*) one Open Arts Scholarship of £100 for students under 21 years of age, Latin, English, Greek, or French or German, Arithmetic, Euclid, and Algebra, (*c*) one Open Junior Science scholarship for students under 21 years, £100, subjects, any two of the following Inorganic Chemistry, Physics, and Biology; (*d*) a confined Junior Science scholarship of the value of £100 is offered for competition, annually in July, to candidates who have attended the Preliminary Science Classes at this School, (*e*) two open Science scholarships (1) a War Memorial scholarship of the value of £80, awarded annually in September, (2) an open scholarship of the value of £80, awarded annually in September, for students under 25 years of age who have completed the curriculum for, or passed the examination in, Anatomy and Physiology for a medical degree in any University of the British Empire, and have not entered as students in any Metropolitan Medical School, subjects, any two of the following Anatomy, Physiology, Organic Chemistry, Pharmacology, General Pathology.

Fees —Matriculation £2 12*s* 6*d* for each entry, at provincial examinations an additional local fee is charged First examination for Medical Degrees £6 6*s* for each entry to the entire examination For re-examination in one subject the fee is £2 2*s* Second examination, Part I £3 3*s*, repeated on each subsequent entry, Part II £9 9*s* for the whole examination Third examination · £12 12*s* for each entry to the whole examination M D Examination · £21, for re-examination £10 10*s* M S Examination: As for M D

Full details of the prescribed curricula of study and the names of the recognised Internal and External Schools of the University, can be obtained free on application to the Academic Registrar, University of London, South Kensington, S W 7

MEDICAL SCHOOLS OF THE UNIVERSITY OF LONDON[1]

St Bartholomew's Hospital and College —The hospital contains 757 beds, of which 687 are for patients in the hospital at Smithfield and 70 at the Alexandra Hospital, Swanley It receives over 9000 in-patients annually and its out-patients and casualties amount to more than 75,000 annually Special departments have been organised for Diseases of Women and Children, the Eye, Ear, Larynx, and Skin, as well as for Orthopædic and Dental Surgery, and for Electro-therapeutics and X Ray work Surgical operations take place every day, except Saturdays, at 1 30 P M, and Surgical consultations are held on Thursdays at the same hour Medical consultations are held on Thursdays at 3 15 P M The physicians and surgeons deliver clinical lectures weekly during both the winter and the summer sessions Clinical lectures on all special subjects are also given Wholetime Clinical Units under Professors of Medicine and Surgery have been established

Ten house physicians and ten house surgeons are appointed annually, and are provided with rooms and board by the hospital authorities and receive £80 a year as salary A resident midwifery assistant, an ophthalmic house surgeon, and a house surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and board, and receive a salary of £80 a year Three resident administrators of anæsthetics are appointed, the senior for one year at a salary of £150, and two juniors for six months with a salary at the rate of £80 per annum, with board and rooms An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year The clinical clerks, the obstetric clerks, the clerks to the medical out-patients, the dressers to the surgical in-patients and to the out-patients, and the dressers in the special departments are chosen from the students A residential college is attached to the hospital

There are quarters for the resident staff, casualty, medical, surgical, and special out-patient departments, casualty wards, dispensary, and clinical lecture theatre There is a chemical laboratory attached to the Medical College as well as a laboratory devoted to instruction in Public Health A block is devoted to Pathology, and contains the post-mortem room as well as extensive laboratories for bacteriology, clinical pathology, and pathological chemistry *The Medical School Buildings* include three large lecture theatres, a large dissecting room, laboratories for chemistry, biology, morbid anatomy and histology, and public health, as well as a spacious library (containing 14,500 volumes), a well-appointed museum of anatomy, physiology, comparative anatomy, materia medica, botany, and pathological anatomy The pathological museum is the most complete in the kingdom A new block in Giltspur-street has recently been acquired and has been fitted up as lecture theatres and laboratories for physics, chemical physiology, experimental physiology, histology, and pharmacology

Special Classes for the Primary and Final F R C S are held twice yearly. *Instruction in Preliminary Science* is given to University of London students in chemistry, biology, and physics throughout the year Facilities for research work are afforded in the Clinical Units and Laboratories of pathological and other departments *A Vacation Post-graduate Course*, adapted to the needs of general practitioners, is given annually The recreation ground of 10 acres is at Winchmore Hill for the use of the members of the Students' Union, which all students are expected to join The Students' Union contains a large reading and smoking room, a committee and writing room, luncheon and dining hall, and a miniature rifle range

Scholarships given in aid of Medical Study —At the school various Scholarships, prizes, &c, are given For five of the Scholarships and the Exhibition—namely, (*a*), (*b*), two Entrance Scholarships in Science of the respective values of £75 and £100, (*c*) Entrance Scholarship in Arts, £100, (*d*) Jeaffreson Exhibition, £50; and (*e*) Shuter Scholarship, £50—a full or University course at St Bartholomew's Hospital is required The awards of (*a*) and (*b*) are made after examination in selections from the subjects of Chemistry, Physics, Zoology, Botany, Physiology Anatomy, and Pathology, (*c*) and (*d*) are awarded after examination in Mathematics, Latin or Greek or French or German, a second language or Chemistry or Physics, (*e*) is awarded after competitive examination among Cambridge Graduates in Anatomy and Physiology The more important of the other Scholarships and prizes are as follows —Four Junior Scholarships—(*f*) No 1, £30, Anatomy and Physiology, (*g*) No 2, £20, Anatomy and Physiology, (*h*) No 3, £25, Chemistry, Physics, and Biology, (*i*) No 4 £15 Chemistry, Physics, and Biology. (*j*) Senior Scholarship, £50, Anatomy, Physiology, and Chemistry. (*k*) Kirkes Scholarship, £30 and medal, Clinical Medicine, (*l*) and (*m*) two Brackenbury Scholarships, £39 each, one in Medicine and one in Surgery; (*n*) Sir G Burrows Prize, 10 guineas, Pathology, (*o*) Skynner Prize, 13 guineas, Regional and Morbid Anatomy, (*p*) Matthews Duncan Medal and Prize, £20, Midwifery and Gynæcology, (*q*) Luther Holden Research Scholarship in Surgery, awarded by election, £105, (*r*) Lawrence Research Scholarship and Gold Medal in Pathology, awarded by election, £115, and (*s*) Baly Scholarship in Clinical Medicine, £75, awarded by examination

Information may be obtained on application to the Dean of the Medical College Dr T W Shore The Warden of the Residential College is Mr R M Vick

Charing Cross Hospital —The Hospital, to which the School is attached, contains 300 beds Over 3000 cases pass through its wards each year, and some 24,000 out-patients and casualties are treated There are special departments for Mental Diseases, Midwifery, Diseases of Women, of Children, of the Skin, Ear, Throat, Nose, and Teeth, for Orthopædic Cases, X Ray work, and for Electrical Treatment

Appointments —In the Medical School Demonstratorships and Assistant Demonstratorships are open to students of the School Medical, Surgical, and Obstetric Registrars to the Hospital are appointed annually Six House Physicians, six House Surgeons, and two Resident Obstetric Officers are appointed each year

Primary and Intermediate Studies —By an agreement with the University of London the School sends its Primary and Intermediate Students to receive their lectures and practical work at King's College, which is situated within four minutes' walk

Final Studies —These are taken in the school and hospital, where systematic lectures, demonstrations, and tutorial classes are arranged to cover all the subjects necessary for qualifying examinations Departments are also available for other final subjects of Materia Medica and Operative Surgery

---

[1] For Ancillary Metropolitan Medical Schools see p 436

An Institute of Pathology with a whole-time staff of scientific workers and fully equipped Laboratories has been established in the School Students receive their training in Preventive Medicine, Pathology, Bacteriology, and Biochemistry here, and are encouraged to undertake Research Special facilities are available for Post-graduate Research and Study

The course in Ophthalmology is given in the Royal Westminster Ophthalmic Hospital adjoining Special demonstrations are arranged for Post-graduates.

The *Museum* contains over 4000 specimens, including a notable collection of over 800 gynæcological specimens, "The Cuthbert Lockyer Collection"

Students' Club—The social comfort and convenience of students are met by library, reading, and smoking-rooms, refreshment-room, &c The Club, which is under the control of a Committee of Students, provides needful athletic recreation, and includes the Medical Society An athletic ground, comprising six acres, has recently been acquired and is now in use.

Women Students—Women students are admitted to the School and Hospital upon the same terms and conditions as men, and after qualification are eligible for resident Hospital appointments

Fees—Entrance · Primary and Intermediate, 10 guineas; Final, 8 guineas; Annual, £42

Further information may be obtained on application to the Dean, Dr W J Fenton, Medical School, Charing Cross Hospital, London, W C

ST GEORGE'S HOSPITAL—This hospital has a service of 436 beds, of which 180 are allotted to surgical, 150 to medical cases, and 100 are at the Convalescent Hospital at Wimbledon One ward is set apart for Diseases Peculiar to Women, and there is a Maternity Ward of 11 beds Children's beds are placed in the women's wards Two wards are allotted to ophthalmic cases

Entrance Scholarships and Endowed Prizes of a total value of £700 are awarded annually, a detailed list is placed below. The entire teaching and laboratories are now devoted to purely clinical subjects, and arrangements have been made with the authorities of King's College for students who enter the first, second, or third year of the curriculum as students of St George's to carry out the necessary courses of instruction at that College Students then complete their course, without payment of any entrance fee, in a school entirely devoted to clinical work.

Twelve house physicians, 12 house surgeons, and 12 casualty officers are appointed annually. Special attention is directed to the following paid appointments, among others, which are open to students after they have held house office.—Resident Assistant Physician and Resident Assistant Surgeon, at £350 per annum each; Medical Officer to the Atkinson-Morley Convalescent Hospital, at £300 per annum; Medical Registrarship at £200 per annum, Surgical Registrarship at £200, Assistant Curatorship of the Museum at £100, Obstetric Assistantship (Resident) at £50, the post of Resident Anæsthetist at £100. the posts (2) of Junior Anæsthetists, each at £30 The St George's Hospital Club, with smoking- and luncheon-rooms on the hospital premises, and an athletic ground at Wimbledon, is an amalgamation of the Hunterian Society, the *Gazette*, and the Rugby football, cricket, lawn tennis, boxing, rifle, and golf clubs Students have the advantage of a library of medical and scientific books which is kept up to date

Scholarships and Prizes—At this school five entrance scholarships are given, the money value and the subjects of examination being as follows: (*a*) and (*b*) two William Brown Exhibitions, £120 and £80 respectively, (*c*) and (*d*) two University Entrance Scholarships, 90 guineas and £70 respectively; (*e*) Devitt-Pendlebury Scholarship, £50, Anatomy and Physiology, except in the case of (*c*), subject of examination for which is General Pathology

This year, in addition to these Scholarships, Exhibitions each of the value of £40 and up to six in number, will be awarded to candidates of approved merit in the Entrance Scholarships Examination. The others are as follows: (*f*) Allingham Scholarship in Surgery for Students qualified not more than two years, £85, (*g*) and (*h*) two Brackenbury Prizes, one in Medicine and one in Surgery, £33 each, open to students of not more than five years' standing, (*i*) H. C Johnson Memorial Prize, £19, Practical Anatomy; (*j*) Pollock Prize, £23, Physiology, Physiological Chemistry, and Histology; (*k*) Clarke Prize, £5; (*l*) Thompson Medal, £9, Clinical Reports; (*m*) Brodie Prize, £8, Clinical Reports; (*n*) Webb Prize, open to perpetual pupils, £34, Bacteriology; (*o*) Sir Francis Laking Memorial Prize, £65, open to students having registrable qualifications

Further information may be obtained from the Dean of the Medical School, Dr. A. Feiling

---

GUY'S HOSPITAL—This hospital, founded by Thomas Guy in 1724 for the reception of 400 patients, and enlarged through the aid of a large bequest from the late William Hunt, contains at the present time 616 beds The whole of the medical school has been rebuilt during the last 27 years. It provides ample accommodation, with modern equipment, for all the non-clinical subjects of the medical curriculum Within the grounds of the hospital are situated the residential college, with accommodation for 35 students, the students' club, with reading, smoking, luncheon, and dining-rooms, a fives court, and swimming bath. The athletic ground and club house is situated at Honor Oak Park, and can be reached in 20 minutes from the hospital

House physicians, house surgeons, out-patient officers and assistant house surgeons, obstetric residents, house surgeons in the departments of ophthalmology and genito-urinary diseases, house physician in the department for diseases of children, clinical assistants, clerks to anæsthetists, surgeons' dressers, clerks to medical units, post-mortem clerks, extern obstetric dressers, and dressers and clerks in the special departments are appointed from among the students upon the recommendation of the Medical Council according to merit There is a Venereal Clinic, in accordance with the Scheme of the Local Government Board and London County Council. Lectures and clinical instruction are given, to which Medical Students and Practitioners are admitted without fee.

The following special departments are attached to the hospital Departments of ophthalmology, laryngology, gynæcology, diseases of children, diseases of the nervous system dermatology, otology, actinotherapeutics, anæsthetics dentistry, orthopædics, vaccine, tuberculosis, genito-urinary and venereal diseases, Salomon's Welfare Centre (for Maternity and Children)

Scholarships.—Six entrance scholarships are awarded annually as follows.—(*a*) one War Memorial scholarship, providing a free Medical Education for five years of the value of £200, to be awarded alternately in Arts and Science (next award, July, 1928); (*b*) one Open Arts Scholarship of £100 for students under 21 years of age, Latin, English, Greek, or French or German, Arithmetic. Euclid, and Algebra; (*c*) one Open Junior Science scholarship for students under 21 years, £100; subjects, any two of the following: Inorganic Chemistry, Physics, and Biology; (*d*) a confined Junior Science scholarship of the value of £100 is offered for competition, annually in July, to candidates who have attended the Preliminary Science Classes at this School; (*e*) two open Science scholarships. (1) a War Memorial scholarship of the value of £80, awarded annually in September, (2) an open scholarship of the value of £80, awarded annually in September, for students under 25 years of age who have completed the curriculum for, or passed the examination in, Anatomy and Physiology for a medical degree in any University of the British Empire, and have not entered as students in any Metropolitan Medical School; subjects, any two of the following: Anatomy, Physiology, Organic Chemistry, Pharmacology, General Pathology.

Fees —Matriculation £2 12*s* 6*d* for each entry, at provincial examinations an additional local fee is charged. First examination for Medical Degrees £6 6*s* for each entry to the entire examination For re-examination in one subject the fee is £2 2*s* Second examination, Part I £3 3*s*, repeated on each subsequent entry ; Part II £9 9*s* for the whole examination Third examination · £12 12*s* for each entry to the whole examination M D Examination. £21 ; for re-examination £10 10*s* M S Examination : As for M D

Full details of the prescribed curricula of study and the names of the recognised Internal and External Schools of the University, can be obtained free on application to the Academic Registrar, University of London, South Kensington, S W 7

MEDICAL SCHOOLS OF THE UNIVERSITY OF LONDON [1]

St Bartholomew's Hospital and College —The hospital contains 757 beds, of which 687 are for patients in the hospital at Smithfield and 70 at the Alexandra Hospital, Swanley It receives over 9000 in-patients annually and its out-patients and casualties amount to more than 75,000 annually Special departments have been organised for Diseases of Women and Children, the Eye, Ear, Larynx, and Skin, as well as for Orthopædic and Dental Surgery, and for Electro-therapeutics and X Ray work Surgical operations take place every day, except Saturdays, at 1 30 P M, and Surgical consultations are held on Thursdays at the same hour Medical consultations are held on Thursdays at 3 15 P M The physicians and surgeons deliver clinical lectures weekly during both the winter and the summer sessions Clinical lectures on all special subjects are also given Wholetime Clinical Units under Professors of Medicine and Surgery have been established

Ten house physicians and ten house surgeons are appointed annually, and are provided with rooms and board by the hospital authorities and receive £80 a year as salary. A resident midwifery assistant, an ophthalmic house surgeon, and a house surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and board, and receive a salary of £80 a year Three resident administrators of anæsthetics are appointed, the senior for one year at a salary of £150, and two juniors for six months with a salary at the rate of £80 per annum, with board and rooms An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year The clinical clerks, the obstetric clerks, the clerks to the medical out-patients, the dressers to the surgical in-patients and to the out-patients, and the dressers in the special departments are chosen from the students A residential college is attached to the hospital.

There are quarters for the resident staff, casualty, medical, surgical, and special out-patient departments, casualty wards, dispensary, and clinical lecture theatre There is a chemical laboratory attached to the Medical College as well as a laboratory devoted to instruction in Public Health A block is devoted to Pathology, and contains the post-mortem room as well as extensive laboratories for bacteriology, clinical pathology, and pathological chemistry *The Medical School Buildings* include three large lecture theatres, a large dissecting room, laboratories for chemistry, biology, morbid anatomy and histology, and public health, as well as a spacious library (containing 14,500 volumes), a well-appointed museum of anatomy, physiology, comparative anatomy, materia medica, botany, and pathological anatomy The pathological museum is the most complete in the kingdom A new block in Giltspur-street has recently been acquired and has been fitted up as lecture theatres and laboratories for physics, chemical physiology, experimental physiology, histology, and pharmacology.

Special Classes for the Primary and Final F R C S are held twice yearly *Instruction in Preliminary Science* is given to University of London students in chemistry, biology, and physics throughout the year Facilities for research work are afforded in the Clinical Units and Laboratories of pathological and other departments *A Vacation Post-graduate* Course adapted to the needs of general practitioners, is given annually The recreation ground of 10 acres is at Winchmore Hill for the use of the members of the Students' Union, which all students are expected to join The Students' Union contains a large reading and smoking room, a committee and writing room, luncheon and dining hall, and a miniature rifle range

Scholarships given in aid of Medical Study —At this school various Scholarships, prizes, &c, are given For five of the Scholarships and the Exhibition—namely, (*a*), (*b*), two Entrance Scholarships in Science of the respective values of £75 and £100, (*c*) Entrance Scholarship in Arts, £100, (*d*) Jeaffreson Exhibition, £50 ; and (*e*) Shuter Scholarship, £50—a full or University course at St Bartholomew's Hospital is required The awards of (*a*) and (*b*) are made after examination in selections from the subjects of Chemistry, Physics, Zoology, Botany, Physiology Anatomy, and Pathology, (*c*) and (*d*) are awarded after examination in Mathematics, Latin or Greek or French or German, a second language or Chemistry or Physics, (*e*) is awarded after competitive examination among Cambridge Graduates in Anatomy and Physiology The more important of the other Scholarships and prizes are as follows —Four Junior Scholarships—(*f*) No 1, £30, Anatomy and Physiology, (*g*) No 2, £20, Anatomy and Physiology, (*h*) No 3 £25, Chemistry, Physics, and Biology, (*i*) No 4, £15, Chemistry, Physics, and Biology. (*j*) Senior Scholarship, £50, Anatomy, Physiology, and Chemistry. (*k*) Kirkes Scholarship, £30 and medal, Clinical Medicine, (*l*) and (*m*) two Brackenbury Scholarships, £39 each, one in Medicine and one in Surgery, (*n*) Sir G Burrows Prize, 10 guineas, Pathology, (*o*) Skynner Prize, 13 guineas, Regional and Morbid Anatomy, (*p*) Matthews Duncan Medal and Prize, £20, Midwifery and Gynæcology; (*q*) Luther Holden Research Scholarship in Surgery, awarded by election, £105, (*r*) Lawrence Research Scholarship and Gold Medal in Pathology, awarded by election, £115, and (*s*) Baly Scholarship in Clinical Medicine, £75, awarded by examination

Information may be obtained on application to the Dean of the Medical College Dr T W Shore The Warden of the Residential College is Mr. R M Vick

Charing Cross Hospital —The Hospital, to which the School is attached, contains 300 beds Over 3000 cases pass through its wards each year, and some 24,000 out-patients and casualties are treated There are special departments for Mental Diseases, Midwifery, Diseases of Women, of Children, of the Skin, Ear, Throat, Nose, and Teeth, for Orthopædic Cases, X Ray work, and for Electrical Treatment.

Appointments —In the Medical School Demonstratorships and Assistant Demonstratorships are open to students of the School Medical, Surgical, and Obstetric Registrars to the Hospital are appointed annually Six House Physicians, six House Surgeons, and two Resident Obstetric Officers are appointed each year

Primary and Intermediate Studies —By an agreement with the University of London the School sends its Primary and Intermediate Students to receive their lectures and practical work at King's College, which is situated within four minutes' walk

Final Studies —These are taken in the school and hospital, where systematic lectures, demonstrations, and tutorial classes are arranged to cover all the subjects necessary for qualifying examinations Departments of Materia Medica and Operative Surgery are also available for other final subjects

---

[1] For Ancillary Metropolitan Medical Schools see p 436

To each medical and surgical firm throughout the hospital there is attached a First Assistant, who is responsible for instructing the clerks or dressers of the firm in elementary medicine and surgery, and who assists the honorary members of the firm in the preparation of their demonstrations Special courses of lectures and demonstrations are arranged in Medicine and Surgery and their ancillary subjects Opportunities for research are provided under the supervision of the staff

Owing to the large number of patients more appointments are open to students before and after qualification than at any other hospital Holders of resident appointments have free board. Special classes are held for the examinations of the University of London, for the Fellowship of the Royal College of Surgeons, for the Membership of the Royal College of Physicians, and for other higher examinations Special entries for medical and surgical practice can be made A residential Hostel on hospital grounds is provided for the convenience of students The Union Athletic Ground, 13 acres, is within easy reach of the hospital

Scholarships and Prizes —The following is a list of the Scholarships and Prizes —Price Scholarship £100, and one Entrance Scholarship of £50, subjects of First Medical Examination at the University of London, Epsom College Scholarship, free education, subjects of First Medical Examination as above, Price Scholarship, open to students of Oxford and Cambridge Universities, £75, Human Anatomy and Physiology; Buxton Prize, £40, subjects of Anatomy and Physiology; three Prizes for Clinical Work, £20 each, Medicine, Surgery, and Obstetrics and Gynæcology; Sutton Prize, £20, Pathology, Duckworth Nelson Prize, biennial, £10, Practical Medicine, and Surgery, Letheby Prizes (2), £25, Chemistry and Chemical Pathology, eight Dressers' Prizes, amounting to £40, zeal, efficiency, and knowledge of Elementary Clinical and Minor Surgery; Hutchinson Prize, triennial, £60, Clinical Surgery, Treves Prize, £15, Clinical Surgery, two Practical Anatomy Prizes, £6 and £4 respectively, Andrew Clark Prize, biennial, £26, Clinical Medicine and Pathology, James Anderson Prizes (4), £20, Elementary Clinical Medicine, Arnold Thompson Prize, £15, Diseases of Children, K E D Payne Prize, £20, Pathology, and Liddle Prize, triennial, £120

Medical Research Funds —Funds to the value of over £90 000 permit of financial assistance being given to students and graduates engaged in Medical Research

Dean Professor William Wright, London Hospital Medical College, E 1

ST MARY'S HOSPITAL MEDICAL SCHOOL —The Hospital and Medical School are situated close to Paddington station (G W R.) having on one side a poor district of 500 000 persons, and on the other side the residential districts of Kensington and Bayswater The hospital contains 288 beds and, by a scheme of affiliation, for teaching purposes, of certain neighbouring hospitals, the teaching facilities extend over 1000 beds The Athletic ground (10 acres) is situated at Wembley and can be reached in 20 minutes by a constant service of trains A large pavilion has recently been added

Clinical Facilities —Clinical Units in Medicine and Surgery were established in 1920, and have now been formally recognised by the University Grants Committee, St Mary's being one of the six Medical Schools in London which enjoy this privilege Lying-in beds have recently been added, and, in addition to this, arrangements have been made by which all students take out a short course of instruction in Practical Midwifery at Queen Charlotte's Hospital without additional fee

Institute of Pathology and Research —Students specially interested in Pathology and Bacteriology have singular advantages at St Mary's The institute comprises seven special departments, the whole being under the personal direction of Sir Almroth Wright, F R S

Appointments —Research Scholarships of £200 each are awarded annually to students working in the departments of the institute; and research beds have been instituted Clerkships in Pathology, Bacteriology, and Chemical Pathology, lasting for a period of three months, are open to students of the fifth year, and enable them to carry out the Pathological and Bacteriological investigations of the wards, and learn the necessary technique under supervision Seventy-two of these posts are available annually Numerous appointments are open to newly-qualified members of the Medical School, including ten salaried posts with salaries varying from £200 to £750 per annum

Complete Curriculum —The Medical School provides complete courses of instruction, and students can join at once on passing a Preliminary Examination in Arts Terms begin in October, January, and April.

Entrance Scholarships —Two Entrance Scholarships of the value of £210 each are awarded annually, and one or more University Scholarships of £200.

Fees.—Composition Fee for entire curriculum (5½ years) £200 in one sum, or £210 by four annual instalments Composition Fee for Clinical curriculum (2½ years) 90 guineas in one sum, or 95 guineas by two annual instalments As an alternative, students may pay an annual fee of 40 guineas with an entrance fee of 10 guineas

---

MIDDLESEX HOSPITAL —The hospital contains over 450 beds, with special wards for Cancer, Maternity and Gynæcological and Ophthalmological cases, and for Diseases of Children. Other special departments include those for Diseases of the Eye, Ear, Nose and Throat, and Skin, Nervous diseases, Orthopædic cases, Diseases of the Rectum and Venereal Diseases There is also an Electro-Therapeutic department The Cancer Charity, containing 92 beds and Special Investigation Laboratories, offers unrivalled opportunities for the study of Cancer, both in its clinical and pathological aspects In the Electro-Therapeutic Department, students obtain instruction in the Treatment of Lupus and Cancer by the X ray method of treatment

The Medical School, which includes the Bland-Sutton Institute of Pathology and the Cancer Research Laboratories is fully equipped for the theoretical and practical teaching of all the subjects of the medical curriculum, and for the Diplomas in Public Health, for which two courses are held yearly, commencing in April and October. Ample laboratory and classroom accommodation is provided The teaching staff includes 6 Professors, 32 recognised Teachers, 10 Demonstrators, 4 tutors The Bland-Sutton Institute of Pathology is completely equipped for routine hospital investigations, teaching and research work, and contains a new lecture theatre and large pathological, bacteriological, and clinical laboratories, also smaller laboratories for individual research work A well-equipped Anatomical and Pathological Museum and Reference Library offer every facility

Other features of interest are · the institution of a course in Medical Radiology and Electrology, under the direction of the "Joel" Professor of Physics; D P H course, under the direction of Dr Charles Porter, M O H, St Marylebone Primary F R C S class will resume in July

Special classes are held to prepare students for the Intermediate Examinations of the Universities

Hospital Appointments —All appointments are made without fee of any kind, and the following are appointed at intervals annually six house physicians, eight house surgeons, two obstetric and gynæcological house surgeons, two casualty medical officers, two casualty surgical officers, one resident anæsthetist, and two resident officers to the special departments The medical and surgical casualty officers are appointed twice a year Nine registrars are appointed annually Non-resident qualified clinical assistants are appointed to assist in the various out-patient departments Clinical clerks and surgical dressers are also appointed in every department

In agreement with the practice of the Universities, an allowance will be made (1) for Military Service performed by candidates the term "military service" meaning service in the Naval or Military Forces of His Majesty or of His Majesty's Allies during the war; or (2) in respect of other approved duties in connexion with national defence.

The Dean of the Medical School is Prof. T. B. Johnston, from whom information may be obtained.

University of London: King's College.—The Medical Faculty at this College deals with Preliminary and Intermediate subjects, and instruction in these subjects is given in the College laboratories by university professors and their assistants to students entering the College directly and also to students of the following four hospital schools which prepare only for the final examinations—viz., King's College Hospital, Westminster Hospital, St. George's Hospital, and Charing Cross Hospital. The Faculty is open to both men and women.

Scholarships.—(*a*) Two Warneford Entrance Scholarships of £30 each for four years. Examination in April, subjects selected from Divinity, Classics, Science. (*b*) Sambrooke Scholarship of £30 for three years. Examination in April, subjects selected from Classics, Science. (*c*) Worsley Scholarships £100 in five annual instalments of £20. (*d*) Rabbeth Scholarships of £30 and £15 for best work in first year. (*e*) Second Year Scholarship of £20 tenable for one year. (*f*) Daniell Scholarship of £40 for one year. Awarded on University Honours Examination.

Fees.—Tuition fee of 35 guineas for the first year, £42 per annum for the second and third years, with a materials fee of 4 guineas in the first year, 6 guineas in the second year, 4 guineas in the third year. For prospectus and further information application should be made to the Dean of the Medical Faculty (Professor E. Barclay-Smith), King's College, Strand, W.C. 2.

Dental Course.—The College, in association with King's College Hospital, has instituted courses for the Degree in Dental Surgery of the University of London and for the Dental Diploma of the Conjoint Board.

Fees.—First year (Chemistry and Physics), 20 guineas; second and third years (Anatomy, Physiology, Dental Mechanics, and Dental Metallurgy), 52 guineas per annum. Fourth and fifth years (Hospital), 60 guineas per annum.

King's College Hospital Medical School.—The final subjects in the curriculum are taught at the Medical School of King's College Hospital, which is situated at Denmark Hill, S.E. 5. The hospital stands in the midst of a large South London population, from which an immense amount of clinical material is forthcoming. During the past year there were 216,483 attendances in the out-patient and casualty departments. Accommodation for 400 beds for in-patients has been built, and provision will ultimately be made for 600 beds. There are special departments for Bacteriology, Children, Clinical Pathology, Dermatology, Gynæcology and Obstetrics, Laryngology, Massage, Neurology, Odontology, Ophthalmology, Orthopædics, Otology, Physicotherapy, Psychological Medicine, Radiology, Rhinology, and Urology, each in charge of a specialist and his staff. Clinics are also held in applied pharmacology, cardiology, and medical chemistry. The appointments open to students are those of clinical assistant to the special departments; medical, surgical, obstetric, and pathological tutorships; resident casualty officers, house physicians and house surgeons; resident anæsthetist; resident radiologist; bacteriologist; clinical pathologist; pathological registrar; and medical, surgical, and obstetric registrarships. Sixteen resident medical and surgical officers are appointed half-yearly.

Scholarships and Prizes.—(*a*) Warneford Scholarships, (*b*) Sambrooke Scholarship, (*c*) Rabbeth Scholarship, £20; (*d*) Medical Entrance Scholarships, £50 (Anatomy and Physiology), and £50 (Pathology and Pharmacology) open to students who (1) propose to take a degree at any British University, and have passed their University examination in Biology, Chemistry, and Physics, and who (2) will become students at King's College Hospital from date of entering upon Scholarship; (*e*) A Medical Entrance Scholarship in Science, value £50, tenable for five years, successful candidates to study at King's College and King's College Hospital. (*f*) Three Medical Scholarships, £40 for fifth-year students, £20 for third-year students, and £20 for second-year students; (*g*) Three Sambrooke Registrarships, open to matriculated students who have filled certain appointments in hospital; (*h*) Carter Prize, £15, Botany; (*i*) Tanner Prize, £10, Obstetrics and Diseases of Women; (*j*) Todd Prize, £4 4s. and medal, Clinical Medicine; (*k*) Two Burney Yeo Entrance Scholarships, £80 each, open to students of Oxford and Cambridge on the nomination of the Regius Professors; (*l*) two Raymond Gooch Scholarships, £120 each, open to students of British Universities on certain conditions; (*m*) an Epsom College Scholarship, value £50, offered annually to a student of Epsom College who has taken the first part of the courses for Medical Degrees at the Universities of Oxford, Cambridge, or London. The Warneford and Sambrooke Scholars are required to take the subjects of the preliminary and Intermediate examinations at King's College, and the final subjects at King's College Hospital.

Dental School.—When the Hospital was built accommodation was provided for a Dental Department. This Department fully equipped, is now in use, together with additional rooms for Dental Metallurgy, by the Dental School, which was opened in November, 1923, under the direction of Mr. A. Livingston, M.B., Ch.B., Mast. Dent. Surg. A full course is given in coöperation with King's College, and includes arrangements for students who desire to avail themselves of the special provisions of the Dentists Act.

Athletics.—The King's College Hospital Clubs and Societies Union was formed in 1908, and consists of the Listerian and Musical Societies, the Students' Common Rooms, and the various athletic and sports clubs. An athletic ground, over six acres in extent, has been provided for the use of the students on Dog Kennel Hill, about ten minutes' walk from the hospital. There are also Tennis Courts in the grounds of the Hospital and of "The Platanes"—a hall of residence available for students belonging to the hospital.

Fees.—The composition fee for Hospital work and Final Medical subjects of the curriculum is 93 guineas if paid in one sum, or 95 guineas if paid in two instalments, in addition to the Entrance Fee of 10 guineas. The Calendar of the School will be sent on application to either of the following: Dr. H. Willoughby Lyle, *Dean*; Mr. S. C. Ranner, *Secretary of the Medical School*, King's College Hospital, Denmark Hill, S.E. 5.

London Hospital.—The hospital, with its Medical College and Dental School, is situated in Mile End-road. The hospital contains 950 beds of which number 849 are in constant use, and is the only general hospital for East London. During last year 18,237 in-patients and 132,023 out-patients received treatment, while 7991 major operations were performed. 41,831 out-patients attended the special departments for diseases of the Eye, Ear, Nose and Throat, Skin, Teeth, &c., and the Pediatric, Orthopædic, Venereal, Radiological, Electro- and Physico-Therapeutical and Inoculation Departments. The hospital presents, therefore, a large field for clinical instruction, and in its Wards and Out-patient Departments exceptional opportunities are afforded for acquiring an extensive and practical experience in all phases of disease.

A Clinical Unit in Medicine, under the charge of a whole-time director, provides for the more elaborate methods of diagnosis and treatment, and takes a leading part in the initiation and coordination of medical research.

also the Departments of Anatomy, Histology, Physiology, Biochemistry, and Pharmacology (the Intermediate Medical Sciences), and the Department of Hygiene and Public Health Research work is undertaken in all departments The completion of the Institute of Medical Sciences, which the generosity of the Rockefeller Foundation made possible, provides exceptional facilities for research and post-graduate study in anatomy, physiology, and pharmacology In particular might be specified the opportunities for investigation in human and comparative embryology and neurology, in histology, radiology, anthropology, biochemistry, and experimental physiology and experimental embryology Arrangements exist for the close correlation of work in the Institute with University College Hospital and Medical School

Faculty of Medical Sciences —Composition Fees —For the courses required by the University of London 1 For the First Medical Course, 35 guineas, entitling to one attendance and to the privileges of the Union Society for one session 2 For the Second Medical (Intermediate) Course 80 guineas, payable in two instalments of 40 guineas each This fee entitles to attendance at Anatomy and Physiology during three years and to one attendance at Organic and Applied Chemistry, and Pharmacology, and to the privileges of the Union Society or the Women's Union Society for two sessions

For the medical education required by the Examining Board in England (i) For the course for the Premedical Examination, 35 guineas, entitling to attendance and to the privileges of the Union Society for one session (ii) For the course for the First Examination, 80 guineas, payable in two instalments of 40 guineas each This fee entitles to attendance during three years (including one attendance at each Practical Course in Physiology) in all subjects except Practical Pharmacy It also entitles to the privileges of the Union Society for two sessions

Scholarships and Prizes —The first three items on the present list require a complete intermediate course at University College The money value and subjects at examinations are as follows (*a*) The Bucknill Scholarship, 160 guineas; (*b*) and (*c*) two Entrance Exhibitions, 55 guineas each, Chemistry, Physics, Botany, and Zoology , (*d*) Cluff Memorial Prize, £15 biennially, Anatomy, Physiology, Pharmacology, and Chemistry , (*e*) Schafer Prize in Physiology, £18 triennially , (*f*) Sharpey Physiological Scholarship, £200, Biological Sciences , (*g*) Morris Bursary for sons of deceased professional men, by nomination, tenable for two years, £16 a year , and (*h*) five Gold and five Silver Medals awarded annually in various departments

Women students are admitted

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL Dean Sir George Blacker Vice-Dean Mr Gwynne Williams Secretary Mr G E Adams Open to men and a limited number of women students Fees for Preliminary and Intermediate Course See under University College For the Final M B , B S (London) Course, 112 guineas if paid in one sum, 115 guineas if paid in two instalments, as follows—first year, 70 guineas , second year, 45 guineas This fee entitles to attendance on lectures and hospital Practice during three years and to one attendance on Practical Pathology *and Practical Surgery* Vaccination, Pharmacy and attendance at a Fever Hospital are not included This course of instruction is also suitable for the corresponding examinations at the Universities of Oxford, Cambridge, Durham, and other British Universities, and for the medical education required by the Examining Board in England and the Society of Apothecaries There are over 300 beds in the hospital

Clinical Units in Medicine and Surgery are now in operation The whole-time Directors of the Units are concerned with the organisation of the teaching generally, but the honorary staff are responsible for the largest share of the teaching in the wards and Out-patient Department of the hospital A Unit in Obstetric Medicine has been established now that the new Obstetric Hospital is finished

The new buildings of the Obstetric Hospital of 60 beds (rendered possible by the Rockefeller Benefaction), the new Residents' House (with accommodation for 30 residents and students), the extension to the Nurses' Home, and the new research laboratories for the Medical School, are now finished and in full occupation

Special Departments, Clinical and Laboratory Facilities —Those who are desirous of carrying out original research in Pathology, including Morbid Anatomy, Bacteriology, Experimental Pathology, and Chemical Pathology, are admitted to work in the laboratories of the school by the Professor of Pathology, and under certain conditions can receive grants from the Charles Graham Medical Research Fund A special course of instruction is given in conjunction with University College for preparation for the examinations for Diplomas in Public Health of the various universities and examining bodies In the Dental School in Great Portland-street, formerly known as the National Dental Hospital, there is afforded the opportunity for attending lectures and practical instruction in diseases of the mouth and teeth.

Appointments tenable by Students —Clerkships and dresserships to the physicians, surgeons, anæsthetist, and pathologist are allotted amongst the students of the hospital Maternity students are appointed each month and reside in the Students' House connected with the Medical School and Hospital Twelve house physicians, eight house surgeons, four senior and four junior obstetric assistants (of the total number of resident officers not more than three may be held by women students at any one time) are selected annually by examination from among the senior students who have a medical qualification The house physicians and house surgeons reside free in the hospital for six months, and the senior obstetric assistants for three months In addition to these posts there are certain special appointments which are vacant from time to time and are filled by senior students of the hospital Resident Medical Officer, Surgical Registrar, Medical Registrar, Obstetric Registrar, Harker-Smith Cancer Registrar, Ophthalmic Registrar, Casualty Medical Officer and a Casualty Surgical Officer, Assistants in Ear and Throat, Skin and Venereal Diseases Departments, and House Anæsthetist

Museum of Pathological Anatomy —The Museum is open for study from 9 A M to 5 P M Microscopic sections of most of the specimens in the Museum have been prepared and are available for the use of students on application to the Curator The Museum contains 1100 admirable paintings by Sir Robert Carswell and Sir Charles Bell and a collection of instruments formerly belonging to Robert Liston

The Anatomical Museum of the University of London, University College, is open to all students of University College Hospital and Medical School on the recommendation of the School Committee

The Medical Library is open daily for the purposes of study to every student of the Medical School from 9 A M to 5 P M , Saturdays 9 A M to 1 P M It contains about 20,000 works on medical subjects, including all the current text-books and works of reference required for study or research

The Medical Society of University College Hospital Medical School exists for the dual purpose (1) of promoting the study of medical and surgical science, and (2) of promoting social intercourse among its members All male students of the Medical School are required to become members Meetings are held once a fortnight for the purpose of discussing subjects connected with the study of medicine *In its social* aspect the society includes various athletic clubs and superintends the gymnasium and squash racquet court in the Medical School The Athletic Ground, which is used in conjunction with the Union Society of the University of London, University College, is near the G.W.R Perivale station.

Scholarships, Prizes, &c—Two Entrance Scholarships, value £100 each, and two University Scholarships, value £90 and £60, are awarded annually in September The successful candidates are required to become general students of the school A Freer Lucas Scholarship is awarded annually on the nomination of the Headmaster of Epsom College There are also two Broderip Scholarships, value £60 and £40 respectively, the Lyell Gold Medal and Scholarship, value £55 5*s*, the John Murray Medal and Scholarship, value £25 (awarded every third year). the Freeman Scholarship, value £30; the Hetley Clinical Prize, value £25; the Leopold Hudson Prize, value 11 guineas; and the Second Year's Exhibition, value 10 guineas There are also numerous class prizes

Fees—The fees are arranged on a basis of an annual payment of approximately £45 for the six years of the curriculum. After six years, if the student is not qualified, the annual fee is £23

The Amalgamated Students' Club includes the following Medical Society, Common Room Society, Musical Society, cricket club, football clubs, athletic club, rowing club, chess club, lawn tennis club, and hockey club There are a restaurant and gymnasium in the school buildings, and large athletic grounds at Wembley, with new pavilion The subscription to the Amalgamated Students' Club is included in the above fees Full particulars on application to the Dean, Middlesex Hospital Medical School, W 1.

ST THOMAS'S HOSPITAL —This Hospital received its present charter from King Edward VI, but as a monastic institution was in existence prior to the year 1207. The building occupies a unique position by the river, opposite the Houses of Parliament, and contains 644 beds The in-patients last year numbered 10,777 whilst the number of attendances as out-patients, including the casualty and light departments, was 534,017 There are special departments for the treatment of women, children, diseases of the eye, ear, nose and throat, skin, teeth, and for orthopædics Nervous and mental diseases are treated in special departments An electro-cardiograph has been installed for the investigation of diseases of the heart The Tuberculosis Department forms a part of the Lambeth scheme for treatment of patients and for instruction The Venereal Department has been established as part of the London County Council scheme Departments for Radiology, Electro-therapy, Phototherapy, Massage and Remedial Physical Exercises are also special features A speech clinic has been inaugurated in connexion with the Children's Department. Exceptional facilities are offered in the hospital laboratories for the study of General Pathology, Clinical Pathology, Chemical Pathology, and of Treatment by Serums and Vaccines. Surgical operations take place in the main theatres every day, except Saturdays, at 2 P M Clinical teaching in the wards, out-patients' and special departments, is available every day of the week. Clinical lectures are delivered every Wednesday during the sessions All appointments in the hospital are open to students without extra fee Clinical clerks and dressers for in- and out-patients are selected from students who have completed their third years' work Every student acts as clerk in the post-mortem room and in one of the pathological laboratories, takes his turn on maternity duty under proper supervision in the maternity Ward and district, thus obviating any necessity for seeking instruction elsewhere Students are instructed in the administration of anæsthetics by the hospital anæsthetists The Students' Club comprises a spacious restaurant and smoking and reading room A new Residential Club for Students, now being erected, will be opened early in 1927, and will provide resident quarters for some 60 students There is no occasion for students to leave the hospital buildings during working hours The curriculum is arranged to meet the requirements of all the Examining Bodies Special classes are held for the examinations at the University of London and for the First and Final Fellowship Examinations of the Royal College of Surgeons of England Tutorial classes in all subjects precede the various examinations The hospital is easily accessible from all parts

Appointments Open to Students after Qualification—A Resident Assistant Physician and a Resident Assistant Surgeon at a salary of £225 each per annum, and a Resident Anæsthetist at a salary of £200 per annum are appointed annually Two Hospital Registrars, Medical and Surgical, at an annual salary of £250 each are appointed yearly The tenure of these offices may be renewed for a term not exceeding two years A Pathological Registrar to the Department of Obstetrics and Gynæcology (at an annual salary of £250), an Ophthalmic Registrar (at an annual salary of £50), and an Orthopædic Registrar (unpaid) are appointed yearly Two Senior Resident Casualty Officers (Medical and Surgical) are appointed yearly Eight Resident Casualty Officers and Anæsthetists are appointed every six months Seven House Physicians (including two Obstetric House Physicians, and one House Physician to the Department of Diseases of Children), nine House Surgeons (including two Ophthalmic House Surgeons, one Orthopædic House Surgeon, and two House Surgeons to the Ear, Nose and Throat Department) are appointed every six months Clinical Assistants in the Special Departments are appointed every three months, and hold office for six months if recommended for re-election There are three Assistants in the Department of Pathology, the Senior receives £600 a year, and the two Juniors £450 each

Fees—The annual fees are For each year of study £50. These fees cover all tutorial classes, but do not include instruction in infectious fevers, pharmacy, and vaccination Qualified practitioners are permitted to *attend the hospital practice on terms* which may be ascertained from the Medical Secretary

Scholarships and Prizes—At this school there are five Entrance Scholarships—namely, two in Arts, equivalent to the tuition fees for the first year of study, two in Natural Science, of the value of £150 and £60 respectively, and the University Scholarship of £100 in any two of the following Anatomy, Physiology, Pathology, Chemistry The value of all entrance scholarships must be taken out in tuition fees *The money value and subjects of examination* of the remainder are as follows (*a*) William Tite Scholarship for second-year students, £25, (*b*) and (*c*) Musgrove Scholarship or (alternately) *Peacock* Scholarship, each *for third-year students and tenable* for two years, £35 each, (*d*) Mead Medal, Medicine, Pathology and Hygiene, (*e*) Wainwright Prize, Medicine, (*f*) Toller Prize, Medicine, (*g*) Cheselden *Medal*, *Surgery* and *Anatomy*, (*h*) *Clutton Memorial* Medal in Clinical Surgery, biennial; (*i*) Beaney Scholarship, £50, *biennially*, *Surgery and* Surgical Pathology, (*j*) Solly Medal and *Prize*, biennial, Reports of Cases, (*k*) Sutton Sams Prize, biennial, Report of Cases, (*l*) Bristowe Medal, *Pathology* and Morbid Anatomy, (*m*) *Hadden Prize*, *Pathology* and Morbid Anatomy, (*n*) *Grainger Testimonial Prize*, £31 10*s*, Anatomy and Physiology; (*o*) Louis Jenner Research Scholarship, Pathology, tenable for two years, £60 *annually*, (*p*) *School Council Research* Scholarship, £250 per annum, *tenable for two years*, (*q*) John and Temple Research Fellowship, tenable for two years, £450 *Children*

The Dean of the Medical School is Sir Cuthbert S Wallace, and the Medical Secretary Dr L B Maxwell, from whom any further information may be obtained.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE —University College has been constituted a University centre for the teaching of medical sciences The College Faculty of Medical Sciences comprises the Departments of Physics, Chemistry, Botany, and Zoology (the Preliminary Medical Sciences), Bursary tenable for two years for students already in the School requiring assistance for the prosecution of their medical studies, application to the Secretary by March 31st £20 (*k*) Helen Prideaux Prize and Julia Ann H Cock Prize awarded alternately every year to a student who has become qualified during the two years immediately preceding the award, and to be spent in assisting the holder to further study £60 each (*l*) Dr Edith Pechey Phipson Post-graduate Scholarship of the value of £100, awarded annually in June It is open to all medical women, preferably coming from India, or going to work in India for assistance in Post-graduate study (*m*) Sarah Holborn Scholarship, value £20 a year for three or five years, awarded every alternate year, next award in 1927 (*n*) Dr Margaret Todd Scholarship, tenable for four years, £37 10*s* a year, awarded in alternate years; next award in July, 1927 (*o*) Lieutenant Edmund Lewis and Lieutenant Alan Lewis Memorial Scholarship, tenable for four years awarded every four years, next award in July, 1928 (*p*) Alfred Langton Scholarships, tenable two years, one awarded annually, £50 a year (*q*) School Jubilee Bursary, tenable for three years, £50 a year (*r*) Flora Murray Bursary, awarded every year to a fifth-year student, £50 The Dorothy Chick Gift, £20, is awarded annually for efficiency in Practical Midwifery Two Richardson-Kuhlmann Prizes are given each year, value £12 for proficiency in Clinical Obstetrics, value £8, for proficiency in senior subjects respectively Two Evans Prizes of £2 2*s* and £1 1*s* are given each year on the results of the class examination in Midwifery The Evans Prize for Operative Midwifery, value £5 5*s*, is awarded yearly The Edith Pechey Phipson Prize in Pharmacology, value £3 3*s*, is awarded annually

The Dean of the Medical School is Lady (Florence) Barrett C B E, M D, M S, the Honorary Secretary, Dr Janet Aitken, and the Warden and Secretary, Miss L M Brooks, to whom inquiries may be addressed

UNIVERSITY OF DURHAM

To return to the curriculums of the Universities, there are six English provincial universities providing a full course for the medical student

Nine degrees, two Diplomas, and one Licence are conferred—viz, the degrees of Bachelor of Medicine, Bachelor of Surgery, Doctor of Medicine, Master of Surgery, Doctor of Surgery, Bachelor of Hygiene, Doctor of Hygiene, Bachelor of Dental Surgery, and Master of Dental Surgery the Diploma in Public Health, Diploma in Psychiatry, and the Licence in Dental Surgery

For the degrees of *Bachelor of Medicine* and *Bachelor of Surgery* there are four professional examinations The subjects of the First Examination are—Elementary Biology and Organic Chemistry The subjects of the Second Examination are—Anatomy and Physiology The subjects for the Third Examination are—Materia Medica, Pharmacology, Therapeutics and Pharmacy, Medical Jurisprudence, Public Health, and Pathology and Bacteriology The subjects of the Fourth Examination are—Medicine, Clinical Medicine, Therapeutics, Surgery Clinical Surgery, Operative Surgery, Midwifery and Gynæcology, Psychological Medicine, and Diseases of the Skin, of the Throat Nose, and Ear, and of Children and Ophthalmology It is required that at least one of the five years of professional education shall be spent at the University College of Medicine, Newcastle-upon-Tyne

For the degrees of *Doctor of Medicine* and *Master of Surgery* a candidate must not be less than 24 years of age He must also have obtained the degrees of Bachelor of Medicine and Surgery of the University of Durham and must have been engaged for at least two years subsequently to the date of admission to these degrees in research work, or in attendance on the practice of a recognised hospital, or in the naval or military services, or in medical or surgical practice The candidate for the M D degree may present an essay or undergo a special clinical examination in the Theory and Practice of Medicine The subjects of examination for the M S are—Principles and Practice of Surgery, Surgical Pathology, Surgical Anatomy Surgical Operations, Clinical Surgery

Doctor of Medicine (without residence)—The University of Durham has instituted a special examination whereby the degree of Doctor of Medicine may be obtained without residence Candidates must not be under 40 years of age and must have been in active practice for 15 years as registered medical practitioners They must also produce certificates of moral character from three registered members of the medical profession The fee is 50 guineas (including the degree fee), of which 20 guineas is retained if the candidate fails to satisfy the examiners

Doctor of Surgery—The University of Durham grants the Degree of Doctor of Surgery Candidates for this degree must be registered medical practitioners, and not less than 24 years of age They must devote three years, subsequently to obtaining a registrable qualification, to the study of Surgery and ancillary subjects One at least of the three years must be spent in the University The candidate must submit to the Professor of Surgery the course of study he proposes to follow, and this course must be approved by the Board of the Faculty of Medicine One year shall be devoted mainly to work in the departments of Anatomy, Physiology, Pathology and Bacteriology, and the candidate must submit evidence of having so worked Not less than six months of another year must be spent as resident surgeon in a recognised teaching hospital, and the rest of the year in the study of surgery in a recognised medical centre Not less than six months of one of the three years must be spent in surgical study abroad The fee for the examination is £20, and the fee for the degree is £10

Candidates for any of the above degrees, diplomas, or licence, must give at least 28 days' notice to Professor Howden, Registrar, College of Medicine, Newcastle-upon-Tyne In the case of the M D. (essay) examination candidates must send in their essays before the 1st of April

Scholarships and Prizes—In connexion with this University the following Scholarships and prizes are awarded—University of Durham Entrance Scholarship, £25 a year for four years; Pears' Entrance Scholarship, £40 a year for three years (awarded every third year), Province of Durham Masonic (Entrance) Scholarship, £60; Heath Scholarship for Surgery, £200, available every second year

The following Scholarships are tenable for one year, namely—Tulloch Scholarship for Elementary Biology and Organic Chemistry, £20; Dickinson Scholarship for Medicine, Surgery, Midwifery, and Pathology, Gold Medal and £20, Charlton Scholarship for Medicine, £25, Gibb Scholarship for Pathology, £28; Luke Armstrong Scholarship for Comparative Pathology, £25 Stephen Scott Scholarship for Surgery, £40, Philipson Scholarships for highest marks in Final M B, B S Examinations, two of £48 each; Goyder Memorial Scholarship for Clinical Medicine and Clinical Surgery, interest on £325, Gibson Prize for Midwifery and Diseases of Women and Children, £10; Turnbull Prize and Silver Medal for Surface Anatomy, and Outterson Wood Prize for Psychological Medicine, £10. Sewell Memorial Prize and Silver Medal for Clinical Pathology. At the end of each session a Prize of Books is awarded in each of the regular classes For further information apply to Professor R Howden Registrar of the College

College of Medicine, Newcastle-upon-Tyne—Clinical instruction is given at the Royal Victoria Infirmary, containing about 550 beds. In it adequate accommodation is provided for the study of the various special subjects, in addition to the ordinary clinical work Students do midwifery at the Princess Mary Maternity Hospital

Scholarships and Prizes—At this School the first two Scholarships (*a*) and (*b*) entitle the holder to a complete course at University College and University College Hospital Medical School, the second two (*c*) and (*d*) entitle to a final course at the Medical School The money value and subjects of examination are as follows —(*a*) Entrance Scholarship, Bucknill, 135 guineas, Chemistry, Physics, Botany, and Zoology, (*b*) Epsom Free Medical Scholarship, subjects of Preliminary Scientific Examination and Nomination by Epsom College; (*c*) and (*d*) two Goldsmid Entrance Exhibitions 112 guineas each, Anatomy or Physiology, or General Pathology, (*e*) Graham Scholarship in Pathology £300 per annum for two years, awarded by the Senate of the University of London, (*f*) Atkinson Morley Scholarship, tenable for three years £45 per annum, Surgery, (*g*) Atchison Scholarship, tenable for two years, £55 per annum General Proficiency in Medical Studies, (*h*) Magrath Clinical Scholarship about £150, Clinical Cases. (*i*) Percival Alleyn Scholarship about £75, Surgery, (*j*) Filliter Exhibition, £30, Pathology, (*k*) Erichsen Prize, £10 10s, Practical Surgery, (*l*) two Senior and two Junior Fellowes Clinical Medals for Clinical Medicine, (*m*) two Liston Gold Medals for Clinical Surgery, (*n*) Alexander Bruce Gold Medal for Pathology and Surgery, and (*o*) Tuke Silver and Bronze Medals for Pathology (*p*) Radcliffe Crocker Travelling Scholarship for Dermatology (*q*) Leslie Pearce Gould Travelling Scholarship for Surgery

Residence of Students—University College Hall, Ealing, is recognised by the Medical School authorities as a residential hostel The Students' House in University-street contains large and comfortable rooms. The Maternity Students occupy them on payment of a moderate charge. Gentlemen who desire assistance in their studies should consult the Dean or Lecturers

---

WESTMINSTER HOSPITAL—The hospital contains 236 beds and affords relief to upwards of 3500 in-patients and 25,000 out-patients annually There are separate departments for Diseases of the Eye, Skin, Teeth, Ear, Nose, and Throat, for Orthopædic practice, for Diseases of Women, for Diseases of Children, for Radiography, for Venereal Diseases, and for Massage, Electrical and Light Treatment The Anatomical, Pathological, and Materia Medica Museums are open to all students of the school

The usual registrarships and house appointments are open to male and female students.

By a scheme for the concentration of the teaching of the preliminary and intermediate subjects of the curriculum, which has the support of the London University, an arrangement has been made by the Westminster School for the teaching of these subjects at King's College Students, however, may join the Westminster Medical School as formerly and may compete for Entrance Scholarships as heretofore

Scholarships and Prizes—The following Entrance Scholarships are offered for competition: Winter Session Two Scholarships in Anatomy and Physiology, £70 each Summer Session · Two Scholarships in Anatomy and Physiology, £70 each A certain number of Scholarships have been allotted to Universities of England, Wales, and the Colonies, and to Public Schools These Scholarships are awarded entirely on the nomination of the principal of the university or school. During the period of study the following prizes may be competed for · Sturges Prize in Clinical Medicine, about £6, Reports on Cases, Clinical Surgery Prize, £5, Reports on Cases, Chadwick Prize, £21 in books or instruments—Medicine and Surgery, including Pathology and Applied Anatomy and Physiology, Frederic Bird Medal and Prize, open to Fourth-year Students, £14 in medal and books or instruments—Midwifery, Diseases of Women, Medicine, Pathology, Forensic Medicine and Bacteriology, and Public Health and Toxicology; Abrahams Prize in Clinical Pathology, 5 guineas, a Paper and Tests in Practical Work; Alfred Hughes Memorial Prize, open to Second-year Students, about £5 in books or instruments—Anatomy; Huxley Memorial Prize, 3 guineas in books or cash, open to Second-year Students—Physiology; Carter Gold Medal and Prize for Botany, open to Students of not more than three years' attendance, gold medal and books of the joint value of £15, Jelf Medal awarded to Third-year Students, Second year Scholarship £20, Elementary Anatomy, Physiology, Histology, and Organic Chemistry, Daniell Scholarship, tenable for two years, £20, Chemistry, Rabbeth Scholarship, open to First-year Students, £20, Class Examinations in the Preliminary Scientific Course, and the Sambrooke King's College Scholarship in Science, value £25 Inquiries may be addressed to the Dean, Dr A S. Woodwark

---

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick square, W.C—The fee for the medical course for the degrees of the University of London and for the diplomas of the Royal Colleges of England and for other qualifications is £240 in five instalments This sum includes library and laboratory fees Arrangements are made for pre-medical courses in Chemistry and Physics, which are included in these fees

The Royal Free Hospital contains 240 beds The Hospital also has large Casualty and Out-patient Departments, and Departments for Special Diseases A new and specially equipped block contains the Obstetrical and Gynæcological Unit, which controls 68 beds A Children's Ward of 16 beds and a Light Department have recently been added to the Hospital Maternity Districts are attached to the Unit operating in the Gray's Inn-road and Essex road areas A new Maternity Hostel has been acquired at 434, Essex-road Students also attend the in-patient and out-patient practice of the Elizabeth Garrett Anderson Hospital, Cancer Hospital, Hospital for Sick Children, Great Ormond-street, National Hospital for Paralysed and Epileptic, South London Hospital, and Royal London Ophthalmic Hospital

Courses are arranged for the Primary Fellowship Examination of the College of Surgeons, also for dental students in conjunction with the Royal London Dental Hospital, Leicester-square.

Students after qualification can hold the posts of house physicians, house surgeons, obstetric assistants clinical assistants, assistant anæsthetist, medical, gynæcological, and surgical registrars, and assistant pathologist; and at the Medical School the posts of demonstrators in the departments of Anatomy, Physiology, Pharmacology, Biology, Chemistry, and Physics Many other resident posts in London and elsewhere are also open to them.

The School buildings have been entirely rebuilt in recent years, and there are spacious, well-equipped laboratories, which afford every facility for efficiency of teaching and practical work in all departments

There are residential chambers at 8, Hunter-street, 25, Gordon-square, 16, Brunswick-square, 5, Mecklenburgh-square, and 36, Tavistock-square, and the Warden can be consulted on the subject of other residences for students. The Students' Union arranges the social, athletic, and other clubs and societies The School sports ground, consisting of 6½ acres of freehold land, is situated at Sudbury (easily reached from Euston Station), and provides facilities for tennis, hockey, lacrosse, and cricket

Scholarships and Prizes—(*a*) Isabel Thorne Scholarship, £30 (*b*) St Dunstan's Medical Exhibition, £60 a year, tenable for three or five years (*c*) Mrs George M Smith Scholarship, £50 a year, tenable for three or five years, and next to be awarded in 1927. (*d*) Bostock Scholarship, tenable for two or four years, and next to be awarded in June, 1927, £90 (*e*) Mabel Sharman-Crawford Scholarship, tenable for four years, £20 a year (*f*) Sir Owen Roberts Scholarship, £75 a year for four years (*g*) Mabel Webb Research Scholarship, tenable for one year and renewable, £30, Physiology, Chemistry, or Pathology. (*h*) Fanny Butler Scholarship, tenable for four years, next award in July, 1930, £10 (*i*) John Byron

Fees—Matriculation, £2; First Examination, Part I, £2 10s.; First Examination, Part II, £2 10s; Second Examination, £2 10s; Third Examination, £2 10s, Final Examination, £10; M D. or Ch M, £12 10s

At the University of Birmingham the following Scholarships are awarded.—(*a*) Myers Travelling Studentship of £300, tenable for one year, offered in alternate years, awarded by vote of committee to M.B, Ch B candidates, tenable at some University or Hospital not in Great Britain or Ireland (available for year 1926–27); (*b*) two Ingleby Scholarships of £10 each awarded to the candidate at Final Examination obtaining highest "first-class" marks in the subjects of Midwifery and Diseases of Women; (*c*) Sydenham Scholarship of £42, tenable for three years, award of Council to orphan sons of medical practitioners; (*d*) Sands Cox Scholarship of £21 per annum during two years, awarded to the candidate, not being more than 19 years of age, taking the highest marks at the Higher School Certificate Examination of the Joint Matriculation Board; (*e*) Dental Scholarship of £37 10s, Open Competitive Examination in subjects learned during apprenticeship; (*f*), (*g*), (*h*), and (*i*) Four Queen's Scholarships of £10 10s. each. In the Second and Fourth Examinations the Scholarship is awarded respectively to the student taking the first place and obtaining "first-class" marks In the Third Examination the Scholarship is awarded to the student obtaining the highest "first-class" marks in Pathology and Bacteriology, provided that such student passes at the same examination in the subjects of Materia Medica and Practical Pharmacy. In the Final Examination the Scholarship is awarded to the candidate taking the first place in the examination—that is, obtaining the greatest aggregate number of marks—provided that in each of the subjects of Medicine, Surgery, and Midwifery he gains not less than 60 per cent of the total available marks; (*j*) George Henry Marshall Scholarship of £10, awarded annually, for the encouragement of Research Work in Ophthalmology; and (*k*) Russell Memorial Prize, a prize of books, value about £2, awarded annually to the student who, not being of more than six years' standing as a student of the School of Medicine of the University, shall pass the best examination in the subject of Nervous Diseases The "Arthur Foxwell Memorial Medal" (Gold Medal) is awarded annually to the candidate passing the Final M B, Ch.B. in June, who obtains the highest marks in Clinical Medicine, provided the marks so gained be not less than 60 per cent The University Clinical Board awards Gold and Silver Medals on examinations in Medicine, Surgery, and Midwifery, respectively, in fourth and fifth years (open to all students)

The Sampson Gamgee Memorial Medal for Surgery (Gold Medal) is awarded annually to candidate passing Final M.B, Ch B Examination in June for best Examination in Surgery provided that not less than 60 per cent of marks is obtained (paper, oral, and clinical)

Post-graduate Courses—A "William Withering Lectureship' has been established, and this takes the place of the Lectureship in Morbid Psychology in and after 1927 A course (or courses) of lectures will be given annually for post-graduates on subjects to be chosen from year to year In 1927 a course of lectures on Heredity will be given by Dr F. A. E Crew, of Edinburgh. The Ingleby Lectures on some subject in connexion with Diseases of Women and Children are given annually by specially appointed lecturers Post-graduate Courses of Clinical Demonstrations (for General Practitioners) at the Birmingham General Queen s, and Children's Hospitals are arranged annually (April to July).

Clinical Instruction—The medical students of the University receive their clinical instruction by attending the amalgamated practice of the General Hospital and the Queen's Hospital under the direction of the University Clinical Board Appointments are open to students varying from £40 to £200 a year.

BIRMINGHAM GENERAL HOSPITAL—370 beds are in daily use, 6500 in-patients per annum. Special wards for Children, Gynæcological Ear and Throat, Venereal, Maternity, and Septic cases; special beds for Eye and Skin cases About 50,000 out-patients per annum Laboratories for Bacteriology and Morbid Histology. Separate rooms adjoin the medical and surgical wards for clinical pathology. Five operating theatres (one for out-patients), all designed and fitted on modern lines. In addition to clinical teaching given in the wards and out-patient department by the honorary staff, medical and surgical tutorial classes are held for senior and junior students Clinical instruction in all the special departments, which include those for Radium. Electrotherapy, Electrocardiographic investigation, and Venereal Diseases Post-graduate classes in every branch of medicine and surgery. The Jaffray Branch Hospital contains 56 beds

QUEEN'S HOSPITAL (Beds 224)—Similar arrangements for clinical teaching are made here, and the material also is excellent. Ward and tutorial classes and post-graduate courses are regularly conducted by the staff, there are daily clinics in the out-patient department, while teaching duties are definitely assigned to the house physicians and house surgeons There are also special departments for gynæcology and ophthalmology. dentistry, radiography, pathology, bacteriology, biochemistry, massage, electricity, whirlpool baths, electrocardiograph, &c

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham—This hospital possesses 120 beds, and there is an average daily attendance of out-patients of over 250. Students attending for a period of three months will be granted certificates which will qualify for the University and Conjoint Board examinations Post-graduate courses are available on various subjects when a sufficient number of graduates are present. A limited number of Non-Resident Clinical Assistants posts are available to qualified practitioners, particulars of which can be had on application to the General Superintendent.

UNIVERSITY OF LIVERPOOL

The degrees in the Faculty of Medicine are Bachelor of Medicine and Bachelor of Surgery (M B. and Ch.B), Doctor of Medicine (M D), Doctor in Philosophy (Ph D.), Master of Surgery (Ch M), Master of Hygiene (M H), and Master of Orthopædic Surgery (M Ch Orth)

Degrees of Bachelor of Medicine and Bachelor of Surgery—Candidates for the degrees of Bachelor of Medicine and of Surgery must have attained the age of 22 years on the day of graduation. At least two of the five years of medical study must have been passed in the University, and one year at least must have been passed in the University subsequently to the date of passing the First Examination. The other three years may be passed at any college or medical school recognised for this purpose by the University. Candidates must pass three examinations entitled respectively: the First Examination, the Second Examination, and the Final Examination, The fee is £5 for each examination The subjects of the First Examination are: (1) Chemistry; (2) Physics; (3) Biology (Zoology and Botany) The subjects of the *Second Examination* are (*a*) (1) Anatomy; (2) Physiology (including Physiological Chemistry and Histology); and (*b*) (3) Elementary Bacteriology, (4) Clinical Chemistry, (5) General Pathology Candidates may present themselves in (*a*) or (*b*) separately The subjects for the Final Examination are: (*a*) (1) Special Pathology and Morbid Anatomy; (2) Forensic Medicine and Toxicology; (3) Public Health: (4) Pharmacology and General Therapeutics (*b*) (5) Obstetrics and Diseases of Women, (6) Surgery, Systematic, Clinical, Operative and Practical, including Ophthalmology;

Post-graduate Instruction —A comprehensive series of post-graduate courses has been arranged to enable practitioners to take advantage of the facilities for laboratory work and clinical study which are afforded by the College, the Royal Victoria Infirmary and other associated hospitals, and in order to meet the varied requirements of practitioners there are general and special courses in the winter and summer session as well as an intensive course in the summer vacation

The Bacteriological Laboratory —The Bacteriological Laboratory is adjacent to Armstrong College

Students' Union Buildings have been erected and furnished at a cost of over £40,000, and are now in daily use

Princess Mary Maternity Hospital — The new Maternity Hospital was opened by H R H Princess Mary Viscountess Lascelles in November, 1923 The hospital is thoroughly up to date, excellently equipped, contains 90 beds, and there is an annual indoor and outdoor attendance of 3000 cases

---

Newcastle-upon-Tyne Royal Victoria Infirmary —The Infirmary was founded in 1751, but has been entirely rebuilt, the new hospital being opened by His late Majesty King Edward VII in 1906 The number of beds is 572. The number of in-patients annually is 12,000 and out-patients' attendances 297,000. The medical students of the University of Durham attend the practice of this hospital Clinical Lectures are delivered by the Physicians and Surgeons weekly and ward demonstrations are given daily. Tutorial classes are held by the Assistant Physicians and Assistant Surgeons, and demonstrations are given in the several out-patient departments daily Pathological demonstrations are given by the Pathologist daily or as opportunity occurs, and in the new buildings nothing has been spared in perfecting scientific equipment In addition to medical and surgical in-patient and out-patient departments the following special departments are fully equipped for teaching students Ophthalmic, Throat, Nose, and Ear, Skin, Gynæcological, and Electrical The hospital building contains the following laboratories: 1 Special Pathological Laboratory, attached to the post-mortem rooms 2 Bacteriological Laboratory, in which all clinical bacteriological investigations are carried out—opsonic indices estimated with a view to treatment by vaccines and serums, &c 3 There is in addition a Clinical Laboratory attached to each ward and to the out-patient department There are five operating theatres in use in the hospital The winter session of 1926 opens on Oct 4th and the summer session of 1927 on April 12th

Applications for detailed information should be made to the Dean, Dr Horsley Drummond, at the hospital

There are other institutions in addition to the Royal Victoria Infirmary at which the student of medicine of the University of Durham can receive clinical instruction Practical Midwifery can be studied at the Princess Mary Maternity Hospital Instruction is given in Psychological Medicine at the City of Newcastle Mental Hospital A special course of instruction is given in the City Hospital for Infectious Diseases by the City Officer of Health Ophthalmology is taught at the Northumberland, Durham, and Newcastle Infirmary for Diseases of the Eye

Post-Graduate Instruction —For the year 1926–1927 the following post-graduate courses have been arranged:—1 General courses in Clinical Medicine, Surgery, and Pathology at the Royal Victoria Infirmary, meeting once weekly for ten weeks One course will be held from October to December and one from April to June 2 Special courses of clinical instruction, meeting once weekly for ten weeks, in the following subjects Gynæcology; Diseases of the Eye, Diseases of the Throat, Nose and Ear, Diseases of the Skin, Venereal Diseases, Neurology; Diseases of Children, Special courses in Midwifery will be held at the Princess Mary Maternity Hospital 3 An intensive course of 14 days' duration in the early part of the Summer Vacation, 1927 4 In addition to the regular post-graduate courses practitioners may attend the ordinary medical and surgical practice of the Royal Victoria Infirmary for specified periods

---

UNIVERSITY OF BIRMINGHAM

The University of Birmingham grants the degrees of M B, Ch B, M D, Ch M, and Ph D (for Research Study), and also a degree and a diploma in Public Health The course for the Bachelors' degrees extends over five years from the date of commencement of professional study As a rule the first four of these years must be spent in the University, but the Senate has power of recognising attendance at another University as part of the attendance qualifying for these degrees and of recognising examinations passed at such other Universities as exempting from the examinations in Biology and Organic Chemistry In the case of such students at least three years must be spent in attendance upon classes at the University The fifth year may be spent at any other medical school recognised by the University

Degrees of Bachelor of Medicine and Bachelor of Surgery —The student must have passed the Matriculation Examination of the Joint Board or an examination accepted in lieu thereof, and a recognised Pre Medical Examination in Chemistry and Physics All communications respecting the Matriculation Examination, and examinations accepted in lieu thereof, must be sent to the Secretary, Joint Matriculation Board, 315, Oxford-road, Manchester First Examination —Part I, Elementary Biology and Organic Chemistry, Part II, Anatomy and Physiology Second Examination —General Pathology and Bacteriology, Materia Medica, and Pharmacy Third Examinations (at the end of the fourth year)—Forensic Medicine, Toxicology, Public Health, and Therapeutics Two years' hospital work must have been accomplished Final Examination —Medicine Surgery, Midwifery, Diseases of Women, Mental Diseases, and Ophthalmology Attendance at a general hospital for a year after the passing of the fourth examination will be required, also attendance at a fever hospital three months, maternity hospital three months, and mental hospital three months and Vaccination instruction must be taken out and courses of Ophthalmology, Venereal and Skin Diseases, and Diseases of Ear, Nose, and Throat, Medical and Surgical Anatomy, and Operative Surgery

Degrees of Doctor of Medicine and Master of Surgery At the end of one year from the date of having passed the final M B, Ch B examination the candidate will be eligible to present himself for the higher degrees of either Doctor of Medicine or Master of Surgery or both Candidates have to present a thesis on some subject embraced in the medical curriculum, and pass a general examination in Principles and Practice of Medicine for the M D, and one in Principles and Practice of Surgery, including operations on the cadaver, for the Ch M A thesis of exceptional merit may exempt from any part of these examinations

Degree of Ph D —The Degree of Doctor of Philosophy is conferred upon candidates who possess a medical degree of a British, Colonial, or other university approved of by the Senate of the University, and who have been engaged, to the satisfaction of the Medical Faculty, in advanced study and research for a period of not less than two years, either in a laboratory of the University or in one or more of the hospitals associated with the University After the first year of the course candidates may carry on research elsewhere, under approved conditions, and on completing the course present an original thesis on the subject and to submit themselves for oral and possibly written examination

Fees—Matriculation, £2; First Examination, Part I, £2 10s.; First Examination, Part II, £2 10s; Second Examination, £2 10s; Third Examination, £2 10s, Final Examination, £10; M D or Ch M, £12 10s

At the University of Birmingham the following Scholarships are awarded.—(*a*) Myers Travelling Studentship of £300, tenable for one year, offered in alternate years, awarded by vote of committee to M.B, Ch B candidates, tenable at some University or Hospital not in Great Britain or Ireland (available for year 1926–27); (*b*) two Ingleby Scholarships of £10 each awarded to the candidate at Final Examination obtaining highest "first-class" marks in the subjects of Midwifery and Diseases of Women; (*c*) Sydenham Scholarship of £42, tenable for three years, award of Council to orphan sons of medical practitioners, (*d*) Sands Cox Scholarship of £21 per annum during two years, awarded to the candidate, not being more than 19 years of age, taking the highest marks at the Higher School Certificate Examination of the Joint Matriculation Board, (*e*) Dental Scholarship of £37 10s, Open Competitive Examination in subjects learned during apprenticeship; (*f*), (*g*), (*h*), and (*i*) Four Queen's Scholarships of £10 10s. each In the Second and Fourth Examinations the Scholarship is awarded respectively to the student taking the first place and obtaining "first-class" marks In the Third Examination the Scholarship is awarded to the student obtaining the highest "first-class" marks in Pathology and Bacteriology, provided that such student passes at the same examination in the subjects of Materia Medica and Practical Pharmacy In the Final Examination the Scholarship is awarded to the candidate taking the first place in the examination—that is, obtaining the greatest aggregate number of marks—provided that in each of the subjects of Medicine, Surgery, and Midwifery he gains not less than 60 per cent of the total available marks; (*j*) George Henry Marshall Scholarship of £10, awarded annually, for the encouragement of Research Work in Ophthalmology; and (*k*) Russell Memorial Prize, a prize of books, value about £2, awarded annually to the student who, not being of more than six years' standing as a student of the School of Medicine of the University, shall pass the best examination in the subject of Nervous Diseases The "Arthur Foxwell Memorial Medal" (Gold Medal) is awarded annually to the candidate passing the Final M.B, Ch.B. in June, who obtains the highest marks in Clinical Medicine, provided the marks so gained be not less than 60 per cent The University Clinical Board awards Gold and Silver Medals on examinations in Medicine, Surgery, and Midwifery, respectively, in fourth and fifth years (open to all students)

The Sampson Gamgee Memorial Medal for Surgery (Gold Medal) is awarded annually to candidate passing Final M.B, Ch B Examination in June for best Examination in Surgery provided that not less than 60 per cent of marks is obtained (paper, oral, and clinical)

Post-graduate Courses—A "William Withering Lectureship" has been established, and this takes the place of the Lectureship in Morbid Psychology in and after 1927. A course (or courses) of lectures will be given annually for post-graduates on subjects to be chosen from year to year In 1927 a course of lectures on Heredity will be given by Dr F A E Crew, of Edinburgh The Ingleby Lectures on some subject in connexion with Diseases of Women and Children are given annually by specially appointed lecturers Post-graduate Courses of Clinical Demonstrations (for General Practitioners) at the Birmingham General Queen's and Children's Hospitals are arranged annually (April to July)

Clinical Instruction—The medical students of the University receive their clinical instruction by attending the amalgamated practice of the General Hospital and the Queen's Hospital under the direction of the University Clinical Board Appointments are open to students varying from £40 to £200 a year

BIRMINGHAM GENERAL HOSPITAL—370 beds are in daily use 6500 in-patients per annum Special wards for Children, Gynæcological, Ear and Throat, Venereal, Maternity, and Septic cases. special beds for Eye and Skin cases About 50,000 out-patients per annum Laboratories for Bacteriology and Morbid Histology. Separate rooms adjoin the medical and surgical wards for clinical pathology. Five operating theatres (one for out-patients), all designed and fitted on modern lines. In addition to clinical teaching given in the wards and out-patient department by the honorary staff, medical and surgical tutorial classes are held for senior and junior students. Clinical instruction in all the special departments, which include those for Radium, Electrotherapy, Electrocardiographic investigation and Venereal Diseases Post-graduate classes in every branch of medicine and surgery The Jaffray Branch Hospital contains 56 beds

QUEEN'S HOSPITAL (Beds 224)—Similar arrangements for clinical teaching are made here, and the material also is excellent Ward and tutorial classes and post-graduate courses are regularly conducted by the staff, there are daily clinics in the out-patient department, while teaching duties are definitely assigned to the house physicians and house surgeons There are also special departments for gynæcology and ophthalmology, dentistry, radiography, pathology, bacteriology, biochemistry, massage, electricity, whirlpool baths, electrocardiograph, &c

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham—This hospital possesses 120 beds, and there is an average daily attendance of out-patients of over 250. Students attending for a period of three months will be granted certificates which will qualify for the University and Conjoint Board examinations Post-graduate courses are available on various subjects when a sufficient number of graduates are present A limited number of Non-Resident Clinical Assistants posts are available to qualified practitioners, particulars of which can be had on application to the General Superintendent.

UNIVERSITY OF LIVERPOOL.

The degrees in the Faculty of Medicine are Bachelor of Medicine and Bachelor of Surgery (M.B and Ch.B), Doctor of Medicine (M.D), Doctor in Philosophy (Ph D.), Master of Surgery (Ch M), Master of Hygiene (M H), and Master of Orthopædic Surgery (M Ch Orth).

Degrees of Bachelor of Medicine and Bachelor of Surgery—Candidates for the degrees of Bachelor of Medicine and of Surgery must have attained the age of 22 years on the day of graduation At least two of the five years of medical study must have been passed in the University, and one year at least must have been passed in the University subsequently to the date of passing the First Examination The other three years may be passed at any college or medical school recognised for this purpose by the University. Candidates must pass three examinations entitled respectively: the First Examination, the Second Examination, and the Final Examination, The fee is £5 for each examination. The subjects of the First Examination are: (1) Chemistry, (2) Physics; (3) Biology (Zoology and Botany) The subjects of the Second Examination are (*a*) (1) Anatomy, (2) Physiology (including Physiological Chemistry and Histology); and (*b*) (3) Elementary Bacteriology, (4) Clinical Chemistry, (5) General Pathology. Candidates may present themselves in (*a*) or (*b*) separately. The subjects for the Final Examination are: (*a*) (1) Special Pathology and Morbid Anatomy, (2) Forensic Medicine and Toxicology, (3) Public Health. (4) Pharmacology and General Therapeutics; (*b*) (5) Obstetrics and Diseases of Women, (6) Surgery, Systematic, Clinical, Operative and Practical, including Ophthalmology;

Post-graduate Instruction—A comprehensive series of post-graduate courses has been arranged to enable practitioners to take advantage of the facilities for laboratory work and clinical study which are afforded by the College, the Royal Victoria Infirmary and other associated hospitals, and in order to meet the varied requirements of practitioners there are general and special courses in the winter and summer session as well as an intensive course in the summer vacation

The Bacteriological Laboratory—The Bacteriological Laboratory is adjacent to Armstrong College

Students' Union Buildings have been erected and furnished at a cost of over £40,000, and are now in daily use

Princess Mary Maternity Hospital — The new Maternity Hospital was opened by H R H Princess Mary Viscountess Lascelles in November, 1923 The hospital is thoroughly up to date, excellently equipped, contains 90 beds, and there is an annual indoor and outdoor attendance of 3000 cases

NEWCASTLE-UPON-TYNE ROYAL VICTORIA INFIRMARY.—The Infirmary was founded in 1751, but has been entirely rebuilt, the new hospital being opened by His late Majesty King Edward VII in 1906 The number of beds is 572 The number of in-patients annually is 12,000 and out-patients' attendances 297,000 The medical students of the University of Durham attend the practice of this hospital Clinical Lectures are delivered by the Physicians and Surgeons weekly and ward demonstrations are given daily. Tutorial classes are held by the Assistant Physicians and Assistant Surgeons, and demonstrations are given in the several out-patient departments daily. Pathological demonstrations are given by the Pathologist daily or as opportunity occurs, and in the new buildings nothing has been spared in perfecting scientific equipment In addition to medical and surgical in-patient and out-patient departments the following special departments are fully equipped for teaching students Ophthalmic, Throat, Nose, and Ear, Skin, Gynæcological, and Electrical The hospital building contains the following laboratories. 1 Special Pathological Laboratory, attached to the post-mortem rooms 2 Bacteriological Laboratory, in which all clinical bacteriological investigations are carried out—opsonic indices estimated with a view to treatment by vaccines and serums, &c 3 There is in addition a Clinical Laboratory attached to each ward and to the out-patient department There are five operating theatres in use in the hospital The winter session of 1926 opens on Oct 4th and the summer session of 1927 on April 12th

Applications for detailed information should be made to the Dean, Dr Horsley Drummond, at the hospital.

There are other institutions in addition to the Royal Victoria Infirmary at which the student of medicine of the University of Durham can receive clinical instruction Practical Midwifery can be studied at the Princess Mary Maternity Hospital Instruction is given in Psychological Medicine at the City of Newcastle Mental Hospital A special course of instruction is given in the City Hospital for Infectious Diseases by the City Officer of Health Ophthalmology is taught at the Northumberland, Durham, and Newcastle Infirmary for Diseases of the Eye

Post-Graduate Instruction—For the year 1926–1927 the following post-graduate courses have been arranged.—1 General courses in Clinical Medicine, Surgery, and Pathology at the Royal Victoria Infirmary, meeting once weekly for ten weeks One course will be held from October to December and one from April to June 2 Special courses of clinical instruction, meeting once weekly for ten weeks, in the following subjects · Gynæcology, Diseases of the Eye, Diseases of the Throat, Nose and Ear, Diseases of the Skin, Venereal Diseases, Neurology, Diseases of Children, Special courses in Midwifery will be held at the Princess Mary Maternity Hospital 3 An intensive course of 14 days' duration in the early part of the Summer Vacation, 1927 4 In addition to the regular post-graduate courses practitioners may attend the ordinary medical and surgical practice of the Royal Victoria Infirmary for specified periods

UNIVERSITY OF BIRMINGHAM

The University of Birmingham grants the degrees of M B, Ch B, M D, Ch M, and Ph D (for Research Study), and also a degree and a diploma in Public Health The course for the Bachelors' degrees extends over five years from the date of commencement of professional study As a rule the first four of these years must be spent in the University, but the Senate has power of recognising attendance at another University as part of the attendance qualifying for these degrees and of recognising examinations passed at such other Universities as exempting from the examinations in Biology and Organic Chemistry In the case of such students at least three years must be spent in attendance upon classes at the University The fifth year may be spent at any other medical school recognised by the University

Degrees of Bachelor of Medicine and Bachelor of Surgery—The student must have passed the Matriculation Examination of the Joint Board or an examination accepted in lieu thereof, and a recognised Pre-Medical Examination in Chemistry and Physics All communications respecting the Matriculation Examination, and examinations accepted in lieu thereof, must be sent to the Secretary, Joint Matriculation Board, 315, Oxford-road, Manchester First Examination—Part I., Elementary Biology and Organic Chemistry, Part II, Anatomy and Physiology Second Examination—General Pathology and Bacteriology, Materia Medica, and Pharmacy Third Examinations (at the end of the fourth year)—Forensic Medicine, Toxicology, Public Health, and Therapeutics Two years' hospital work must have been accomplished Final Examination—Medicine, Surgery, Midwifery, Diseases of Women, Mental Diseases, and Ophthalmology Attendance at a general hospital for a year after the passing of the fourth examination will be required, also attendance at a fever hospital three months, maternity hospital three months, and mental hospital three months Vaccination instruction must be taken out and courses of Ophthalmology, Venereal and Skin Diseases, and Diseases of Ear, Nose, and Throat Medical and Surgical Anatomy, and Operative Surgery

Degrees of Doctor of Medicine and Master of Surgery At the end of one year from the date of having passed the final M B, Ch B examination the candidate will be eligible to present himself for the higher degrees of either Doctor of Medicine or Master of Surgery or both Candidates have to present a thesis on some subject embraced in the medical curriculum, and pass a general examination in Principles and Practice of Medicine for the M D, and one in Principles and Practice of Surgery, including operations on the cadaver, for the Ch M A thesis of exceptional merit may exempt from any part of these examinations

Degree of Ph D—The Degree of Doctor of Philosophy is conferred upon candidates who possess a medical degree of a British, *Colonial, or* other university approved of by the Senate of the University, and who have been engaged, to the satisfaction of the Medical Faculty, in advanced study and research for a period of not less than two years, either in a laboratory of the University or in one or more of the hospitals associated with the University After the first year of the course candidates may carry on research elsewhere, under approved conditions, and on completing the course present an original thesis on the subject and to submit themselves for oral and possibly written examination an examination. The dissertation must embody the results of personal observation or original research, either in some department of medicine or of some science directly relative to medicine. The examination, which will be written and practical, is in the Principles and Practice of Medicine, in Pathology, and in some other subject to be selected by the candidate

Degree of Master of Surgery.—Candidates are not eligible for the degree of Master of Surgery unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. The degree is conferred in the following branches: Surgery (Branch I.), Gynæcology (Branch II.), Ophthalmology (Branch III.), Laryngology, Otology, and Rhinology (Branch IV.)

Degrees of B.Sc. and M.Sc.—The ordinary degree of B.Sc. in the Schools of Anatomy and Physiology may be obtained by students in Medicine who in their third year of study for the degree of M.B., Ch.B. complete the additional courses in these subjects prescribed for this degree. Candidates for the Honours degree of B.Sc. in Anatomy or Physiology who are students in Medicine are required to attend courses in advanced Anatomy and Physiology for four terms after passing the Second Examination for the degrees of M.B., Ch.B. Graduates in science may proceed to the degree of M.Sc. by presentation of an approved thesis.

Scholarships, Fellowships, and Prizes.—The following are offered in connexion with medical study at the Victoria University:—Scholarships: Dreschfeld Entrance (triennial), £20; John Russell Medical Entrance, £45; Sam Gamble Entrance for Women: Graduate Entrance (fees up to 160 guineas): two Dauntesey Medical Junior, £50 each; Dauntesey Medical Senior £50; Professor Tom Jones Exhibition in Anatomy, £25; Dickenson Trust Scholarships in Anatomy and Pathology: Platt Physiological, £90; Graduate Research Scholarship, £70; Dickenson Trust Travelling Scholarships in Medicine and Surgery; Ashby Memorial in Diseases of Children (triennial), £100. Fellowships: Leech Research £70; Professor Tom Jones Surgical, £105; Morrison Watson in Anatomy, £150; Delepine in Preventive Medicine (biennial), £300; Honorary Research Fellowships. Prizes: Sidney Renshaw in Physiology £15; Turner Medical £20; John Henry Agnew in Diseases of Children, £30; Dumville Surgical £15; Knight Prize in Psychological Medicine, £50; Graduate Prizes £5 each. There are many general entrance scholarships, in addition to those already mentioned, open for competition, the examinations for which are held in the month of May. Full particulars can be obtained from the Registrar.

The Medical School.—This school, largely extended in 1920, is provided with dissecting-rooms, X ray rooms, physiological laboratories, private laboratories, and work-rooms besides lecture-rooms, museums, and general and departmental libraries. A special laboratory is equipped for experimental work on the central nervous system. In the pathological laboratories ample provision is made for the teaching of pathology and bacteriology and for the prosecution of original research. The Helen Swindells Laboratory is specially equipped for cancer research and investigation in general pathology. Ample facilities for investigation are provided in Anatomy, Physiology, and Materia Medica. In the public health department, which is lodged in a separate institute in York Place near the Royal Infirmary, suitable laboratory accommodation is provided for the study of sanitary chemistry, physics, and practical bacteriology in the departments of chemistry and physics and in that of pathology.

Clinical Studies.—The clinical and practical departments of medical study are taught partly in the Medical School and partly in the Royal Infirmary and St. Mary's Hospitals for Women and Children, a fever hospital, a lunatic asylum, and a convalescent home, and other special hospitals. Medical and Surgical Clinical Classes are conducted in the Infirmary, and separate instruction is afforded in the elements of Medical and Surgical Physical Diagnosis, in Obstetric Medicine, Ophthalmic Surgery, and Pathological Anatomy by the different members of the staff of the Medical School and Infirmary.

Clinical Instruction.—MANCHESTER ROYAL INFIRMARY.—The Royal Infirmary is built on the pavilion system, near the University, and has accommodation for 668 patients (including 54 beds at the Central Branch). The medical side consists of five units, each unit having a testing-room for the scientific investigation of morbid products and a class-room. The surgical beds are also arranged in five units, each unit having its own operation theatre, with anæsthetising, recovery, sterilising, testing and apparatus rooms, and its own class-room attached. All of these units are occupied. In the educational block is a large lecture theatre and a museum. In the same building is housed the X ray department, which has nine separate X ray outfits for different purposes, and in which one large room is put aside specially for X ray demonstrations and teaching purposes. A large massage school is also connected with this department.

The number of patients treated during the year 1925 was 11,047 in-patients and 45,062 out-patients; of the latter figure 10,810 were treated in the accident room of the Infirmary. Over 9000 operations are performed annually in the operation theatres.

Associated with the Infirmary are: (1) the Convalescent Hospital at Cheadle, containing 132 beds; (2) the Royal Lunatic Hospital at Cheadle accommodating with its branches 430 patients; and (3) the Central Branch in the City, which has now accommodation for 54 patients. The Associated Hospitals thus contain 1230 beds and are under the same management. Women students are admitted on the same terms as men.

Fees.—Medical Practice: Three months, 7½ guineas; six months, 12 guineas; twelve months, 18 guineas; full period required by the Examining Bodies, 60 guineas.

Two Entrance Scholarships in Medicine of the value of £160 each are offered annually by the Council of the Manchester University and the Medical Board of the Manchester Royal Infirmary for proficiency in Arts and Science subjects respectively. Other scholarships and prizes are mentioned in the College syllabus. Numerous annual appointments and junior appointments may be held by those who have attended the practice of the Infirmary.

Post-Graduate Courses.—Post-graduate Lectures open to all medical men and women are given by members of the staff and others from the last week in September until Christmas, and from the beginning of March until Whit-week. These take place at 4.15 P.M. on Tuesdays and Fridays and are free. Information can be obtained from the Secretary of the Post-Graduate Committee, Royal Infirmary, Manchester.

The Dean of Clinical Instruction is Dr. T. H. Oliver.

ROYAL MANCHESTER CHILDREN'S HOSPITAL, Pendlebury, Gartside-street, Manchester, and Lytham St. Anne's.—The hospital contains 190 beds and 30 in the Convalescent Home, Lytham St. Anne's. The medical staff visit the hospital daily at 10 A.M. Clinical instruction is given by the medical staff at the Hospital and Dispensary. There is a new Massage and Electro-therapeutic Department. Four Clinical Assistants are appointed for periods of six months. In throwing open these appointments to qualified medical men and women, the Board is actuated by the desire to aid those qualified medical men and women who wish to have opportunities for the further study of disease in children, or who wish to fit themselves for posts as Medical Officers to Children's Hospitals, to Child Welfare Centres, or for School Medical Officer appointments. There is an Orthopædic Department. Out-patients day is on Tuesday at Gartside-street.

(7) Medicine, Systematic and Clinical, including Therapeutics, Mental Diseases, and Diseases of Children Candidates may present themselves in Parts (*a*) and (*b*) separately, but candidates must have completed the fifth year of medical study before taking Part (*b*)

Degrees of Doctor of Medicine and Master of Surgery No candidate will be admitted to the degree of Doctor of Medicine or Master of Surgery unless he has previously received the Degrees of Bachelor of Medicine and Bachelor of Surgery, and at least two years have elapsed since he passed the examinations for those degrees, or, in the case of the degree of Doctor, unless, having obtained substantially equivalent degrees in an approved University, he has subsequently spent two years in the University or in the Clinical School in the performance of research or the conduct of systematic clinical observations Candidates for the degree of Doctor of Medicine are required to present a thesis together with, if desired, published original work relative to medical science An examination is required if the work submitted is not of special merit If the work submitted is of special merit, but extremely specialised, a candidate may be asked to submit a reasoned report on a subject set by the examiners

The University also awards a Diploma in Medical Radiology and Electrology—Part I, Physics, Part II, Radiology and Electrology The parts may be taken at one examination or separately

At this University the following Scholarships and Fellowships and Prizes are awarded —(*a*) Robert Gee Entrance Scholarship (Men) annually of £40, tenable for four years; (*b*) Lyon Jones Scholarship, No 1, of £21 per annum, tenable for two years, Competitive Examination among Junior Students in First M B Subjects, (*c*) Lyon Jones Scholarship, No 2 of £21, Compétitive Examination on results of Professional Examination in Anatomy, Physiology Elementary Bacteriology, Clinical Chemistry, and General Pathology, (*d*) Derby Exhibition of £15, Competitive Examination among Fourth- or Fifth-year Students in Clinical Subjects and (*e*) Clinical School Exhibition of £15 annually for Fourth- or Fifth-year students, (*f*) University Scholarship of £50 for one year, awarded on results of the Final (Part A) Examination for the degrees, (*g*) Holt Fellowships Physiology and Pathology, of £150 each for one year, (*h*) Gee Fellowship, Anatomy of £100, for one year, (*i*) John Rankin Fellowships in Anatomy two, each of the value of £120, tenable for two years, (*j*) Johnston Colonial Fellowship Bio-Chemistry, of £100 for one year (*k*) John W Garrett International Fellowship, Bacteriology of £100, for one year, (*l*) Thelwall Thomas Fellowship Surgical Pathology, of £150 for one year, (*m*) Ethel Boyce Fellowship in Gynæcological Pathology of £100 for one year (*n*) Mary Birrell Davies Memorial Fund Scholarship of the value of £60, tenable for four years offered for competition in alternate years open only to women students who will have attained the age of 19 on the first day of October next following the award, (*o*) Rankin Exhibition in Practical Anatomy, of £25 for one year, (*p*) Lady Jones Research Fellowship in Orthopædic Surgery £200 (*q*) Samuels Memorial Scholarships, three at £20, numerous prizes and medals

Medical School Buildings—Medical research has also been endowed with several new laboratories in which students can pursue research work after graduation All the laboratories and class-rooms are situated close together, communicating with one another and are made up of four large blocks of buildings which form one side of the College quadrangle There are the Johnston Laboratories for Experimental Medicine and Biochemistry; the Medical School for Anatomy Surgery, Toxicology, and Ophthalmology and the Thompson-Yates Laboratories for Physiology and Pathology A new building for Tropical Medicine has been opened

Clinical Instruction—The Clinical School of the University consists of four general hospitals—the ROYAL INFIRMARY, the DAVID LEWIS NORTHERN HOSPITAL, the ROYAL SOUTHERN HOSPITAL and the STANLEY HOSPITAL and of six special hospitals—the Eye and Ear Infirmary, the Hospital for Women (with the Samaritan Hospital), Liverpool Maternity Hospital the Royal Liverpool Children's Hospital, St Paul's Eye Hospital, and St George's Hospital for Skin Diseases These hospitals contain in all a total of about 1445 beds The organisation of these hospitals to form one teaching institution provides the medical student and the medical practitioner with a field for clinical education and study which is unrivalled in extent in the United Kingdom All the hospitals are within easy access of the University There are a large number of appointments to house physicianships and surgeonships both at the general and special hospitals which are open to qualified students of the school

Public Health Department—This is located in a separate building, in which full courses of instruction are given to students for the Diplomas and Degrees of the University and of other Examining Boards

Prospectuses and further information may be had on application to the Dean of the Faculty of Medicine, University of Liverpool

---

VICTORIA UNIVERSITY OF MANCHESTER

Four degrees in Medicine and Surgery are conferred by the University—viz, Bachelor of Medicine and Bachelor of Surgery (M B and Ch B), Doctor of Medicine (M D), and Master of Surgery (Ch M) A Diploma in Psychological Medicine, a Diploma in Public Health, and a Diploma in Bacteriology are awarded by examination to registered medical practitioners

Degrees of Bachelor of Medicine and Bachelor of Surgery—Before admission to the degree of M B or Ch B candidates are required to present certificates that they will have attained the age of 21 years on the day of graduation and that they have pursued the courses of study required by the University Regulations during a period of not less than five and a half years subsequently to the date of their registration by the General Medical Council, two of such years having been passed in the University subsequently to the date of passing the first M B Examination

The First Examination—(1) Chemistry and Physics, (2) Biology Candidates must have attended during at least one year courses both of lectures and of laboratory work in each of the above-named subjects The Examination is divided into two parts Part 1, Inorganic and Elementary Organic Chemistry and Physics Part 2, Biology The candidates sit for these parts separately

The Second Examination—(1) Anatomy and Histology, (2) Physiology, including Physiological Chemistry

The Third Examination—(1) Pharmacology and Therapeutics, (2) Pathology

The Final Examination—(1) Medicine, Systematic and Clinical (including Mental Diseases and Diseases of Children) (2) Surgery, Systematic, Clinical, and Practical, (3) Obstetrics and Gynæcology (including Clinical and Practical), (4) Forensic Medicine (including an Oral Examination), (5) Hygiene and Preventive Medicine The Final Examination is divided into two parts Candidates for the Second Part must complete the sixth year of medical study

Degree of Doctor of Medicine—Candidates are not eligible for the degree of Doctor of Medicine unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees Candidates may elect either (1) to present an original dissertation, or (2) to undergo

Scholarships, &c—At this University, in addition to six Edgar Allen scholarships of £125 a year for three years, holders of which can take the courses in the Faculty of Medicine, there are 11 scholarships tenable in the Faculty of Medicine Full particulars as to curriculum, scholarships &c may be had on application to the Registrar or to the Dean of the Medical Faculty.

The Medical School—The new buildings of the University opened in 1905 are situated at the west end of the city, adjoining Weston Park, and the Medical Department occupies the entire north wing of the University quadrangle The various athletic and other students' societies are under the management of the Union Representative Council, elected annually There are large and comfortable common rooms both for men and women students, and two Students' Unions, one for men and one for women A refectory is open daily at the University where students may obtain refreshments, lunch, dinner, &c, at extremely moderate prices The University journal, *Floreamus*, edited by a committee of staff and students, is published each term The University Halls "Oakholme," Clarkehouse-road, "Tapton Cliffe," Fulwood-road and "Endcliffe House," Endcliffe Vale-road, are recognised by the Senate as halls of residence for women students, full particulars may be obtained from the tutor for women students Stephenson Hall is a hall of residence for men students, particulars may be obtained from the Warden

Clinical Instruction—The University is within easy reach of the various hospitals with which it is connected for clinical purposes These are as follows: The ROYAL INFIRMARY (Secretary, Mr. J. W. Barnes), containing 502 beds, with an annual average number of over 5400 in-patients, over 23,000 out-patients, and over 22,000 casualties, the Royal Hospital (Sec, Mr W H Booth), with 316 beds, and an annual number of 4000 in-patients, over 84,000 out-patients and over 21,000 casualties, and the Jessop Hospital for Diseases of Women, with 93 beds, over 1000 in-patients, and over 2700 out-patients, also a Maternity department, with about 900 in-patients per annum and about 250 out-patient cases attended. Special courses on Fevers are held at the City Fever Hospitals (690 beds) and on Mental Diseases at the South Yorkshire Mental Hospital (1740 beds) For purposes of clinical practice the practices of the Royal Infirmary and Royal Hospital are amalgamated, giving a total of 818 beds for the treatment of medical, surgical, and special cases There are special departments for the treatment of Diseases of the Eye at each institution, with wards assigned to them In addition to these the Royal Infirmary has special departments for the treatment of Diseases of the Skin and Ear, with beds assigned to them, whilst at the Royal Hospital there are special out-patient departments for Diseases of the Throat, Ear, Skin, Orthopædics, and Mental Diseases Instruction is also given at the South Yorkshire Mental Hospital (1740 beds) Every facility is afforded in the various laboratories for the prosecution of advanced studies and research

Fees—The Medical Composition Fee is £38 a year for each of the five years

UNIVERSITY OF BRISTOL.

In the Faculty of Medicine there are the following degrees—Bachelor of Medicine and Bachelor of Surgery (M B and Ch B), Doctor of Medicine (M D), Master of Surgery (Ch M), Bachelor of Dental Surgery (B D S), and Master of Dental Surgery (M D S) There are also the following diplomas: Diploma in Public Health (D P H), Diploma in Dental Surgery (L D S) and Diploma in Veterinary State Medicine

All candidates for degrees in Medicine, Surgery, and Dentistry are required to pass an examination called the School Certificate Examination, or to pass such examination as may be regarded as equivalent by the Senate All courses, degrees, and diplomas are open to men and women alike

Conjoined Degrees of Bachelor of Medicine and Bachelor of Surgery—Candidates shall be not less than 21 years of age and shall have pursued the courses prescribed by University Regulations during not less than five years after passing the first examination in Chemistry and Physics, of which three shall have been passed in the University, and two of these three subsequent to passing the second examination All candidates for the degrees of M.B, Ch B, are required to satisfy the examiners in the several subjects of three examinations

The First Examination—The subjects of examination are. Chemistry (Inorganic), Physics, and Biology, the courses pursued being those for the time being approved for the intermediate part of the B Sc curriculum This part of the curriculum shall extend over one year. (Candidates who have passed the Higher School Certificate approved by the Board of Education in these subjects will not be required to sit for the first examination and will be regarded as having completed one year of study.)

The Second Examination.—The subjects of examination are: Organic Chemistry and Elementary Anatomy (Part I) and Advanced Anatomy and Physiology (Part II) Parts I and II may be passed separately or together.

The Final Examination.—The subjects of examination are: Materia Medica and Pharmacy, Pharmacology and Therapeutics, General Pathology, Morbid Anatomy, and Bacteriology (Part I.); Special Pathology, Forensic Medicine, Toxicology, and Public Health, Obstetrics (including Diseases of Women), Surgery (Systematic, Clinical, Practical, and Operative), Medicine (Systematic, Clinical, and Practical, including Mental Diseases) (Part II) The subjects included in Part II may be taken in two groups—viz, Group I, Surgery and Obstetrics, Group II, Medicine, Public Health, Special Pathology, Forensic Medicine, and Toxicology Candidates may pass Parts I and II together, or separately, and the two groups of Part II may be taken together or separately Forensic Medicine and Toxicology may be taken with Part I, or with Group II of Part II

Degree of Doctor of Medicine—Candidates shall be Bachelors of the University of not less than two years' standing as such and may elect either (1) to pass an examination in General Medicine, or (2) to pass an examination in State Medicine, or (3) to present a Dissertation The candidate who elects to pass the examination in State Medicine must hold a diploma in Public Health of some University or College, and the candidate who elects to present a Dissertation may be examined in the subject thereof

Degree of Master of Surgery—Candidates shall be Bachelors of not less than two years as such, during which period they shall have attended the Surgical Practice of an institution approved for the purpose They shall pass an examination in Surgical Anatomy, Pathology, and Bacteriology, and Operative, Clinical, and General Surgery, and present to the University a Dissertation on some subject of Surgery. The degree may be taken also in General Surgery, and a Special Subject—e g, Oto-Rhino-Laryngology, Ophthalmology, and Gynæcology.

Clinical Instruction—The allied hospitals (BRISTOL ROYAL INFIRMARY and BRISTOL GENERAL HOSPITAL) have between them about 600 beds and extensive out-patient departments, special clinics for Diseases of Women and Children and those of the Eye, Throat and Ear, in addition to large and well-equipped departments for Dental work and large outdoor Maternity Departments

At each of these institutions there are well-arranged pathological museums, post-mortem rooms, and laboratories for Morbid Anatomy There are also laboratories for work in Clinical Pathology, Bacteriology, and Cytology, in which special instruction is given in these subjects Departments are provided and well equipped for X ray work, both for diagnosis and a ward at Pendlebury is devoted to cases needing operative treatment Out-patients are seen daily at 6 A M at the Out-patient Department, Gartside-street, Manchester Secretary Mr W M Humphry

Manchester Northern Hospital for Women and Children, Park-place, Cheetham Hill-road, Manchester —The hospital contains 72 beds. Out-patients are seen daily from 8 30 to 12 A M

UNIVERSITY OF LEEDS

Four degrees in Medicine and Surgery are conferred—viz . Bachelor of Medicine and Bachelor of Surgery (M B and Ch B), Doctor of Medicine (M D), Master of Surgery (Ch M), also Degrees and Diplomas in Dental Surgery and Diplomas in Public Health and in Psychological Medicine

Degrees of Bachelor of Medicine and Bachelor of Surgery —Candidates for these degrees are required to present certificates showing that they will have attained the age of 21 years on the day of graduation, and have attended courses approved by the University extending over not less than five years, two of such years at least having been passed in the University, one of which must be subsequent to the date of passing the First Examination Candidates must also satisfy the examiners in the several subjects of the following examinations entitled respectively the Matriculation Examination, or such other examination as may have been recognised by the Joint Matriculation Board in its stead , the First Examination , the Second Examination , and the Final Examination

The *First Examination* —The First Examination consists of Part I , Physics and Chemistry ; Part II , Zoology and Botany Candidates will be allowed to pass the two parts separately

The *Second Examination* —The Second Examination consists of Part I , Organic Chemistry , Part II , Materia Medica, Practical Pharmacy, and Pharmacology , Part III , Anatomy and Physiology Candidates will be allowed to pass any parts separately, but Part I must be passed before Parts II or III

The *Final Examination* —The Final Examination consists of Part I , Pathology and Bacteriology , Part II , Medicine, Surgery, Obstetrics, Gynæcology, and Clinical Pathology , Part III , Forensic Medicine, Public Health, and Therapeutics Part I may be taken at the end of the second clinical year, and Parts II and III may be taken at the end of the third clinical year but not before the completion of the fifth year of medical study If taken separately Part II must be passed before Part III

Degree of Doctor of Medicine —Candidates are not eligible for the degree of Doctor of Medicine or Master of Surgery unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery of the University (or of Victoria prior to December, 1904) and at least one year has elapsed since they passed the examination for those degrees Candidates for the degree of Doctor of Medicine are required to present a dissertation and, if the dissertation be accepted, may be required to pass an examination

The first term commences on Oct 1st. Prospectus can be obtained from the Academic Sub-Dean

Post-graduate work —Practitioners wishing to attend Infirmary practice during short periods, or post-graduate classes held by members of the clinical staff, may do so on application to the Clinical Sub-Dean, from whom particulars may be obtained

Clinical Instruction.—The Leeds General Infirmary, in connexion with this medical faculty, has accommodation for 630 in-patients, including 88 beds at branch hospitals in the country During 1925 12,598 in-patients and 53,529 new out-patients were treated Clinical teaching takes place daily in the wards, and Clinical lectures are given in Medicine and Surgery by the Physicians and Surgeons There are Medical, Surgical, Ophthalmic, Aural, Electro-therapeutic, and Radiographic Departments, in each of which special instruction is imparted to students Gynæcological and Children's Departments, together with Laryngeal, Venereal, and Skin Clinics, are in operation, and there is a special ward for cases of nutritional disorders of children Several valuable prizes are given at the end of each session Numerous appointments at the Infirmary are annually open to students after qualification Further particulars may be obtained from the General Manager

In addition to work in the General Infirmary, clinical instruction in obstetrics is given in the Leeds Maternity Hospital and in mental and infectious diseases in the Wakefield (W R) Mental Hospital and Leeds City Fever Hospital respectively

UNIVERSITY OF SHEFFIELD

The Degrees in the Faculty of Medicine are Bachelor of Medicine and Bachelor of Surgery (M B , Ch B), Doctor of Medicine (M D.), and Master of Surgery (Ch M), Bachelor of Dental Surgery (B D S), and Master of Dental Surgery (M D S) There is also a Diploma of Licentiate in Dental Surgery The courses and degrees in the Faculty of Medicine are open to men and women alike Candidates must matriculate in the University or pass such other examination as may be recognised for this purpose by the University and sanctioned by the Joint Matriculation Board, and must pass also the further examination in Chemistry and Physics

Degrees of Bachelor of Medicine and Bachelor of Surgery —A candidate must have attained the age of 22 years on the day of graduation and have pursued the courses of study required by the University regulations during a period of not less than five years subsequently to the date of his matriculation and the passing of the further examination in Chemistry and Physics, three of such years at least having been passed in the University, one at least being subsequent to the passing of the First Examination

The First Examination —The subjects of the examination are Chemistry, Physics, and Biology The Intermediate B Sc. Examination in these subjects will, on payment of the required additional fee, be accepted instead of this examination Candidates must, after matriculation and the passing of the further examination in Physics and Chemistry, and registration as medical students, have attended courses of instruction (lectures and laboratory work) in chemistry, physics, and biology for one year each

The Second Examination —The subjects are Anatomy and Physiology Candidates must have completed the second year of professional study

The Third Examination —The subjects are Pathology, Pharmacology, Anatomy, and Physiology Candidates must have completed the Lent Term of the fourth year of professional study

The Final Examination —The subjects of the examination are —Part I —Forensic Medicine and Public Health , Part II —Medicine (including Mental Diseases and Diseases of Children), Surgery, Obstetrics (including Gynæcology) Candidates for Part I must have completed the Michaelmas Term of the fifth year of professional study ; candidates for Part II must have completed the fifth year of professional study.

Degree of Doctor of Medicine —Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M B , Ch.B at least one year previously, must present a thesis embodying observations in some subject approved by the professor of medicine, and must pass an examination in the Principles and Practice of Medicine.

Degree of Master of Surgery —Candidates must have taken the M B , Ch B at least one year previously, and must since have held for not less than six months a surgical appointment in a public hospital.

The subjects of examination are Systematic, Clinical, and Operative Surgery, Surgical Anatomy, Surgical Pathology, and Bacteriology

Diplomas are registrable on the Medical Register, the Higher School Certificates of Oxford and Cambridge Universities, and the Oxford and Cambridge Schools Examination Board, the Higher Certificates of London, Bristol, Durham Universities, the Joint Matriculation Board of the Northern Universities, and the Central Welsh Board Higher Certificate A candidate must enter for Chemistry and Physics together, and he will not be allowed to pass in one without obtaining at the same time at least half the number of marks required to pass in the other subject He will be admitted to the examination on producing evidence of having passed the required Preliminary Examination in General Education and of having received instruction during 180 hours in Chemistry and 120 hours in Physics to the satisfaction of his teachers These courses may be commenced or attended before the required Preliminary Examination in General Education is passed The examination is partly written, partly oral and partly practical A candidate rejected in one or both subjects of the examination will not be admitted to re-examination until after the lapse of a period of not less than three months and he must produce evidence of further instruction in the subject or subjects of failure The fee for the examination is £3 3*s*, for re-examination in Chemistry £2 2*s*, and for re-examination in Physics £1 1*s*

There are two Professional examinations called the *First* and *Final Examination* The courses of study for these examinations may be commenced before the Pre-Medical examination in Chemistry and Physics or some equivalent examination has been passed, provided that three terms of study are completed after the examination has been passed

The subjects of the First Professional Examination are Section I (*a*) Anatomy, including Histology and Embryology (*b*) Physiology, including Bio-Chemistry Section II Pharmacology, Practical Pharmacy and Materia Medica A candidate must have attended at a recognised Medical School courses of instruction in Anatomy, including Embryology during five terms, during which he must have dissected the whole body, courses of instruction in Physiology, including General Biology, Bio-Chemistry and Bio-Physics during five terms, courses of instruction in Pharmacology, Practical Pharmacy and Materia Medica A candidate may present himself for the two Sections together or separately, but he must take parts (*a*) and (*b*) of Section I together until he has passed in one or both parts, but a candidate will not be allowed to pass in one part unless he obtains at the same time at least half the number of marks required to pass in the other part

Section II of the examination may be passed at any time before the candidate enters for the Final Professional Examination The fee for the First Professional Examination is £10 10*s*, for re-examination after rejection in Section I £6 6*s*, for re-examination after rejection in either part of Section I £3 3*s*, for re-examination after rejection in Section II £3 3*s* A candidate who produces satisfactory evidence of having passed an examination in the subjects of Section I or of either part of Section I and of Section II in the examination for the degree in Medicine conducted at a University recognised by the Board will be exempted from further examination in such subjects

Final Professional Examination—The subjects of the Final Professional Examination are Section I (*a*) Pathology, including Morbid Anatomy, Morbid Histology and Clinical Pathology (*b*) Bacteriology Section II Part I Medicine, including Medical Anatomy, Forensic Medicine and Public Health Part II Surgery, including Surgical Anatomy and the use of Surgical Appliances Part III Midwifery and Gynæcology The examination is partly written, partly practical, partly clinical and partly oral A candidate may take Sections I and II and the three parts of Section II of the Final Examination separately or may take the whole examination together He will be required to produce the certificates required by the regulations before being admitted to the respective parts of the examination A candidate who produces evidence of having passed an examination for a degree in medicine in the subjects of Pathology and Bacteriology at a University recognised by the Board is exempted from Section I The fee for admission to Section I is £4 4*s*; for admission to Section II, Part I, £10 10*s*, Part II, £10 10*s*, Part III £6 6*s*, and the re-examination fees are respectively £3 3*s*, £6 6*s* £6 6*s*, and £4 4*s*.

Students of recognised universities in England, Scotland and Ireland, who have passed examinations for a degree in Medicine at their universities in the subjects of the First Examination of the Examining Board, may enter for a part of the Final Examination at the expiration of two years from the date of passing in Anatomy and Physiology on production of the required certificates but they must complete 33 months of clinical study before completing the examination

Members of certain recognised Indian, Colonial, and Foreign universities who have passed examinations for the Degree of Doctor or Bachelor of Medicine or Surgery in the subjects of the First and Second Examinations of the Examining Board under the old Regulations, or of the First Examination and Section I of the Final Examination under the new Regulations may present themselves for the Final Examination under special conditions The Board also grants Diplomas in Public Health, in Psychological Medicine, in Ophthalmic Medicine and Surgery, in Tropical Medicine and Hygiene, and in Laryngology and Otology Candidates must hold a Medical qualification registrable in the United Kingdom or be Graduates in Medicine of a recognised Indian, Colonial, or Foreign University Particulars and conditions of admission to all examinations, fees, &c, may be obtained from the Secretary of the Examining Board, Examination Hall, Queen-square, Bloomsbury, London, W C 1

ROYAL COLLEGE OF PHYSICIANS OF LONDON·

THE MEMBERSHIP AND FELLOWSHIP.

The College confers two separate diplomas—the *Fellowship*, a purely honorary distinction, and the *Membership*, obtained by examination

Membership—The age for admission to this diploma, it will be noticed, has been changed from 25 to 23 years The alteration in the by-law of the College is designed to enable men who have just finished house appointments to sit for an examination for which their recent clinical experience has exactly fitted them The candidate must either have passed the examinations for the licence of the College, or else be a registered medical practitioner who has obtained the degree of Doctor or Bachelor of Medicine at a University recognised by the Censors Board The examination is directed partly to pathology and partly to the practice of medicine Credit is also given to candidates who show a knowledge of Latin, Greek, French, or German Further information may be obtained from the Registrar at the College The fee for admission as a Member of the College is 40 guineas, except when the candidate for membership is a licentiate of the College, in which case the fee already paid for the licence is deducted from the 40 guineas The fee for the examination is 6 guineas, which is reckoned as part of the fee for admission in the case of success

Fellowship—The *Fellows* are selected annually from the ranks of the *Members* by the Comitia of the College and treatment, the various forms of Electrical treatment, including High Frequency Currents, Electric Baths, Finsen Light treatment, and Massage

The students of the school also attend the practice of the Royal Hospital for Sick Children and Women, containing 140 beds, and that of the Bristol Eye Hospital, with 40 beds The total number of beds available for clinical instruction is therefore about 750

Appointments —(1) Undergraduate Clinical clerkships, dresserships, also ophthalmic, obstetric, pathological and ear, nose, and throat clerkships, are tenable at the Bristol Royal Infirmary and the Bristol General Hospital In these institutions the dressers reside in rotation free of charge (2) Post-graduate At the Bristol Royal Infirmary Four house surgeons, £80 each per annum , two house physicians, £80 , two resident obstetric officers, one of whom is also ophthalmic house surgeon, £100 and £80 ; ear, nose, and throat house surgeon. £80 , dental house surgeon, £80 All these appointments are made for six months From the resident officers a senior resident officer is appointed at a salary of £200 At the Bristol General Hospital Senior resident medical officer, £250 per annum , casualty house surgeon, £80 per annum ; two house physicians, £80 per annum , house surgeon, £80 per annum , special obstetric physician, £80 per annum , house surgeon to special departments, £80 per annum , dental house surgeon, £300 per annum Appointments are for six months, except that of senior resident medical officer, which is for two years

Scholarships —The following are among the scholarships and other awards open to students of the school The Ashworth Hallett Scholarship, value £45, open to women only , two Martin Memorial Pathological Scholarships of £10 each , the Tibbits Memorial Prize, value 9 guineas, for proficiency in practical surgery , the Committee's Gold and Silver Medals for fifth-year students for general proficiency ; the Augustin Prichard Prize, value about 6 guineas, for proficiency in anatomy , the Henry Clark Prize, value 11 guineas, for proficiency in gynæcology , the Crosby Leonard Prize, value 7 guineas, for proficiency in surgery ; the Suple Surgical Prize, a gold medal and 7 guineas , the Suple Medical Prize a gold medal and 7 guineas , the Henry Marshall Prize, value £12, for dressers; the H M Clarke Scholarship, value £15, for proficiency in surgery , the Sanders Scholarship, value £22 10*s* , for general proficiency, the Barrett-Roué Scholarship for proficiency in diseases of the eye, ear, nose and throat, value £14 ; Lady Haberfield Scholarship, value about 25 guineas ; Phyllis Siepman Prize, for proficiency in Diseases of Children, value £25

Bristol City Senior Scholarships and those offered by the counties of Gloucestershire, Somerset, Wilts, and Devon, are tenable in the University

Some of the Fellowships awarded by the Colston Research Society for research in the University are allotted to the Faculty of Medicine

Daily Post-graduate Study —For those who are able to devote several hours each day to hospital practice the University offers special facilities for Post-graduate work Qualified medical practitioners may be appointed as Clinical Assistants for a period of one or more months They may act as Assistants, if times permit, in more than one department and in any of the hospitals during their period of study They will be entitled to the use of the clinical laboratories and medical library, and have the right to attend in all departments, including operations, post-graduate and ordinary clinical demonstrations, and post-mortem examinations

Post-graduate Clinical Work — Demonstration courses with weekly lectures are held during May June, and July All inquiries and applications for admission should be addressed to the Director of Post-graduate Studies (Clinical Section) Pathological Department. University of Bristol who can be seen on any day by appointment

Further information as to scholarships, curricula, and fees can be obtained from the Dean of the Faculty of Medicine or the Registrar of the University

UNIVERSITY OF WALES.

This University has, inter alia, the privilege of granting Degrees in Medicine, and Diplomas in Public Health and Tuberculous Diseases Preliminary courses of study for the Degrees in Medicine may be pursued at any of the constituent Colleges of the University—viz , at Aberystwyth, Bangor, Cardiff, or Swansea The Welsh National School of Medicine is situated in Cardiff and is an integral part of the University College of South Wales and Monmouthshire there

University College of South Wales and Monmouthshire, Cardiff Welsh National School of Medicine— This School is staffed on the Unit System, and its Courses of Instruction are open to both men and women students Students can complete the whole of their curriculum in the School The courses of instruction qualify for the degrees in Medicine and Surgery of the University of Wales and for the Degrees and Diplomas of other examining bodies Hospital instruction is given at the Cardiff Royal Infirmary, at the City Lodge Hospital, and at other recognised institutions The attention of students about to matriculate is drawn to the entrance scholarships offered for competition at the University College, Cardiff, many of which may be held by medical students Full particulars of the examinations for these, which are held in April of each year, may be obtained by application to the Registrar Medical practitioners wishing to prepare for the Diploma in Public Health or for the Tuberculous Diseases Diploma of the University of Wales can attend complete courses of instruction in the School Prospectuses can be obtained on application to the Dean of the Faculty of Medicine or to the Secretary, Welsh National School of Medicine, Newport-road, Cardiff

Clinical Instruction —CARDIFF ROYAL INFIRMARY Founded 1837 450 beds —There are out-patient departments for Dermatology Diseases of Children, and Dental Cases, and a Maternity Hospital — SWANSEA GENERAL AND EYE HOSPITAL 262 beds — Departments Pathological Laboratory , Venereal Diseases Department , Ophthalmic , Ear, Nose and Throat ; Women , X Ray and Massage Convalescent Home 26 beds

ENGLISH MEDICAL CORPORATIONS GRANTING DIPLOMAS

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

Under this heading we give the regulations for the examinations enjoined by the Conjoint Examining Board of the Royal Colleges of Physicians of London and Surgeons of England and of the Society of Apothecaries upon students desiring their respective diplomas of qualification We do not give any list of schools recognised by these bodies as eligible to prepare students for their examinations beyond mentioning that all the schools which we have already described (under the heading of the Universities to which they are attached) are recognised as suitable places of instruction by the corporations granting medical diplomas The courses of study at the principal colonial medical schools are also recognised as qualifying for the examinations of these corporations

Students are required to pass a *Pre-Medical Examination* in Chemistry and Physics conducted by the Conjoint Examining Board before commencing the five years curriculum of professional study or some other examination recognised by the Board—namely, the examination in Chemistry and Physics for the degree in Medicine of any University recognised by the Board , a Pre-Medical Examination conducted by any of the Qualifying Bodies whose Degrees or leave Further information can be obtained on application to the Dean Sir Henry Simson, at the Hospital Secretary of the Post-graduate College Mr C Cole, and of the Hospital Mr H A Madge

ROYAL NORTHERN GROUP OF HOSPITALS—The Royal Northern Hospital, Holloway, London, N 7, is the main institution of the Royal Northern Group of Hospitals which includes the Royal Chest Hospital, City-road E C, Hospital of Recovery, Southgate, and the Reckitt Convalescent Home, Clacton-on-Sea The total number of beds in the group is 394 The Royal Northern Hospital is recognised by the Examining Board in England of the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the medical curriculum Besides the honorary staff there are six anæsthetists three pathologists, resident medical officer, resident house physician, three resident house surgeons, two resident casualty officers, and one resident obstetric surgeon The large rectangular and circular wards, each of which contains 25 beds, the children's ward for children under 5 years of age, the observation wards in the new Casualty Department, the two operation theatres, and out-patient department are designed with a view of offering the greatest facilities for clinical work

The Special Departments include the following Fracture, genito-urinary and neurological, physico-therapeutic, pathological (under a director of clinical pathology), tuberculosis, and venereal diseases Patients are removed to the Hospital of Recovery by ambulance a few days after operation Medical practitioners are cordially invited to see the general and special practice of the Hospital Demonstrations are given daily in the wards and out-patient departments Clinical assistants (qualified), clinical clerks, and pathological clerks are appointed in the general and special departments and may receive certificates at the end of their terms of office

Special Departments—A new maternity department has been opened, and the light department has been re-equipped

Post-Graduate Facilities—Weekly lectures by members of the hon medical and surgical staff will be given throughout the year They are free to all medical practitioners Special classes and demonstrations are being arranged for post-graduates They will include instruction in General Medicine and Surgery, and also lectures and demonstrations in special subjects at the Royal Northern and Royal Chest Hospitals

Further particulars can be obtained from the Secretary of the Medical Committee of the Hospital

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N 15—This hospital is in the midst of a densely populated neighbourhood and contains medical, surgical, gynæcological, and children's wards, having 200 beds There are special departments for gynæcological cases, diseases of the eye, ear, throat, and nose, skin diseases, plastic surgery, medical electricity, radiography, and dentistry Operations are performed every afternoon of the week (except Saturday) at 2 30 P M. Clinical instruction, ordinarily including laboratory classes, and lectures are given in the wards and out-patient departments laboratories, and lecture hall in connexion with the North-East London Post-Graduate College attached. There are five resident medical officers, and clinical assistants are appointed under certain conditions Special intensive post-graduate courses are also held at intervals throughout the year

Further particulars in regard to the hospital may be obtained from Dr S C Shanks, Secretary to the Medical Committee, 87, Harley-street W. 1 or from Dr A J Whiting, Dean of the College, 19, Cavendish-square W 1

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N W (Established 1873, Incorporated 1917)—The hospital contains 135 beds The in-patients in 1925 were 1031, and the out-patients and casualties numbered 13 198 new cases The medical and surgical practice of the hospital is open to students and practitioners Operations Monday, 1 30 P M, Tuesday, 2 30 P M, Wednesday, 9 A M and 1 P M, Thursday, 8 A M, Friday, 10 A M. and 3 P M, and Saturday, 9 A M. New Out-patient Departments for special diseases have been opened Neurology, Diseases of the Stomach and Disorders of Digestion, Diseases of Women, Genito-Urinary Diseases, Diseases of the Rectum, and Dermatology.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL—In-patient Department Haverstock Hill, N W 3, Out-patient Department Bayham-street, Camden Town (130 beds—viz, 102 free 8 isolation and observation, &c, and 20 paying or contributory) Serves Hampstead and the populous districts of Kentish and Camden Town The out-patients, with the exception of Hampstead casualty and emergency cases, attend exclusively at the Out-patients' Department Bayham-street, Camden Town Further particulars from the Secretary at the hospital Post-graduate work is in connexion with the Fellowship of Medicine

SOUTH LONDON HOSPITAL FOR WOMEN, South Side, Clapham Common, S W, Out-patient Department 86-90, Newington Causeway, S E—This hospital, officered entirely by medical women, is a general hospital for women, girls, and small children of both sexes, and provides accommodation for 113 patients All diseases are treated with the exception of acute infectious fevers and mental disease There are Ear, Nose and Throat, Ophthalmic, Urological, X Ray and Electrical, Pathological, Physio-Therapeutic. and Dental Departments The hospital is a centre for the treatment of venereal diseases under the Public Health (Venereal Diseases) Regulations, 1916 The provision of additional facilities for post-graduate training for medical women is one of the special objects of the hospital The number of in-patients treated during the year 1925 was 1965 At the out-patient department in Newington Causeway 8924 new cases were treated during the past year. the total number of out-patient attendances amounting to 39 011 Clinical assistants (qualified women only) are from time to time appointed in the out-patient department Two resident students act as clinical clerks in the surgical wards Secretary Miss M E Ridler

FRENCH HOSPITAL AND DISPENSARY, Shaftesbury-avenue, W C—This hospital, which was founded in 1867 to afford medical treatment for poor foreigners who speak the French language, has 74 beds The Convalescent Home and Retreat for Aged French People at Brighton contains 61 beds Secretary Mr J Knecht

ITALIAN HOSPITAL Queen-square W C—This institution was established in 1884 for the maintenance and medical treatment of all persons without distinction of nationality or creed who may be suffering from sickness or bodily infirmity The institution also provides surgical and medical relief to Italians and others not being inmates of the hospital It has 50 beds

GERMAN HOSPITAL Dalston. E 8—Founded Oct 15th 1845 for the reception of natives of Germany and others speaking the German language and for cases of accidents and emergencies. 154 beds including 10 as private rooms X Ray Department with the latest apparatus Artificial Sunlight Department In connexion with the hospital is a Convalescent Home at Benslow Hitchin, Herts with 14 beds Secretary A R Charles, German Hospital

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC Queen-square W C 1—The hospital with the Convalescent Home at East Finchley and branch at Clapham Park contains 265 beds and cots The out-patient physicians attend every Monday, Tuesday, Thursday, and Friday at 2 P M,

ROYAL COLLEGE OF SURGEONS OF ENGLAND:

THE FELLOWSHIP.

The Royal College of Surgeons of England confers its diploma of Fellow upon a few distinguished persons in an honorary capacity Two Members of long standing may also be elected to the Fellowship annually. But the bulk of the Fellows obtain the diploma as the result of examination

Fellowship —The examination for the Fellowship is divided into two parts—viz , the First Examination and the Second Examination. The subjects of the First Examination are Anatomy and Physiology, and those of the Second Examination are Surgery, including Surgical Anatomy and Pathology The examinations are partly written and partly vivâ voce and include the examination of patients and the performance of operations on the dead body The First Examination will in future years be held in June and December and the Second Examination in May and November.

The fees for examination are —First Examination, first admission 8 guineas, and for each re-admission 5 guineas Second Examination, each admission 12 guineas Of such examination fees 20 guineas will be reckoned as part of the fee payable upon admission to the Fellowship The fee to be paid upon admission to the Fellowship is 30 guineas, except when the candidate is a Member of the College, in which case the fee is 20 guineas

A Member of the College is admissible to the First Examination at any time after receiving his Diploma of Membership A candidate who is not a Member is admissible after passing the First and Second Examinations of the English Conjoint Board, of the equivalent examinations in his University, on the production of certificates of attendance upon prescribed courses

A Member of the College is admissible to the Second Examination at any time after having passed the First Examination, on producing evidence of having been engaged not less than six years in the study (or study and practice) of the profession

A candidate who is not a Member of the College must possess the registrable surgical and medical degrees of universities recognised by the Council and must have been engaged in the study (or study and practice) of the profession for not less than four years subsequent to the date of obtaining the recognised qualification, one year of which shall have been spent in attendance on the Surgical Practice of a recognised hospital The diploma of Fellow is not conferred upon successful candidates until they have attained the age of 25 years

The Regulations may be obtained on application to the Director of Examinations, Examination Hall, Queen-square, Bloomsbury, London, W C 1

SOCIETY OF APOTHECARIES OF LONDON.

The Primary examination is held quarterly Part I Chemistry, Chemical Physics, Practical Chemistry, Biology, Materia Medica and Pharmacy Part II includes Anatomy, Physiology, and Histology This examination cannot be passed before the completion of twelve months Practical Anatomy with Demonstrations, and these subjects cannot be taken separately except in the event of the candidate having previously passed in one

The Final examination is held monthly except in September Part I Clinical Surgery. Principles and Practice of Surgery, Surgical Pathology, and Surgical Anatomy, Operative Manipulation, Instruments, and Appliances Part II Clinical Medicine Medicine, Pharmacology, Pathology, and Morbid Histology, Forensic Medicine, Hygiene, Theory and Practice of Vaccination, and Mental Diseases Part III includes Midwifery, Gynæcology, and Diseases of New-born Children and the Use of Obstetric Instruments

The course of study for the *Final examination* includes attendance on the Surgical and Medical Practice, with Post-mortem Examinations, at a hospital connected with a medical school for a period of two winter and two summer sessions, including a course of Practical Midwifery, with attendance on 20 Midwifery cases. The course of medical study must extend over five years, and the offices of dresser or clinical clerk must be held at a hospital or other institution recognised by the Society Two years must elapse after a candidate has passed the examination in Anatomy and Physiology before sitting for any part of the Final examination.

Evidence shall also be given of practical instruction in Infectious Diseases and in Mental Diseases (at a lunatic asylum or in the wards of an institution containing a special ward set apart for the treatment of mental diseases), and in any two of the following subjects. Ophthalmic Surgery, Laryngology with Rhinology and Otology, Dermatology, and Diseases of Children Candidates intending to present themselves for examination are required to give 14 days' notice The fee for the Licence is 20 guineas Female candidates are admitted to examinations The examination offices are open from 10 A M to 4 P.M , on Saturdays from 10 A M to 1 P M All letters should be addressed to the Secretary, Court of Examiners, Society of Apothecaries of London, Blackfriars, E C 4

METROPOLITAN ANCILLARY SCHOOLS AND HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION

The institutions which follow provide to the medical student and medical graduate facilities for different forms of instruction and clinical observation In each case further information can be obtained from the secretary of the hospital

The Seamen's Hospital Society possesses four hospitals—the *Dreadnought* Hospital at Greenwich, 250 beds, and the Branch Hospital in the Royal Victoria and Albert Docks, E , 53 beds , the Hospital for Tropical Diseases, Endsleigh-gardens, 58 beds, London, N W 1 , Tilbury Hospital, Tilbury Docks, Essex, 65 beds , King George's Sanatorium for Sailors, Bramshott, Hants, 80 beds, and the Angas Home, Cudham, 36 beds Total, 542 beds It has also a Dispensary in the East India Dock-road from which patients are transferred to the hospitals

In conjunction with the Fellowship of Medicine arrangements have been made for a course of operative surgery Secretary Sir P J Michelli, C M G

West London Hospital, Hammersmith, W 6 — This hospital has 210 beds, all of which are constantly in use 3037 in-patients and 40,809 out-patients, whose attendances numbered 199,119, were treated last year Attached to the hospital is the West London Post-Graduate College The practice of the hospital is reserved exclusively for qualified men, no junior students being admitted Instruction is given in the medical and surgical out-patient rooms and demonstrations are given in the wards Clinical assistantships are obtainable in the various general and special out-patient departments Special classes are held in Diseases of the Throat and Nose, Skin, and Eye, and in Gynæcology, *Medical* Electricity, Operative Surgery, Bacteriology, Anæsthetics, Intestinal Surgery, Medical and Surgical Diseases of Children, Blood and Urine, Clinical Microscopy, Cystoscopy, Venereal Diseases, and Operative Ophthalmology, Radiography, X Ray Therapy The accommodation for post-graduates consists of a lecture room, together with reading, writing, and class rooms, &c The hospital has a fully equipped pathological laboratory at which instruction is given in elementary bacteriology The fees for hospital practice, including lectures, are £4 4s for one month, £9 9s for three months, or £22 1s for one year The certificate of the hospital is accepted by the Admiralty, War Office, Colonial Office, and India Office in cases of study valuable instruction in the Antenatal Department, where over 4000 patients attend yearly Special Lecture-demonstrations are given by members of the staff Certificates of attendance at this hospital are recognised by all the Universities, Colleges, and licensing bodies Pupil midwives and maternity nurses are received and specially trained A Residential College provides accommodation for students and qualified practitioners (both men and women), and is opposite the hospital, with which it is in telephonic communication Arrangements have been made for Medical Students to receive the preliminary instruction in Practical Midwifery recommended by the General Medical Council For further particulars application should be made to Mr Arthur Watts, Secretary

Hospital for Women, Soho-square, W.—The teaching in connexion with the above hospital has been greatly extended, and is available for Post-Graduates only, in limited numbers Every facility is afforded them, by the teaching staff, of obtaining experience in diagnosis and treatment of Gynæcological diseases The hospital contains 80 beds, and the out-patient attendances are over 14,000 per annum Operations take place daily at 2 o'clock except on Saturdays The X ray department is supplied with the latest installation both for diagnosis and treatment, and experience can also be gained in the treatment of malignant disease by means of radium Incorporated is the London School of Gynæcology, comprising attendance in Out-patient department, operating theatre, clinical lectures, and X ray treatment For further particulars apply to the Secretary

Samaritan Free Hospital for Women, Marylebone-road, N W —Qualified practitioners are admitted as clinical assistants to both the in- and out-patient departments The fees, payable in advance, are £3 3s for three months Full particulars may be obtained on application to the Secretary to the Medical Committee at the hospital There are 70 beds

East London Hospital for Children and Dispensary for Women, Glamis-road, Shadwell, E —The hospital maintains 136 cots, and on an average 245 out-patients are seen daily Clinical instruction is given by the physicians and surgeons to the hospital, which is recognised by the Conjoint Board for England as a school of medical teaching for students in the fifth year of the curriculum All particulars may be obtained on application to the Secretary. Two clinical clerkships for qualified or unqualified students are open every three months subject to reappointment if desired Clinical assistants (qualified men only) are from time to time appointed in the out-patient department Any additional information may be obtained on applying to Mr W M Wilcox, the Secretary

Hospital for Sick Children Great Ormond-street, W C 1 (contains 268 beds)—The hospital having been recognised by the Conjoint Board for England as a place where, under the new curriculum six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need and is open to students of both sexes who have completed four years of medical study and *also to* qualified medical men and women The medical staff are recognised by the University of London as teachers in Diseases of Children Arrangements have also been made with University College Hospital and the London School of Medicine for Women for the routine admission of their students of both sexes to clerkships and dresserships in the wards Appointments are made every three months to eight medical clerkships, which are open to students of the hospital Clinical instruction is given daily by members of the visiting staff Fees for hospital practice, one *month*, 2 guineas, three months 5 guineas perpetual ticket 10 guineas Clinical Clerks 1 guinea for one month Ophthalmological Clerkships—Clinical Clerks are appointed once a month Fees £1 1s for one month's attendance Pathological Department Facilities are afforded to post-graduates for obtaining theoretical and practical instruction in Clinical Pathology and Bacteriology, and in Medical Biochemistry in the Pathological and Biochemical Laboratories Courses of eight to ten Lecture-Demonstrations are given at weekly intervals twice a year in both subjects (Clinical Pathology and Bacteriology, and Biochemistry) These lecture-demonstrations are of one or two hours' duration. Fees · For Course of eight to ten Laboratory Demonstrations in either branch, £5 5s , for combined Course of (*a*) Clinical Pathology and Bacteriology and (*b*) Medical Biochemistry, £8 8s Time spent in clerking and dressing is recognised by the Universities of London, Oxford, and Cambridge, and by the Conjoint Board for England as part of the approved curriculum for students entering for a final examination These appointments are open to students of all recognised medical schools In addition, special lectures in post-graduate work are held throughout each term of the year, as well as routine post-graduate instruction daily. Details may be obtained by application to the Dean or Secretary at the hospital The medical school is a constituent part of the London Post-Graduate Association. Dean of the Medical School Dr Wilfred J Pearson Secretary Mr James McKay

Evelina Hospital for Sick Children, Southwark Bridge-road, S E —This hospital contains 76 cots and a very extensive Out-patient Department Clinical assistants (either sex), to work with the Honorary Medical Staff for Out-patients, may be appointed quarterly for a period of three months, there is no salary attached to these posts, but, on the other hand, no fees are charged

Victoria Hospital for Children, Tite-street, Chelsea, S W —The hospital contains 130 beds and has a large out-patient department (over 1400 weekly); the home at Broadstairs has 50 beds Out-patients are seen as under —Diseases of the Eye · Thursday, 2 p.m. Diseases of the Skin Monday, 1 30 p.m. Whooping-cough Cases Friday, 2 p m Dental Cases Tuesday, 1 30 p m Medical and Surgical Cases Mornings at 9 30 and 11 30 Accidents and urgent cases are admitted at any time Secretary: *Mr D St. John Bamford*

A Private Nursing Home for Children is now open at 29, Tite-street, in connexion with and adjacent to the hospital Terms £1 1s per day or £5 5s per week Application for admission should be made to the Secretary Patients must be under the care of a consultant of one of the hospitals of London and the question of payment for his fees is a matter of arrangement between him and the child's parents

Queen's Hospital for Children (*late North-Eastern Hospital for Children*), Hackney-road Bethnal Green E 2 (Telephone 305 and 534 Clissold) For the sick children of the poor under 14 years of age Established 1867 134 beds in London and 36 at the seaside branch, "Little Folks" Home, Bexhill —During the past year 1709 in-patients and 39,906 out-patients (attendance 157,531) were received. The surgeons attend on Monday, Tuesday, and Friday at 9 a m and on Thursday at 1 30 p m ; the physicians daily at 1 45 p m , except Saturday, and also Wednesday, Thursday, and Friday 9 30 a m , as well as 1 45 p m Whooping-cough Physician: Saturday, 9 30 a m Skin Physician Friday, 1 30 p m Ear Nose and Throat Surgeons Monday, Tuesday, and Thursday, 9 30 a m Eye Surgeon. Wednesday 1 30 p m X ray department open every day Radiologist attends Monday, Tuesday Wednesday and Friday, 2 p m Dental department, Tuesday and Friday 2 p m , and also every morning for L C C school cases (except Saturday) Massage department daily morning and afternoon (except Saturday afternoon) Light treatment department and the physicians daily. Clinical clerks are appointed under physicians and clinical assistants to out-patient physicians Post-graduate Courses of Lectures and Demonstrations are held three times every year, usually commencing in January, May, and October and lasting eight weeks Special Courses in Neurological Ophthalmology, Neuro-Pathology, and the Anatomy and Physiology of the Nervous System are given The Pathological Laboratory is available for special work under the Pathologist The hospital has been recognised by the Conjoint Board of England as a place where part of the fifth year may be devoted to clinical work

All communications concerning clinical appointments, lectures, hospital practice, and fees should be addressed to the Secretary

Hospital for Epilepsy and Paralysis, &c, Maida Vale, W (85 beds) —Both in-patient and out-patient departments of this hospital are open free to students as well as to medical graduates Secretary and General Superintendent: Mr H. W Burleigh The out-patient department is open every week-day except Saturday at 2 P.M

West End Hospital for Nervous Diseases — Out-patient Department, Welbeck-street, W, In-patient Department, Gloucester Gate, Regent's Park, N W, 80 beds, over 16,500 out-patient attendances Completely equipped with pathological department and other special departments the hospital offers all facilities for instruction in Neurological subjects A series of clinical demonstrations, apart from the general practice of the hospital, is held regularly each session, and the hospital is cooperating with the Fellowship of Medicine in the programme of special post-graduate teaching organised by the Association Appointments as clinical assistants in the out-patient department are open to registered medical practitioners The Savill Memorial Prize (value £15) and Medal are offered biennially for competition among post-graduate students who have attended at the hospital

For further particulars apply to C C Worster-Drought, M D. (Dean), or to J P Wetenhall, B A, Secretary, 73, Welbeck-street, W 1

Bethlem Royal Hospital, St George's-road, S E 1 —This hospital is open for the admission of two Resident Physicians who have recently obtained their diplomas to practise Medicine and Surgery They are permitted to reside in the hospital for a term generally not exceeding six months, commencing May 1st and Nov 1st, and they are provided with apartments, complete board, attendance, laundry, and a salary at the rate of £100 per annum They are under the direction of the Physician Superintendent, and are elected by the Committee from candidates whose testimonials appear to be most satisfactory In addition, Clinical Assistants are appointed from time to time These posts are non-salaried and non-resident, but partial board is provided

The students of certain specified Medical Schools receive clinical instruction in the Wards of the hospital, and qualified practitioners and other students may attend for a period of three months on payment of a fee Two Courses for the Diploma in Psychological Medicine for post-graduates are held twice yearly at Bethlem Royal Hospital A Department for Nervous Diseases has been instituted in a building quite apart from the main hospital Neurological and early mental cases are dealt with For further particulars apply to the Physician Superintendent, Bethlem Royal Hospital

Hospital for Consumption and Diseases of the Chest, Brompton —The hospital contains 333 beds The Sanatorium at Frimley contains 100 beds and 50 beds for paying patients Six house physicians reside in the hospital for a term of six months, their duties include attendance in the out-patient department. An additional month may be spent at the Sanatorium Pupils are admitted to the practice of the hospital: terms £1 1s for one month, three months, £2 2s.

Clinical Demonstrations are given throughout the year by members of the medical staff, Clinical assistants are appointed to the physicians in the out-patient department and clinical clerks to the physicians in the wards The hospital has been recognised by the Conjoint Board for England as a place where six months of the fifth year may be spent in clinical work The medical practice of the hospital is also recognised by the University of London, the Apothecaries' Society, and the Army and Navy and Indian Medical Boards The hospital is open to post-graduates and students During the month previous to each conjoint examination the teaching will be as far as possible for students about to enter for the final examination The hospital practice is open to post-graduate students. Dean of the Medical School Dr Maurice Davidson, from whom all particulars can be obtained

City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E 2 —During the past year 1185 in-patients have been treated in the wards The out-patients treated during 1925 numbered 9856 Special Departments Surgical, Laryngological, Radiological, Pathological, Electro Cardiographic Assistants are appointed to the Clinics, and a limited number of research workers to the Pathological Department The in-patient staff visit generally in the afternoon, out-patients at 2 P M The Post-Graduate Association is open to graduates on payment of fee of 1 guinea per annum, which entitles them to attendance at clinics, post-mortem demonstrations, and operations Special demonstration and lecture courses are provided, particulars of fees for which can be obtained from the Dean A club room is also provided Application for prospectus, &c, should be made to the Dean Graduates desiring Assistantships in any department should apply to the head of the Special Department Tuberculosis Dispensary (Boroughs of Bethnal Green and part Hackney) Tuberculosis Officers H T Howell and F W Hamilton Other information from the Secretary

Royal Chest Hospital (for all affections of the heart and lungs), City-road, E C (85 beds) Branch of the Royal Northern Hospital, Holloway —This hospital provides accommodation for 85 in-patients Expenditure for 1925 £15,901 12s 3d, income, £14,498 1s 9d The attendance of out-patients 30,000 annually Secretary Mr G G Panter

Mount Vernon Hospital (Incorporated) for Tuberculosis and Diseases of the Lungs and Heart, Northwood, Central Out-patient Department, Fitzroy-square, W —The hospital contains 150 beds, Medical and Surgical; 50 beds reserved for children requiring surgical aid Number of in-patients, 424, out-patients, 16,280 Resident Medical Staff. Clinical Demonstrations are given by the Visiting Medical Staff at the hospital at Northwood New departments for artificial light treatment have been opened both in the hospital and the out-patient department Clinical assistants are appointed to physicians in the wards and in the out-patient department Secretary Mr W J Morton

Queen Charlotte's Maternity Hospital (formerly Queen Charlotte's Lying-in Hospital and Midwifery Training School), Marylebone-road, N W —This hospital receives about 2000 patients annually, besides having a large out-patient department Medical pupils are received at all times of the year Pupils have unusual opportunities of seeing obstetric complications and operative midwifery, on account of the very large number of primiparous cases—nearly one-half of the total admissions Clinical instruction is given on the more important cases which present themselves They also receive owing to rebuilding operations, but the new wards and in-patient operating theatres were opened in November, 1925, and the hospital now contains 80 beds Practitioners and medical students are admitted to the practice of the hospital at a fee of £5 5s for three months, £7 7s for six months, or £10 10s for perpetual studentship From amongst the students junior clinical assistants are appointed periodically For terms and further information apply to the Dean, Mr Gilbert Chubb

Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W C —The hospital is open daily to all qualified medical practitioners on presentation of their visiting cards Demonstrations of the cases and clinical instruction are given daily by the chief surgeon of each clinic Lectures each Friday at 4 p m An intensive Course of Lectures with Operative Surgery Class is given twice yearly—in May and October Consultations on interesting cases take place on the fourth Wednesday in each month at 4 p m Clinical Assistants are appointed and are expected to hold office for at least three months They are required to attend twice weekly at 1 30 o'clock for the afternoon and at 4 30 o'clock for the evening Clinics Full syllabus can be obtained on application to the Dean

Metropolitan Ear, Nose, and Throat Hospital —The hospital is in Fitzroy-square, W. The Out-patient Department is opened daily (Saturdays excepted) at 2 30 p m to all medical practitioners and senior students for acquiring clinical instruction and technical knowledge Operations upon in-patients are performed on Tuesdays, Wednesdays, and Thursdays at 10 a m Fee for one month's attendance at the hospital £3 3s, and for three months £5 5s Clinical Assistants are appointed as vacancies occur, and have responsible duties Applications should be made to the Secretary, L L Phillips

Royal Ear Hospital —This hospital is now the Ear Nose, and Throat Department of University College Hospital, and the new building in Huntley-street will be open early in the Winter Session, so that there will be a new fully-equipped Ear, Nose, and Throat Clinic attached to University College Hospital

St. Mark's Hospital for Cancer, Fistula, and other Diseases of the Rectum, City-road, E C 1 (Founded 1835)—The hospital contains for men and women 54 beds Operations are performed on Mondays, Wednesdays, and Thursdays at 2 30 p m Medical practitioners and students are invited to the operations and to the clinical instruction in the wards and in the out-patient department Two fortnightly courses held during year in cooperation with the Fellowship of Medicine and Post-Graduate Medical Association Average out-patient attendances, 4000 per year Average in-patients, 675 per year

St Peter's Hospital for Stone and other Urinary Diseases, Henrietta-street, Covent Garden Established 1860 New Hospital opened 1882 —The hospital contains 30 beds for men and 2 beds for women and children X ray Department opened 1925 (diagnostic only) Medical practitioners and students are invited to the clinical instructions which are given in the wards and out-patient department daily excepting that the only out-patient clinic open to medical women is that held at 2 p m Fridays for women and children and to the operations in the theatre on Mondays at 2 30 p m and Wednesdays and Fridays at 2 p m Average beds occupied daily, 31, average out-patients seen daily 80 Loan of radium salts for research work by British Empire Cancer Campaign 1925 Post-graduate Courses of Lectures are arranged through the Fellowship of Medicine from time to time

London School of Dermatology, St John's Hospital for Diseases of the Skin, 49, Leicester-square, W C 2 In-patient Department (34 beds) at 262, Uxbridge-road, W 12 —Out-patient Clinics are held daily at 2 and 6 p m (Saturdays 2 p m only), when demonstrations are given on the cases presenting themselves The Chesterfield Lectures, constituting a systematic course in dermatology, are given on Tuesdays and Thursdays at 5 p m, from October to March, by the hon medical staff of St. John's Hospital and the physicians in charge of the Dermatological Departments of the London Teaching Hospitals The lectures are free to those attending the practice of the hospital and to registered medical students At the end of the course an examination is held for the Chesterfield Medal in Dermatology and is open to those who have attended three-quarters of the lectures The Electrical Department is open daily from 2 to 4 p m, except on Thursdays and Saturdays Laboratory Courses in the Pathology and Bacteriology of the Skin can be arranged For further particulars and fees apply to the Dean, Dr A C Roxburgh

London Lock Hospital and Home (Founded 1746) —In the Institution at Harrow-road, W 9, there are 202 beds, and 616 in-patients and 10,334 (attendances) out-patients were dealt with in 1925 In the Male Department and Out-patient Department in Dean-street, Soho, W, there are 40 beds, which during 1925 accommodated 343 patients 90,041 out-patient attendances were made in the various departments Male patients are seen at 91, Dean-street on Mondays and Tuesdays from 1 to 2 p m, and from 6 to 8 p m, on Wednesdays from 6 to 8 p m, on Wednesdays at 1 p m (female patients); on Thursdays, 1 p m (male out-patients), 5 p m (female patients); on Fridays from 5 to 7 p m (male patients), and on Saturdays from 2 to 4 p m (males) Intravenous injections are given at every clinic Female clinics are held at 283, Harrow-road, Paddington, on Mondays at 10 a m Tuesdays, Wednesdays, and Thursdays at 2 to 3 p m, and Saturdays at 2 p m The new female out-patient department is open all day long from 9 a m to 8 p m Irrigations for males are given daily 8 a m to 10 p m For females Mondays, Tuesdays, Wednesdays Thursdays, and Fridays at 11 a m to 1 p m, at 91, Dean-street The Hospital is linked up with the Fellowship of Medicine, and special courses of lectures are held in February, May, and November each year Application for tickets for the special courses should be made direct to the Secretary of the Fellowship Only a limited number of practitioners and students are permitted to attend the Female Lock Hospital, and application should first be made to Major Corbett (Dean) at the Male Lock Hospital between the hours of 11 a m and 5 p m or to the Secretary, Hy J Eason, at the Chief Offices, 283, Harrow-road, W 9

ENGLISH PROVINCIAL ANCILLARY SCHOOLS AND HOSPITALS

Under this heading we include all the hospitals which are recognised by the English Royal Colleges for a part of the required attendance on medical and surgical practice for medical clerkships, and surgical dresserships The list includes nearly every hospital of a general character in the country having more than 150 beds, though occasionally a large hospital is omitted because equally good opportunities are afforded to students at other institutions in its neighbourhood, while a small hospital may be included because no such facilities for study are present elsewhere The list is arranged alphabetically as to the town where the hospital is located Most of the larger general hospitals of the kingdom have already been noticed in connexion with the Universities open daily The practice of the hospital is open to students by arrangement with the medical staff Post-Graduate instruction in Children's Diseases, Lectures and Demonstrations at times that will be notified by the Fellowship of Medicine Applications should be made to the Secretary, Mr. T Glenton-Kerr

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S W.—Clinical Assistants (men or women) are from time to time appointed to the members of the Visiting Staff attending in the Out-patient Department at this hospital, and facilities are given for attendance in the wards

ALEXANDRA HOSPITAL FOR CHILDREN WITH HIP DISEASE (late of Queen-square, W C), Kettlewell Home, Swanley, Kent (in connexion with St Bartholomew's Hospital) —At this hospital cases of hip-disease, spinal caries, and tuberculous diseases of other bones and joints are treated Students who have obtained a recommendation from their teachers can attend to see the practice In-patients, Swanley, Kent, Out-patients, St Bartholomew's Hospital, Fridays, 1 30 P M Apply for particulars to the Dean of the Medical College, St Bartholomew's Hospital, E C 1

ROYAL LONDON OPHTHALMIC HOSPITAL (Moorfields, 1804–1899), City-road, E C 138 beds —This hospital, known as Moorfields Eye Hospital, was moved in 1899 to larger buildings in City-road Last year there were 2571 in-patients, the out-patients were 50,826, of whom 43,881 were new out-patients, and the attendances were 120,316 Operations are performed daily from 10 A M to 1 P M, and four surgeons attend on each day Students are admitted to the practice of the hospital Fee for six months, £3 3s, perpetual, £5 5s Special courses of instruction, which extend over a period of five months, are given by members of the Surgical Staff, beginning in October and March. A composition fee of 24 guineas (£25 4s) will entitle students to a perpetual ticket, and will admit them once to all the lectures and classes and to the examination for the hospital's full certificate A special course is also held in the preliminary subjects (Anatomy, Physiology, and Optics) for the various degrees in Ophthalmology The fee for this course is 12 guineas Students of the hospital are eligible for the offices of house surgeon or clinical and junior assistants. Junior assistants are appointed every three months Any further information will be furnished by Mr A J M Tarrant, Secretary

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street (next door to Charing Cross Hospital), Strand, W C 2 —The hospital contains 42 beds Out-patients, who number over 14,000 annually, are seen daily at 1 P M, and operations are performed in the theatre at 3 P M The practice of the hospital is open to both men and women practitioners and students Clinical evenings, at which interesting cases are shown and discussed, are held at intervals during the year and are open to all practitioners In addition to the ordinary clinical instruction, a systematic course of Lectures and Practical Classes commences in October and May Lectures in this course are given daily (except on Saturday) at 4 30 P M, including all subjects required by candidates for the D O M S, R C P & S Eng, Part II, and practical instruction is given in Operative Surgery and Ophthalmic Pathology and Bacteriology A corneal microscope has been purchased and instruction in the Microscopy of the Living Eye can now be obtained Fees: One month, £1 1s; three months, £2 2s, six months, £3 3s, perpetual, £5 5s, composition fee for perpetual ticket and attendance at classes (except Operative Surgery and Pathology, for which fee in each case is £2 2s per course), £10 10s Students of the hospital are eligible for appointment as house surgeon, assistant house surgeon, refraction assistant, and senior or junior clinical assistant Full details can be obtained on application to the Dean

ROYAL EYE HOSPITAL, St George's-circus, Southwark, S E 1 —There are 40 beds and 2 cots In 1925 there were 56,288 attendances in the Out-patient Department, the new patients being 22,598 The daily average of attendances was 185 patients In-patient admissions numbered 713 Clinical instruction is given to students and post-graduates daily at 2 30 P M, and Lectures, Demonstrations, and Laboratory Classes are arranged in preparation for examinations in Ophthalmology Apparatus has been installed for the Microscopy of the Living Eye Post-graduate students are eligible for appointment as Clinical Assistants and as Refraction Officers Dean Mr J M Bickerton

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd street, St Pancras, W C —This hospital has 40 beds and clinical teaching is given daily. Classes of instruction in the use of the ophthalmoscope, with demonstrations on cases, and also classes on other subjects, to meet the requirements of the Conjoint Board for the D O M S, and of the University of London for the M S in Ophthalmology, are given during the winter months, commencing in October The out-patient work begins at 1 o'clock, and operations are performed daily between 2 and 4 o'clock. This school is recognised as a teaching institution by the Universities of London and Oxford, and the Conjoint Board of the Royal Colleges of Surgeons and Physicians. The school has also undertaken to receive a portion of the pupils of the University College Hospital for the purposes of ophthalmic training The Pathological and Bacteriological Laboratories have been rendered available for the use of any ophthalmic surgeons who desire to send specimens for examination A small fee is charged for a report A Clinical Demonstration is held by members of the staff at the Central London Ophthalmic Hospital at 5 P M on the first Tuesday of every month Students of Medicine and Medical Practitioners are admitted without fee, and notice of their intention to attend should be sent to the Secretary, Mr H R S Druce.

WESTERN OPHTHALMIC HOSPITAL, Marylebone-road, N W —18 beds Out-patient attendances, 30,624 Both In-patient and Out-patient Departments of this Hospital are open to medical graduates. Fees £1 1s per three months. Honorary Secretary H W Burleigh

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, London, W (founded 1857) —The practice of the hospital, both in the wards and out-patient department, is open daily to post-graduates and others, and will be found valuable by those seeking the higher qualifications—e g, M D, M R C P, &c Systematic courses of instruction, with lectures and clinical demonstrations, are arranged during the winter and summer sessions, in addition an intensive course, of a fortnight's duration, takes place in January, July, and October of each year The hospital is fully equipped with all the modern instruments for the investigation of the diseases of the Cardiovascular system, and facilities exist for those requiring practical instruction in Electro-cardiography, X Rays, and other graphic methods Clinical Assistants in the Out-patient Department are appointed from time to time For further particulars apply to the Dean of the Medical School (Dr Parsons-Smith), or to the Secretary, at the hospital

HOSPITAL FOR DISEASES OF THE THROAT, Golden-square, W. (with which is amalgamated the London Throat Hospital Great Portland street) —Clinical instruction in the diagnosis and treatment of disease is given daily in the out-patient department from 2 to 5 P M, and on Tuesdays and Fridays from 6 30 to 9 P M There is an annual out-patient attendance of over 60,000 . Minor operations are performed on Tuesdays, Wednesdays, and Thursdays at 9 30 A M The hospital has been partially closed for some time scheme has been carried out, and £250,000 spent on bringing the accommodation of the institution to a modern standard of efficiency This scheme has included the provision of two modern operating theatres two new wings and self-contained out-patients' department The Children's Hospital has been reconstructed and enlarged by the addition of a third ward at a cost of £14 500. Open-air balconies on all three floors are a feature A central sterilising department has been provided Pathological Laboratories and post-mortem rooms were rebuilt at a cost of £11,000, also an orthopædic out-patient department at a cost of £9500, £5000 of which was provided by the Freemasons of the province as their war memorial The Nurses' Home has recently undergone enlargement by 60 bedrooms and now provides for 160 nurses and staff The 150th anniversary of the Institution has recently passed and a sum of £100,000 was raised in commemoration Funds are being raised for the foundation of a City University, and a splendid site was presented by the late Mr T Fielding Johnson, J P, an ex-chairman of the Royal Infirmary. There are ten resident salaried medical officers at the Infirmary —viz four house surgeons two house physicians, two anæsthetists and two dressers Most of the posts are filled half-yearly and afford exceptional opportunities for post-graduate experience and senior students Dressers are given an honorarium Students are encouraged to make full use of the facilities which exist to gain clinical knowledge in the wards The hon medical and surgical staff are willing to afford instruction in a variety of conditions which an active and well-equipped general hospital in a large commercial centre is called upon to treat A post-graduate course of lectures is arranged annually by the Leicester Medical Association and also clinical classes are held for graduates preparing for the M D and M R C P New accommodation for resident medical officers has been erected

Chairman of the Board Mr J G Pickard Deputy Chairman of the Board Lieut -Col. C F. Oliver, D L, V D. House Governor and Secretary Mr Harry Johnson, from whom information as to prospective vacancies on the Resident Staff may be obtained

A private hospital has been presented to the City by Mr Thomas Fielding Johnson, J P, Treasurer, Royal Infirmary, son of the donor of the University site This magnificent gift comprises three large dwelling houses on an admirable site, which have been reconstructed and re-equipped as a private hospital for the reception of paying patients

Northampton General Hospital, Northampton Two new wings were opened in 1904 and the old buildings entirely renovated and rearranged In 1926 a new Isolation block of 20 beds was opened The number of beds is 221 Non-resident pupils receive and have every opportunity of acquiring a practical knowledge of their profession The fee is £10 10s Pupils can be received at any time. There is an up-to-date Pathological Laboratory, also X Ray and Therapeutic Department and V D Clinic

Norfolk and Norwich Hospital, Norwich —This hospital has at present 325 beds There is a convalescent home at Cromer Students are admitted to the practice of the hospital for a fee of £5 5s for six months Secretary Mr Frank Inch

Nottingham General Hospital —There are at this hospital 317 beds available for medical and surgical patients, and 45 beds are in the detached branch known as "The Cedars" Convalescent Hospital Woodthorpe The Medical and Surgical Staffs consist of 2 Honorary Consulting Physicians, 2 Honorary Consulting Surgeons 1 Honorary Consulting Physician in Venereal Diseases 3 Honorary Physicians, 4 Honorary Surgeons, 2 Honorary Assistant Physicians, 2 Honorary Assistant Surgeons, 2 Honorary Aural Surgeons, 1 Honorary Dermatologist 2 Honorary Anæsthetists, 1 Honorary Surgeon Dentist 1 Honorary Medical Officer in Charge of X Ray and Electro-therapeutic department and 1 Pathologist The Resident Medical Staff consists of 2 House Physicians, 4 House Surgeons, 1 Aural House Surgeon, and 1 Casualty Officer The special departments are the Ear, Nose and Throat, Skin, Dental, Massage and Exercise, X ray, Orthopædic, Electro-therapeutic House Governor and Secretary · Mr P M MacColl

South Devon and East Cornwall Hospital, Plymouth —This hospital has 198 beds (including 14 for venereal diseases in a separate building) Special departments include Pathological, X Ray, Deep-Therapy, Cardiographic, Ultra-Violet Rays, Electro-Therapeutic, and Orthopædic · also medical and surgical out-patients Pensioners are received as in-patients, and are also treated as out-patients

Royal Hospital, Portsmouth (founded 1847) — The number of beds is 180. There are X ray and Massage Departments The hospital is a preparatory school of Medicine and Surgery, the attendance of pupils is recognised by the Examining Boards Particulars of the Secretary at the hospital.

Royal Berkshire Hospital Reading —This hospital, which contains 220 beds was enlarged in 1912, and includes an Out-patient Department, a Casualty Department, an X Ray Department Electro-therapeutic and Massage Department, an Orthopædic Department, a V D. Clinic, a Laboratory. an Eye Theatre, Eye Wards and Motor and Horse ambulances The hospital is approved by the General Nursing Council as a Training School for Nurses. Post-Graduate Lectures are given

Salisbury General Infirmary Salisbury —This hospital contains 142 beds The daily average number of in-patients is 131, number of new out-patients, 4910, number of out-patient attendances, 21,849, including 7065 casualties, 1391 medical and surgical out-patients, 1104 ear nose and throat cases, 1981 ophthalmic cases, 1070 dental cases, 3526 venereal cases, 421 X ray cases and 4930 massage and electrical cases Special features Maternity and antenatal and ophthalmic wards, maternity and child welfare clinic House Governor and Secretary: John S. Birkbeck.

Royal Salop Infirmary, Shrewsbury —This hospital has 130 beds In-patients, 1572. out-patients, 1992, out-patients' attendances, 16,978; accidents and casualties 2496 · dental cases, 344 Secretary: Mr Alfred Sugden

A New Wing for the reception of Women and Children, capable of ultimately accommodating some 40 patients, is now being erected

Royal South Hants and Southampton Hospital, Southampton —This hospital contains 130 beds In-patients 3111, out-patients, 13,868 Secretary Mr. Hy Trusson

Staffordshire General Infirmary, Stafford (established 1766) —This hospital has 87 beds. In-patients 1139, out-patients, 3190 Secretary · Lieut A E Collins

Royal Hants County Hospital, Winchester — This hospital has 158 civilian beds Secretary. Mr. Herbert Maslen.

Wolverhampton and Staffordshire Hospital, Wolverhampton (210 beds) —Special departments for Children, Infectious cases, Gynæcology, Ear, Throat, and Nose Diseases, Electrotherapeutic and X Rays, Artificial Sunlight, Venereal Disease, Pathological

Bath Royal United Hospital, Bath —This hospital contains 212 beds, 72 of which are situated in Combe Park, Bath, and are for *paying patients* only, and possesses X Ray, Massage, Bacteriological Departments, a Pathological Laboratory, and a fine library Secretary Mr J M Sheppard V D Clinics are held on Tuesdays (for women), and on Fridays and Saturdays (for men), from 5 to 6 30 P M, and Ear, Throat, and Nose Clinics on Thursdays, at 4 P M

Bedford County Hospital, Bedford —This hospital has 111 beds, including 15 beds in the paying wards, X Ray and Pathological Departments There is in connexion with the institution a convalescent home (20 beds) at Aspley Heath, nr Woburn Sands The hospital is approved by the University of London for the purposes of the M D and M S Examinations Secretary Mr Beauchamp Wadmore

Bradford Royal Infirmary, Bradford — This hospital contains 215 beds The material passing through the surgical wards consists of major operations, chiefly abdominal, and gynæcological work, and affords excellent facilities for either students or post-graduates There are special clinics for Orthopædic cases Plans for a new hospital of 360 beds have been adopted, and building operations will be commenced as soon as funds will allow

Royal Sussex County Hospital, Brighton (225 beds) —This hospital affords ample facilities for students, possessing a large out-patient department, including Ophthalmic, Dental, Dermatological, Gynæcological, X Ray, and Orthopædic sections, and a well-appointed clinical research and bacteriological department The hospital does not take resident pupils, but out-pupils may attend the practice of the hospital for any period not exceeding two years, on payment in advance of a fee, not exceeding 20 guineas, as the Board of Management shall direct

Kent and Canterbury General Hospital, Canterbury —The hospital contains 116 beds Pupils of the staff are admitted to the practice of the hospital Operations four days of the week There is an Ophthalmic Department with two wards for in-patients, a Venereal Clinic, an Orthopædic Department, &c Secretary, Mr F. P Carroll.

Coventry and Warwickshire Hospital, Coventry (established 1840) —This hospital contains 243 beds Special clinics are held for diseases of the Eyes, Ears, Nose, and Throat, Gynæcology, X Ray and Electrical Treatment There are also V D Clinics A Pathological Department has recently been started Clinical students are received, and there are paying wards

Derbyshire Royal Infirmary, Derby —This hospital contains 330 beds It was founded in 1810, and was entirely rebuilt and enlarged 1892–1915 on the most modern lines at a cost of over £144,000 There is a separate ophthalmic block of 33 beds, a separate children's block of 34 beds, and a special department for gynæcological cases There are four resident house surgeons, a resident house physician, and an assistant house surgeon and casualty officer There are also well-equipped orthopædic, X ray, electrical, and venereal diseases departments. Registered medical students are admitted to witness the medical and surgical practice on payment of such fees as the Board may determine

Royal Devon and Exeter Hospital, Exeter —The hospital contains 225 beds (including special children's wards) and has a good library, museum, post-mortem room, and pathological laboratory Attendance on the practice of this hospital qualifies for all the examining boards There is also a Private Nursing Staff attached to the hospital For particulars as to fees, &c, apply to the Matron A new wing was added in 1897 and the "Victory" wing for the treatment of discharged disabled soldiers and sailors completed and opened in 1922 Arrangements may be made by which gentlemen in practice desiring to increase their qualifications may have the use of the museum and library and other facilities and by which students may attend midwifery

A new Operating Theatre was opened in 1906 (the gift of Mrs Nosworthy of Dawlish, Devon) The Electrical Treatment Department (the gift of Mrs M A Sanders) was opened in 1907 by Lady Duckworth-King This department is now enlarged to meet the ever-increasing work, and now forms one of the most important sections of the hospital A department was opened in 1917 for the treatment of genito-urinary diseases, there are three sessions per week, two for men at 3 P M and 7 P M, and one for women at 3 P M

West of England Eye Infirmary, Exeter — Secretary Mr W W Beer The infirmary contains 64 beds Students of the Exeter Hospital can attend the practice of the Eye Infirmary Patients for the year ending Michaelmas, 1925, 3831 A ward is set aside for newly-born babies suffering from infectious eye diseases Mothers are accommodated with their babies

Gloucestershire Royal Infirmary and Eye Institution, Gloucester —This hospital, which was granted the title of "Royal" on the occasion of King Edward VII 's visit to Gloucester in the year 1909, has 140 beds Secretary F J Symons In-patients, 2014, out-patients, 11,152 An electrical and massage department has been established and venereal clinic opened Also ear, nose, and throat department, X ray department, dental department, and pathological laboratory

North Staffordshire Royal Infirmary, Hartshill, Stoke-on-Trent —The New Infirmary, opened in 1869, is built on the pavilion plan, has accommodation for about 304 patients, including Children's wards, a Bacteriological and Pathological department, and a department for the treatment of Diseases of the Eye, X Ray and Electrical department (including Ultra-Violet Ray Lamps), a department for the treatment of Diseases of the Ear, Nose, and Throat, an Orthopædic department, and Venereal Diseases clinics, so that there are excellent facilities for acquiring a practical knowledge of the profession During the last six years the sum of £35,000 has been spent on new buildings and alterations A new Out-patient department, costing £12,000, a new Children's ward of 30 beds, a new Pathological department, and a second large Operation Theatre are amongst the structural improvements already completed The whole institution is now equipped in a thoroughly up-to-date manner An Electrocardiograph has been recently installed Secretary and House Governor Mr W Stevenson

Hull Royal Infirmary, Hull —This hospital contains 267 beds, and since its establishment in 1782 until the erection of the circular wards in 1907 has undergone steady additions and improvements, including up-to-date Ophthalmic, Radiological, Nose, Throat and Ear, Dental, V D, Violet Rays and Pathological Departments A branch convalescent home at Withernsea, with accommodation for 30 patients, is a special feature of the charity

Leicester Royal Infirmary, Leicester —Instruction in the Infirmary for medical students is duly recognised by the various examining bodies At the General Infirmary there are 333 beds, and at the Children's Hospital in connexion 70, venereal diseases, 17, total 420 beds A reconstruction

Medicine In the departments of the Faculty of Medicine provision is made for research by students of graduate standing In the University laboratories facilities will be provided for candidates for the Degree of Ph D whose applications to engage in research have been accepted by the Senatus

The University of Edinburgh is especially rich in scholarships and prizes in medical subjects Full particulars can be obtained from the Dean of the Medical Faculty

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, Edinburgh —The number of students varies much in the classes and subjects It is within the limit to say that about 1000 students avail themselves each session of the opportunity of attending the school The lectures qualify for the University of Edinburgh and other Universities, the Royal Colleges of Physicians and Surgeons of London, Edinburgh, and Dublin, the Faculty of Physicians and Surgeons of Glasgow, and other Medical and Surgical and Public Boards

The practical classes and laboratories will open and the lectures commence on Oct 5th

In accordance with the statutes of the University of Edinburgh one-half of the qualifying classes required for graduation may be attended in this school The regulations require that the fee for any class taken for graduation in Edinburgh shall be the same as that for the corresponding class in the University The whole education required for graduation at the University of London may be taken in this school

Special courses of instruction for dental students are also included in the curriculum of this school

The minimum cost of the education in this School of Medicine for the Triple Qualification of Physician and Surgeon from the Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, including the fees for the Joint Examinations, is about £170, payment of which is distributed over the period of study.

Post-graduate Courses are conducted in conjunction with the University

Further particulars regarding the school, also its calendar (price 6*d*) may be had on application to the Dean of the School, 11, Bristo-place, Edinburgh.

In connexion with the University and Royal Colleges Post-Graduate Instruction is given each year, chiefly in the Summer Vacation (July–September) Special Courses are arranged for, and particulars may be had on application to the Hon Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh

Clinical Instruction —**ROYAL INFIRMARY** Edinburgh —This hospital has 921 beds and 12 cots for children Courses of Clinical Medicine and Surgery are given by the physicians and surgeons to male and female students Special instruction is given on Diseases of Women, Physical Diagnosis Diseases of the Skin, Diseases of the Eye the Ear, the Larynx and the Teeth Separate wards are devoted to Venereal Diseases, Diseases of Women, Diseases of the Eye, the Ear, Throat and Nose, and the Skin and also to cases of Incidental Delirium or Insanity There is also a large and complete Radiological Department Post-mortem examinations are conducted in the anatomical theatre by the pathologist and his assistants who also give practical instruction in Pathological Anatomy and Histology

The fees for hospital attendance are as follows — Perpetual ticket, in one payment, £12, annual ticket, £6 6s , six months, £4 4s ; three months, £2 2s ; monthly, £1 1s Separate payments amounting to £12 12s entitle the student to a life ticket The appointments are as follows 1 Resident physicians and surgeons are appointed and live in the house free of charge The appointment is for six months, but may be renewed at the end of that period by special recommendation 2 Non-resident house physicians and surgeons and clinical assistants are appointed for six months The appointment may be renewed for a like period by special recommendation 3 Clerks and dressers are appointed by the physicians and surgeons These appointments are open to all students and junior practitioners holding hospital tickets 4. Assistants in the Pathological Department are appointed by the pathologist

Facilities are given in connexion with the Post-graduate Courses arranged by the Edinburgh University and the two Royal Colleges jointly

ROYAL HOSPITAL FOR SICK CHILDREN, Sciennes-road, Edinburgh —This hospital contains 120 beds, and is fitted with every modern improvement A fully equipped out-patient department (medical and surgical) is conducted daily in a building adjoining the hospital Systematic courses of instruction, which qualify for graduation in the Edinburgh University and elsewhere, are given from time to time throughout the year by the staff Students may enter at any time Post-graduate Courses of Lectures are held during the year Full particulars can be obtained from the Registrar at the hospital

EYE, EAR, AND THROAT INFIRMARY OF EDINBURGH (with which is incorporated the Edinburgh Eye Dispensary), 6, Cambridge-street, Lothian-road — Clinical Lectures and Instruction are given in this institution, which is open at 1 o'clock daily for outdoor patients for Eye Diseases , Mondays, Thursdays, and Saturdays at 12 noon, and Tuesdays and Fridays at 4 P M for outdoor Ear, Nose, and Throat Patients Patients whose diseases require operations or extra care are accommodated in the house *(10 beds)* Practical Ophthalmoscopic Classes may be arranged, and Clinical Assistants are appointed from time to time

A post-graduate course in Diseases of the Ear, Nose and Throat is held each academic term, commencing in May, October and January, and continuing for six weeks The next course commences in October The class meets at 5 P M on Tuesdays and Fridays, and the instruction, which is practical, is supplemented by lantern demonstrations Secretary Mr J P Watson, W S , 32, Charlotte-square

UNIVERSITY OF GLASGOW.

The University of Glasgow is both a teaching and a degree-granting body, but admits to graduation only candidates whose preliminary examination and course of study conform to its own regulations Within certain limits instruction given by recognised medical schools and teachers may be accepted, but not less than one-half of the subjects other than clinical must be taken in this or some other recognised university, and at least two years of the course must be taken in Glasgow University Seven degrees, open both to men and women, are conferred M B and Ch B (always conjointly), M D and Ch M ; B Sc in Public Health ; D Sc. in Public Health , B Sc in Pharmacy , and Ph D in the Faculty of Medicine A Diploma in Public Health (D P H) is also granted

All information as regards the extent and standard of the Preliminary Examination may be obtained by application to the Secretary, Scottish Universities Entrance Board, 81, North street St Andrews

For the degrees of M B and Ch B. a curriculum of five years is required after registration as a medical student in the books of the General Medical Council The candidate must, during his curriculum, have attended a course or courses of instruction in each of the following subjects of study, extending over not less than the number of terms specified in each case and including such class examinations as may be prescribed in connexion with

Laboratory, Dentistry, and Electro-cardiographic Installation There is an excellent library The resident officers are a resident surgical officer, resident medical officer, and two house surgeons Pupils are allowed to witness the whole of the practice of the hospital and to be present at operations and have every opportunity of acquiring a practical knowledge of their profession. A course of Practical Pharmacy is given by the dispenser Fees on application Applications should be made to the Honorary Secretary of the Medical Committee In 1925, 3839 in-patients and 30,925 out-patients were treated, 3986 operations were performed in the theatres

WORCESTER GENERAL INFIRMARY, Worcester —This hospital has 132 beds Pupils are taken by members of the Honorary Medical and Surgical Staff Number of operations last year 1222 New X Ray and Electrical and Wolfram Arc Light, Ear, Nose and Throat, and Orthopædic Departments have been erected and are now in use Additional accommodation for the Honorary Staff and Out-patients and also an Outdoor Shelter in connexion with the Children's Ward have been built as a memorial to King Edward VII, and fire-escape staircases recently erected In-patients, 1635, out-patients, 4840 Secretary: Mr E J Holland

YORK COUNTY HOSPITAL, York —This hospital contains 170 beds There are balconies for outdoor treatment, two installations of X ray apparatus, electrotherapeutic and massage department, and clinical laboratory

A Venereal Diseases Clinic is held

SCHOOL OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN (recognised by the UNIVERSITY OF LONDON) —The Pharmaceutical Society conducts examinations for registration as (*a*) Chemist and Druggist and (*b*) Pharmaceutical Chemist For registration as Chemist and Druggist the candidate must pass (i) the Preliminary Scientific Examination (subjects Chemistry, Physics, and Botany), and (ii) the Chemist and Druggist Qualifying Examination (subjects Pharmacognosy, Pharmacy, Pharmaceutical Chemistry, and Forensic Pharmacy) Fee for each examination, 6 guineas, for each subsequent examination after failure, 4 and 6 guineas respectively The advanced or Major Examination (for registration as Pharmaceutical Chemist) includes Botany, Chemistry, Physics, Practical Chemistry, and Materia Medica Fee, 3 guineas The last Major Examination will be held in July, 1928 The Pharmaceutical Chemist Qualifying Examination (for registration as Pharmaceutical Chemist) includes Botany, Chemistry, Pharmacognosy, Pharmacy, and Forensic Pharmacy Candidates must have passed the Preliminary Scientific Examination Fee, 12 guineas for each subsequent examination after failure, 6 guineas Courses of Instruction are given for the Chemist and Druggist Qualifying Examination, for the Major Examination (during the session 1926-27 only), and (two years' course) for the Pharmaceutical Chemist Qualifying Examination in conjunction with University College

An Intercollegiate, two years' course for the Final Examination for the degree of B Pharm of the University of London is also given in conjunction with University College Medical students are admitted to the lectures and laboratory work in any or all the courses Certificates of instruction in the School are received by the Conjoint Board of the Royal Colleges and by the University of London Graduates in Science may carry out the research work necessary for the thesis for the Ph D of the University of London in the Society's Research Laboratories

Application for admission to the school, or for further information, may be made to the Dean, Prof Greenish, 17, Bloomsbury-square, London, W.C 1

II —SCOTLAND

THE UNIVERSITIES.

UNIVERSITY OF EDINBURGH.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh—viz, Bachelor of Medicine (M B), Bachelor of Surgery (Ch B), Doctor of Medicine (M D), and Master of Surgery (Ch M) The degree of Bachelor of Surgery cannot be conferred on any person who does not at the same time obtain the degree of Bachelor of Medicine, and similarly the degree of Bachelor of Medicine is not conferred on any person who does not at the same time obtain the degree of Bachelor of Surgery

No one is admitted to the degrees of *Bachelor of Medicine* and *Bachelor of Surgery* who has not been engaged in Medical and Surgical study for five years

Candidates for the degrees of M B and Ch B must have attended for at least three academic years the medical and surgical practice either of the Royal Infirmary, Edinburgh, or of a general hospital elsewhere which accommodates not fewer than 80 patients and possesses a distinct staff of physicians and surgeons They must have attended courses of instruction in Clinical Surgery and Clinical Medicine each of nine months, and courses of instruction in all the subsidiary subjects They must have attended a course of instruction in Clinical and Practical Midwifery and have personally conducted 12 cases of labour

With respect to the places and institutions at which the studies of the candidate may be prosecuted the following regulations have effect —Three of the five years of medical study must be spent in the University of Edinburgh The remaining two years may be spent in any University of the United Kingdom, or in any Indian, Colonial, or Foreign University recognised for the purpose by the University Court, or in such medical schools or under such teacher as may be recognised for the purpose by the University Court

Women are admitted to graduation in medicine under the same conditions as men

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery is £34 13s, and the proportion of this sum to be paid by a candidate at each division of the examination shall be as follows—viz For the First Division of the Examination (Botany, Zoology, Physics, and Chemistry), £9 9s, for the Second Division (Anatomy and Physiology), £7 7s; for the Third Division (Pathology and Materia Medica and Therapeutics), £6 6s, and for the Final Division (Surgery and Clinical Surgery, Medicine and Clinical Medicine, Midwifery, Clinical Midwifery, and Clinical Gynæcology, and Forensic Medicine and Public Health), £11 11s

Bachelors of Medicine and *Bachelors of Surgery* may proceed to the degrees of *Doctor of Medicine* and *Master of Surgery* after they have spent one year in the medical or surgical wards respectively of a hospital, or the Military or Naval Medical Services, or in scientific work bearing directly on their profession, or two years in practice In each case an examination must be passed and a thesis submitted for approval of the Faculty The fee to be paid for the degree of M D is £21, and the fee to be paid for the degree of Ch.M is £21

Post-graduate Instruction —Courses of instruction are given for the Degrees of B Sc and D Sc in Public Health and for the University Diplomas in Public Health, Tropical Medicine and Hygiene, Psychiatry and Radiology These Diplomas are open to approved registered practitioners as well as to graduates in Medicine and Surgery of the University The University also takes part in the Courses given under the auspices of the Edinburgh Post-Graduate Courses in

Medicine In the departments of the Faculty of Medicine provision is made for research by students of graduate standing In the University laboratories facilities will be provided for candidates for the Degree of Ph D whose applications to engage in research have been accepted by the Senatus

The University of Edinburgh is especially rich in scholarships and prizes in medical subjects Full particulars can be obtained from the Dean of the Medical Faculty

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, Edinburgh —The number of students varies much in the classes and subjects It is within the limit to say that about 1000 students avail themselves each session of the opportunity of attending the school The lectures qualify for the University of Edinburgh and other Universities, the Royal Colleges of Physicians and Surgeons of London, Edinburgh, and Dublin, the Faculty of Physicians and Surgeons of Glasgow, and other Medical and Surgical and Public Boards

The practical classes and laboratories will open and the lectures commence on Oct 5th

In accordance with the statutes of the University of Edinburgh one-half of the qualifying classes required for graduation may be attended in this school The regulations require that the fee for any class taken for graduation in Edinburgh shall be the same as that for the corresponding class in the University The whole education required for graduation at the University of London may be taken in this school

Special courses of instruction for dental students are also included in the curriculum of this school

The minimum cost of the education in this School of Medicine for the Triple Qualification of Physician and Surgeon from the Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, including the fees for the Joint Examinations, is about £170, payment of which is distributed over the period of study

Post-graduate Courses are conducted in conjunction with the University

Further particulars regarding the school, also its calendar (price 6*d*) may be had on application to the Dean of the School, 11, Bristo-place, Edinburgh

---

In connexion with the University and Royal Colleges Post-Graduate Instruction is given each year, chiefly in the Summer Vacation (July–September) Special Courses are arranged for, and particulars may be had on application to the Hon Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh

Clinical Instruction —ROYAL INFIRMARY, Edinburgh —This hospital has 921 beds and 42 cots for children Courses of Clinical Medicine and Surgery are given by the physicians and surgeons to male and female students Special instruction is given on Diseases of Women, Physical Diagnosis, Diseases of the Skin, Diseases of the Eye, the Ear, the Larynx, and the Teeth Separate wards are devoted to Venereal Diseases, Diseases of Women, Diseases of the Eye, the Ear, Throat and Nose, and the Skin, and also to cases of Incidental Delirium or Insanity There is also a large and complete Radiological Department Post-mortem examinations are conducted in the anatomical theatre by the pathologist and his assistants, who also give practical instruction in Pathological Anatomy and Histology

The fees for hospital attendance are as follows —Perpetual ticket, in one payment, £12; annual ticket, £6 6*s* ; six months, £4 4*s* , three months, £2 2*s* , monthly, £1 1*s* Separate payments amounting to £12 12*s* entitle the student to a life ticket The appointments are as follows 1 Resident physicians and surgeons are appointed and live in the house free of charge The appointment is for six months, but may be renewed at the end of that period by special recommendation 2 Non-resident house physicians and surgeons and clinical assistants are appointed for six months The appointment may be renewed for a like period by special recommendation 3 Clerks and dressers are appointed by the physicians and surgeons These appointments are open to all students and junior practitioners holding hospital tickets 4 Assistants in the Pathological Department are appointed by the pathologist

Facilities are given in connexion with the Post-graduate Courses arranged by the Edinburgh University and the two Royal Colleges jointly

ROYAL HOSPITAL FOR SICK CHILDREN, Sciennes-road, Edinburgh —This hospital contains 120 beds, and is fitted with every modern improvement A fully equipped out-patient department (medical and surgical) is conducted daily in a building adjoining the hospital Systematic courses of instruction, which qualify for graduation in the Edinburgh University and elsewhere, are given from time to time throughout the year by the staff Students may enter at any time Post-graduate Courses of Lectures are held during the year Full particulars can be obtained from the Registrar at the hospital

EYE, EAR, AND THROAT INFIRMARY OF EDINBURGH (with which is incorporated the Edinburgh Eye Dispensary), 6, Cambridge-street, Lothian-road —Clinical Lectures and Instruction are given in this institution, which is open at 1 o'clock daily for outdoor patients for Eye Diseases , Mondays, Thursdays, and Saturdays at 12 noon, and Tuesdays and Fridays at 4 P M for outdoor Ear, Nose, and Throat Patients Patients whose diseases require operations or extra care are accommodated in the house (10 beds) Practical Ophthalmoscopic Classes may be arranged, and Clinical Assistants are appointed from time to time

A post-graduate course in Diseases of the Ear, Nose, and Throat is held each academic term, commencing in May, October and January, and continuing for six weeks The next course commences in October The class meets at 5 P M on Tuesdays and Fridays, and the instruction, which is practical, is supplemented by lantern demonstrations Secretary Mr J P Watson, W S , 32, Charlotte-square

---

UNIVERSITY OF GLASGOW

The University of Glasgow is both a teaching and a degree-granting body, but admits to graduation only candidates whose preliminary examination and course of study conform to its own regulations Within certain limits instruction given by recognised medical schools and teachers may be accepted, but not less than one-half of the subjects other than clinical must be taken in this or some other recognised university, and at least two years of the course must be taken in Glasgow University Seven degrees, open both to men and women, are conferred · M B and Ch B (always conjointly), M D and Ch M , B Sc in Public Health ; D Sc in Public Health , B Sc in Pharmacy , and Ph D in the Faculty of Medicine A Diploma in Public Health (D P H) is also granted

All information as regards the extent and standard of the Preliminary Examination may be obtained by application to the Secretary, Scottish Universities Entrance Board, 81, North-street St Andrews

For the degrees of M B and Ch B a curriculum of five years is required after registration as a medical student in the books of the General Medical Council The candidate must, during his curriculum, have attended a course or courses of instruction in each of the following subjects of study, extending over not less than the number of terms specified in each case, and including such class examinations as may be prescribed in connexion with the several courses:—Chemistry (including Organic Chemistry), two terms with Practical Chemistry, one term; Physics (with practical work), one term, Botany (with practical work), one term, Zoology (with practical work) one term; Anatomy and Practical Anatomy, five terms, Physiology and Practical Physiology, three terms, Materia Medica and Therapeutics (together or separately), each subject one term; Pathology and Practical Pathology, three terms, Medical Jurisprudence and Public Health (together or separately), each subject, one term, Midwifery and Diseases peculiar to Women and to Infants, two terms, Surgery, two terms; Medicine, two terms Candidates must attend for at least three years the Medical and Surgical Practice of a recognised hospital accommodating at least 80 patients and having a distinct staff of physicians and surgeons At least nine months' hospital attendance is required on both Clinical Surgery and Clinical Medicine, and the student must have acted for six months as clerk in medical and dresser in surgical wards, and must have had six months' outdoor practice; he must also have attended a course of Mental Diseases and of Practical Pharmacy (25 meetings), must have been properly instructed in Vaccination at a public vaccination station, and must have attended at least 20 cases of labour and the Practice of a Lying-in Hospital The University also requires further study in various special subjects

There are four Professional Examinations, the first comprising Botany, Zoology, Physics, and Chemistry, the second comprising Anatomy and Physiology, the third comprising Materia Medica and Therapeutics and Pathology, and the fourth or final, comprising Medical Jurisprudence and Public Health, Surgery and Clinical Surgery, Practice of Medicine and Clinical Medicine, and Midwifery and the Diseases Peculiar to Women and to Infants

The degrees of M D (Doctor of Medicine) and Ch M. (Master of Surgery) are higher degrees in Medicine and Surgery respectively, and candidates (not under 24 years of age) who have previously obtained the double bachelorship may be admitted to either M D or Ch.M on completing the after course prescribed, including an examination in Clinical Medicine for M D. and an examination in Surgical Anatomy, operations on the dead body, and Clinical Surgery for Ch M.

The higher degree of Doctor of Philosophy (Ph D) is also conferred in the Faculty of Medicine Candidates must already have obtained a degree (or equivalent diploma) from an approved University or College and must prosecute a course of special study or research for two or three years and give evidence of satisfactory progress A thesis must be presented for approval by the Senate on the recommendation of a Special Committee The candidate may be required to undergo an oral or other examination on the subject-matter of the thesis

Fees—The Examination Fees for M B and Ch B are £34 13*s* The class fee in each subject of the curriculum for M B and Ch B is £3 3*s*, £4 4*s*, or £6 6*s*, and the present fee for hospital attendance is £7 There is also an annual Matriculation Fee of £2 2*s* The fee for M D is £21, and for Ch M £21

The great majority of the students take their hospital course at the Western, Royal, and Victoria Infirmary, and at the district hospitals of the Glasgow Parish Council, where clinical instruction is given by professors of the University and others Clinical instruction on Fevers is given at Ruchill and Belvidere Hospitals, while special courses, largely of a practical nature and embracing work in Hospital or Asylum wards, are conducted by University Lecturers on the Ear, the Throat and Nose, Dermatology, Ophthalmology, Venereal Diseases, Tuberculosis, Insanity, and Electro-diagnosis and Therapeutics Queen Margaret College, sometime conducted as a separate institution for the higher education of women, was made over to the University in 1892, and in it certain medical classes for women are conducted under lecturers appointed by the University Court

Post-graduate Medical Teaching—Organised Post-graduate Medical Teaching is available in Glasgow under the auspices of Glasgow Post-Graduate Medical Association This Association is representative of practically all the Teaching Institutions in Glasgow, and its business is managed by a Board of which the chairman is Principal Sir Donald MacAlister, and the vice-chairman Sir Hector C Cameron Weekly demonstrations for practitioners are given throughout the winter and spring, and comprehensive courses of instruction during the summer and autumn There is a General Medical and Surgical Course, during the last two weeks of August and the first two weeks of September This is a whole-time course and includes most of the subjects of interest to the general practitioner The forenoons are occupied with General Medicine and Surgical Diagnosis and Minor Surgery in the Royal Infirmary and in the Victoria Infirmary In the afternoons special subjects are dealt with in some of the special hospitals or in the special departments of the general hospitals—two subjects each afternoon. On the four Saturday forenoons Tuberculosis and Infectious Fevers are demonstrated at Ruchill Fever Hospital Arrangements have also been made whereby a limited number of graduates may become attached to wards or out-patient departments nominally as clinical assistants for definite periods throughout the year As such they work under the direct supervision of the physician or surgeon in charge, and carry out such detailed investigations as directed Further information may be obtained from Dr James Carslaw, Secretary

In this University Bursaries and Prizes to the annual amount of over £1000 are appropriated to students in the Medical Faculty, and there are also several Scholarships and Fellowships which may be held by medical students who have gone through the Arts course A full list will be found in the Calendar

THE ANDERSON COLLEGE OF MEDICINE Dumbarton-road, Glasgow, W 1—Courses are given which qualify for all the licensing boards and for the Universities of Oxford, Cambridge, London, Durham, Edinburgh, and Glasgow (the latter two under certain conditions) Candidates for the Licence in Dental Surgery can obtain the full medical curriculum in Anatomy, Chemistry, Physiology, Surgery, Practice of Medicine, and Materia Medica The courses special to Dentistry are conducted at the Dental Hospital, Glasgow

The buildings are situated in Dumbarton-road, immediately to the west of the entrance to the Western Infirmary, and adjoining the University Extensive accommodation is provided for Practical Anatomy, Practical Chemistry, Practical Botany, Practical Zoology, Practical Physiology, Practical Pharmacy, Operative Surgery, and Public Health Ample provision has also been made for the comfort of students.

Women students are admitted on the same terms as men, and the Carnegie Trust extends its benefactions to students of the College Full particulars may be obtained from Sir W S McCormick, the Carnegie Trust Offices, Merchants' Hall, Edinburgh

Communications relating to the College to be addressed to the Secretary of the Medical Faculty, The Anderson College of Medicine, Glasgow, W 1 Communications relating to the Preliminary Examination in General Education to be addressed to Mr George C Pringle, M A, Educational Institute Office, 47, Moray-place, Edinburgh Communications relating to the Triple Qualification to be addressed to Mr Walter Hurst, Royal Faculty Hall 242, St Vincent-street, Glasgow

The Winter Session will open on Oct 11th

St. Mungo's College and Glasgow Royal Infirmary.—The classes in St Mungo's College qualify for the medical qualifications of the English Scotch, and Irish Conjoint Boards, for the dental diplomas of the English, Irish, and Scottish Boards and under certain conditions, for the various universities, including the University of London Students who have fulfilled the conditions of the Carnegie Trust as regards Scottish birth or extraction, age (16 years), and Preliminary Examination, are eligible for the benefits of this Trust during the whole course of their studies at St Mungo's College The classes are open to male and female students equally The minimum fees for all the lectures, including hospital attendance, necessary for candidates for the Diplomas of the English or Scotch Colleges of Physicians and Surgeons, amount to £120

Further particulars can be obtained from a syllabus which may be procured free on application to the Secretary of the Medical Faculty, 86, Castle-street, Glasgow.

Queen Margaret College (Women's Department of the University)—This is an integral part of the University of Glasgow The classes are taught by professors of the University and other lecturers appointed by the University Court, and it is governed by the University Court and Senate The curricula, regulations, and fees are the same as those of the male students, and the University degrees are open to women on the same conditions as to men. They have access to the University Museum and can borrow books from the University Library, besides having a library *of reference in* Queen Margaret College The School of Medicine is a special feature of the College, and gives full preparation for the medical degrees of the University In July, 1894, for the first time in the history of any Scottish University, women students graduated in medicine in Glasgow University, 682 women have now taken the degree of M B C M or M B, Ch.B of the University of Glasgow and 35 the degree of M.D. The women students attend classes in the various University Buildings at Gilmore-hill and Queen Margaret College the Royal Infirmary the Western Infirmary, and the Victoria Infirmary Facilities for clinical work are given in the Royal, Western and Victoria Infirmaries, in the Maternity, Royal Sick Children's, and other hospitals The Arthur Scholarship is open every third year to students of first year, other Bursaries are open in Arts and Medicine and women are admitted to certain University bursaries and fellowships

The Winter Session will open on Oct 11th.

Royal Infirmary, Glasgow—The ancient connexion between the University of Glasgow and the Royal Infirmary was revived in 1911, when four University Chairs and several University Lectureships were established at the infirmary. New Lectureships in Materia Medica and Pathological Biochemistry have been established this year St Mungo s College, which embraces and continues the original Royal Infirmary *Medical School*, is situated in the infirmary grounds The infirmary has, including the Ophthalmic Department, 700 beds There are special wards for diseases of women, of the throat, nose and ear skin eye burns and septic cases The wards are open to Women Students *At the Outdoor* Department the attendances numbered over 200 000. In addition to the large medical and surgical departments there are departments for special diseases—viz diseases of women, of the throat and nose of the ear, of the eye, of the skin, and of the teeth Five house physicians and 10 house surgeons, who board in the hospital free of charge, are appointed every six months Clerks and dressers are appointed by the physicians and surgeons As a large number of cases of acute diseases and accidents of a varied character are received these appointments are very valuable and desirable There is a modern and fully equipped Electrical Pavilion and year by year the latest and most approved apparatus for diagnosis and treatment has been added Post-graduate Classes are held during August and September in Clinical Medicine Clinical Surgery Clinical Gynæcology Diseases of the Skin, Venereal Disease in the Male, Diseases of the Throat, Nose and Ear and in Diseases of the Eye. Tutorial Classes for senior students are also held in August and September. For information regarding fees and other particulars, application should be made to the Superintendent

Glasgow Western Infirmary.—This hospital adjoins the University of Glasgow. Number of beds 600 Special wards are set apart for Diseases of Women Throat Nose, and Ear, and for Affections of the Skin In the out-patient department there are special clinics for Diseases of Women and for Diseases of the Throat Ear, Teeth, Skin, Venereal Disease, and Electro-Therapeutics The Clinical Courses are given by the physicians and surgeons, each of whom conducts a separate class, and students require to enter their names at the beginning of the session for the class which they propose to attend Special instruction is given to junior students by tutors or assistants, and clinical clerks and dressers are selected from the members of the class All the courses of clinical instruction are recognised by the University of Glasgow and the other boards in the kingdom In the Pathological Department the course is both systematic and practical, also post-graduate courses, and extends through the winter and following summer; these are likewise recognised by the University for graduation. Eighteen resident assistants are appointed annually, without salary, from those who have completed their course The fees are as follows.—For Infirmary Attendance: (*a*) For Perpetual Ticket, £12 12*s*; (*b*) for Single Term Ticket £1 11*s* 6*d* For Courses of Instruction: (*a*) Six Months or Two Terms £5 5*s*; (*b*) Three Months or *One* Term, £2 12*s* 6*d* A Clinical Laboratory has been opened, and students receive laboratory instruction from the lecturer on clinical methods Secretary: J. Matheson Johnston, C A., 87, Union-street

A School of Massage, Medical Electricity, and Swedish Remedial Exercises has been established to qualify for the Certificate of the Chartered Society of Massage and Medical Gymnastics.

Royal Hospital for Sick Children, Glasgow.—This institution which was founded in 1882, consists of (1) a hospital at Yorkhill containing 270 cots built on an elevated and central site close to the University and opened in July, 1914; (2) a Dispensary, or Out-patient Department, in West Graham-street, opened in October, 1888; and (3) a country branch at Drumchapel, Dumbartonshire, containing 30 cots, opened *in 1903* Children treated must not be over 13 years *of* age, nor suffer from infectious diseases There are one professorship and two lectureships in the University of Glasgow in connexion with the hospital one professorship and one lectureship on the Medical Diseases of Infancy and Childhood, and one lectureship on Surgery and Orthopædics in Relation to Infancy and Childhood The Professorship is held by Prof Leonard Findlay, the Visiting Physician, and the lectureships are held one by Dr Geoffrey B Fleming, Assistant Visiting Physician, and the other by one *of* the Visiting Surgeons, Mr Alex MacLennan. The lectures are both systematic and clinical but particularly and chiefly the latter In addition special facilities are given for post-graduate study. *Information* with regard to clinical instruction lectures, and post-graduate study may be obtained from the Medical Superintendent

Glasgow Royal Maternity and Women's Hospital, Rottenrow—The new hospital, which was opened in 1908, is in point of size the largest of its kind in Britain and has accommodation for 114 patients A Maternity and Child Welfare Centre has been established in connexion with the hospital, consisting of a complete In-door and Out-door Antenatal Department and an Infant Consultation Clinic In 1925 5147 normal cases and 2589 abnormal cases were treated by the hospital in the In-door and Outdoor Departments Secretary. Mr. William Guy, 146, Buchanan-street Full particulars as to fees and accommodation may be obtained from the House Superintendent at the hospital.

Royal Samaritan Hospital for Women, Glasgow —This hospital, founded in 1886, is the largest purely gynæcological hospital in Great Britain, possessing as it does, 90 beds, which will be increased to 160 when building extensions are completed It offers excellent facilities for clinical instruction in the diseases peculiar to women, treating in the wards and in the out-patient department from 5000 to 6000 cases per annum Lectures and clinical demonstrations are given by members of the surgical staff to students and to post-graduates; and the hospital is represented on the Board of the Glasgow Post-Graduate Medical Association formed for co-ordinating post-graduate medical teaching in all the hospitals University Lectureship associated with the Hospital The Royal Samaritan Lectureship in Gynæcology Lecturer, David Shannon, M B, Ch B., L M, T D For further information application may be made at the Hospital, or to T Mason Macquaker, M A, B L, Secretary, 149, St Vincent-street Glasgow

Glasgow Lock Hospital, 41, Rottenrow, Glasgow This hospital was founded in 1805 for the treatment of females suffering from Venereal Diseases It contains 80 beds There is also a Labour Ward, and a well-equipped Dispensary for out-patient attendances There is now a Lecture Room and Laboratory, equipped with the most modern appliances, for the accommodation of Students who receive their clinical instruction there The number of students attending these classes in 1925 was 183, Post-graduate classes are also held During the course of the past year the hospital has been completely renovated and modernised In 1925 there were 403 in-patients, and 15,318 attendances were made by out-patients at the Dispensary The Secretary and Treasurer is Mr J Neilson Gray, LL B, 65, Bath-street, Glasgow

Glasgow Ophthalmic Institution, 126, West Regent-street, and 131, Wellington-street (30 beds and six cots) —Clinical and systematic course of lectures for students during the winter and summer sessions In-patients, 867, out- or dispensary patients, 15 976, daily average of attendances, 160, total attendances, 48,759 Operations on Wednesdays and Fridays This institution is administered by the Royal Infirmary Secretary and Cashier R Morrison Smith, C A, 135, Buchanan-street, Glasgow

Glasgow Eye Infirmary, Berkeley-street and Charlotte-street —This institution, the largest of its kind in Scotland, was founded in 1824. The average number of new patients for the last ten years has been 26,010 and the total number of cases in 1925 was 67,577 The wards and dispensary are recognised by the University of Glasgow for the purpose of instruction in ophthalmology for graduation in medicine, and by the Royal Colleges of Physicians and Surgeons of England for the Diploma in Ophthalmic Medicine and Surgery. A Venereal Centre has been established, and a Branch Dispensary has been opened in Clydebank. Secretary and Acting Treasurer Harold John Black, 88, West Regent-street, Glasgow The medical session opens in October Post-graduate Classes are being held

Glasgow Ear, Nose, and Throat Hospital, 306, St Vincent-street —15 beds New patients, 7202 Attendances at out-patient department, 23,301 Admitted to in-door department, 480 Clinical instruction is given in Diseases of the Ear, Nose, and Throat Post-Graduate Courses are held during the year Secretary D N. Mackay, 144, St Vincent-street, Glasgow

UNIVERSITY OF ST. ANDREWS (UNITED COLLEGE ST. ANDREWS AND UNIVERSITY COLLEGE, DUNDEE)

Four Degrees in Medicine and Surgery are conferred by the University of St Andrews—viz, Bachelor of Medicine (M B), Bachelor of Surgery (Ch B), Doctor of Medicine (M D), Master of Surgery (Ch M), a Diploma in Public Health, and Diploma in Dental Surgery (L D S)

The Preliminary Examination is either the Arts or the Pure Science Preliminary Examination The Arts Preliminary includes English Latin or Greek, and Mathematics, and a fourth subject which may be a foreign language or Dynamics In the Science Preliminary Examination French or German may be substituted for Latin or Greek and Mathematics must be on the higher standard Otherwise the subjects are the same as the Arts Preliminary Examination A degree in Arts or in Science in any of the Universities of the United Kingdom and in some colonial and foreign universities shall exempt from the Preliminary Examination On Feb 1st, 1927, new Regulations come into force giving a wider choice in subjects of the Preliminary Examination The Preliminary Examination for graduation in Medicine and Surgery, Arts or Science, of the University of St Andrews is accepted as equivalent to the Registration Examination required by the General Medical Council (the certificate to include the required subjects) Also the Final Examination for a degree in Arts or Science and the Final Examination for the Diploma of L L A

Degrees of Bachelor of Medicine and Bachelor of Surgery—A pre-registration examination is held in Physics and Chemistry Candidates must have been engaged in medical study for at least five years after registering as a medical student In each of the first four years the candidate must have attended at least two courses of instruction in one or more of the subjects of study specified below, each course extending over a session of not less than five months, either continuous or divided into two terms, or, alternatively, one such course along with two courses, each extending over a session of not less than two and a half months During the fifth or final year the candidate shall be engaged in clinical study for at least nine months at the Infirmary of Dundee or at one or more of such public hospitals or dispensaries, British or foreign, as may be recognised for the purpose by the University Court The candidate must have received instruction in each of the following subjects of study, including such examinations as may be prescribed in the various classes—viz, Anatomy, Practical Anatomy, Chemistry, Materia Medica, Physiology, or Institutes of Medicine, Practice of Medicine, Surgery, Midwifery and the Diseases peculiar to Women and Infants Pathology, Bacteriology, Practical Chemistry, Physics (including the Dynamics of Solids Liquids, and Gases, and the Rudiments of Sound, Heat, Light, and Electricity), Elementary Botany, Elementary Zoology, Practical Physiology, Practical Pathology, Forensic Medicine, and Public Health The candidate must have attended for at least three years the Medical and Surgical Practice either of the Infirmary of Dundee or of a General Hospital elsewhere which accommodates not fewer than 80 patients and possesses a distinct staff of physicians and surgeons and is recognised for the purpose by the University Court Additional subjects of study are Practical Pharmacy, Mental Diseases, Practical Midwifery, Operative Surgery, Vaccination, Children's Diseases, Fevers, Ophthalmology, Diseases of the Ear, Throat, and Nose, Anæsthetics, Dermatology and Post-mortem Examinations

With respect to the places and institutions at which the studies of the candidate may be prosecuted the following regulations shall have effect —1 Two of the five years of medical study must be spent in the University of St Andrews 2 The remaining three years may be spent in any University of the United Kingdom or in any Indian, Colonial, or Foreign University recognised for the purpose by the University

Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University Court Women are admitted to graduation in Medicine, subject to certain provisions

Professional Examinations for the Degrees of Bachelor of Medicine and Bachelor of Surgery —Each candidate will be examined both in writing and orally, and also clinically where the nature of the subject admits, in the following divisions—viz , first, in Botany, Zoology, Physics, and Chemistry , second, in Anatomy and Physiology , third, in Materia Medica, Pathology and Bacteriology Forensic Medicine and Public Health , and fourth, in Surgery, Clinical and Operative Surgery, Practice of Medicine and Clinical Medicine, and Midwifery and Gynæcology (Systematic and Clinical) The combined fee for tuition and clinical tuition is £182, payable in five annual instalments Additional fees are required for hospital ticket, midwifery cases, laboratory apparatus

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery shall be 33 guineas, and the proportion of this sum to be paid by a candidate at each division of the examination shall be regulated from time to time by the University Court The fee to be paid for the degree of Doctor of Medicine shall be 20 guineas, and for the degree of Master of Surgery 20 guineas The whole medical curriculum can be taken in University College, Dundee, or the first two years in United College, St Andrews For further particulars and details as to scholarships and bursaries application should be made to Prof Charteris, Dean of the Medical Faculty, University College, Dundee

UNIVERSITY COLLEGE, Dundee —This College is one of the constituent colleges of the University of St Andrews In the Conjoint Medical School there are spacious and well-equipped laboratories The complete medical curriculum can be taken in Dundee, beginning in University College (first two years) and continuing in the Conjoint Medical School For classes fees, &c , see under University of St Andrews

ROYAL INFIRMARY, Dundee —The Infirmary contains 461 beds In addition to the ordinary Medical and Surgical Wards, there are special departments for Midwifery (In- and Out-door), for Diseases of Women, of Children, of the Eye, of the Ear, Nose and Throat, and of the Skin , and for Clinical Pathology, Radiology, Electro - therapeusis, and Electro-cardiography An extension providing for a new X Ray Department and Massage Department and for additional Operation Theatre accommodation has been opened recently Clinical teaching is given to male and female Students by the Honorary Staff, post-mortem examinations are conducted by the pathologists All courses of instruction are recognised by the University of St Andrews and the other Boards of the United Kingdom Nine Resident Medical Officers are appointed every six months Clinical clerks and dressers are attached to the Physicians and Surgeons , and Students are appointed as assistants in the pathological department The fees for Hospital attendance are as follows. For Perpetual Ticket, £12, or if paid in instalments, £12 12*s* , Ticket for 12 Months, £4 4*s*. ; Ticket for 3 Months, £1 11*s* 6*d* Further information may be obtained from the Medical Superintendent

---

UNIVERSITY OF ABERDEEN

The University of Aberdeen grants four degrees in Medicine and Surgery—viz , Doctor of Medicine (M D), Master of Surgery (Ch M), Bachelor of Medicine (M B), and Bachelor of Surgery (Ch B) The Degree of Doctor of Philosophy (Ph.D) is also granted in the Faculty of Medicine

Degrees of M B and Ch B —Before commencing his medical studies each student must comply with the following regulations (1) Every Candidate desiring admission to the Faculty of Medicine must be in possession of the necessary " Certificate of Fitness " issued and attested by the Scottish Universities Entrance Board, 81, North-street, St Andrews Forms on which to make application for this Certificate may be obtained from the Secretary to the University of Aberdeen

Candidates, therefore, before entering on the curriculum for the Degree must have passed the Preliminary Examination or hold a qualification recognised as exempting from such examination (3) Have attained the age of 17 years (4) That they have passed the Pre-registration Examination in Physics and Chemistry

Regulations for Pre-registration Courses in Physics and Chemistry have been made by the University in accordance with which the appropriate exemptions can be granted to students

The curriculum for the degrees extends over a period of five years, during which attendance is required in the following subjects Botany, Zoology, Physics, Chemistry (Systematic and Practical), Anatomy (Systematic and Practical), Physiology (Systematic and Practical), Materia Medica and Therapeutics, Practical Pharmacy, Pathology (Systematic and Practical), Medical Jurisprudence, Public Health, Surgery, Medicine, and Midwifery

Candidates must attend for at least three years the medical and surgical practice of a recognised hospital , they must have attended courses of at least nine months in clinical medicine and clinical surgery, and have acted as clerk in the medical and dresser in the surgical wards of a hospital Attendance is required on the practice of a dispensary or the out-practice of a hospital and also on courses in Mental Diseases Fevers, Ophthalmology, Post-mortem Examinations, Venereal Diseases, Tuberculosis, and other special subjects The candidate is also required to have been properly instructed in Vaccination and to have attended at least 20 Midwifery cases

The cost, including Matriculation, Class, Degree, and Hospital Fees, for the whole curriculum leading to the Degrees of M B and Ch B is approximately £240

Besides the Royal Infirmary, students have the opportunity of attending the following institutions : City Fever Hospital, Sick Children's Hospital, General Dispensary, and Lying-in and Vaccine Institutions, Royal Lunatic Asylum, Ophthalmic Institutions, &c

Degrees of M D and Ch M —Candidates for either of these degrees must already hold the degrees of M B and Ch B of Aberdeen A thesis has to be presented and an examination has to be passed in Clinical Medicine (or in some special Department of Medical Science) or Clinical Surgery, as the case may be

Degree of Ph D —For this degree candidates must pursue a course of special study or research during a period of nine academical terms as Research Students in the University of Aberdeen or in any College or Institution that may be affiliated thereto A Thesis must be presented for approval The fee is £10 10*s*

A diploma in Public Health is granted by the University to graduates in Medicine of a University in the United Kingdom, after a special examination.

Application for further information should be addressed to the Secretary of the Medical Faculty

Scholarships and Prizes —In the Faculty of Medicine of the University of Aberdeen there are the following Bursaries, Scholarships, and Prizes —Bursaries about 15 Bursaries (competition and presentation) are open each year, of £15 to £30 per annum in value, most of them being tenable for three years Scholarships · five Post-Graduate Scholarships, value £36 to £160 per annum Prizes and Medals 15 Gold Medals and Prizes for proficiency in special departments, &c

Clinical Instruction is given in the Aberdeen Royal Infirmary (270 beds) by the physicians and surgeons on the staff

ABERDEEN ROYAL MENTAL HOSPITAL.—Contains, with hospital attached to main institution and agricultural branch about 950 beds Clinical instruction is given to students during three months in summer. Clerk and Treasurer, Mr. A. Scott Finnie, 343, Union-street, Aberdeen

SCOTTISH MEDICAL CORPORATIONS GRANTING DIPLOMAS.

SCOTTISH CONJOINT BOARD

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH, ROYAL COLLEGE OF SURGEONS OF EDINBURGH, ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

These Colleges have made arrangements by which, after one series of examinations, held in Edinburgh or Glasgow, or both, the student may obtain the diplomas of the three Bodies

The three Bodies grant their Single Licences only to candidates who already possess legal qualifications in Medicine or Surgery Copies of the Regulations for the Single Licence of any of the Bodies may be had on application to the respective secretaries

Professional Education —The candidate must produce certificates or other satisfactory evidence of having attended the following separate and distinct courses of instruction Physics, three months, Elementary Biology, three months; Chemistry, six months; Practical or Analytical Chemistry, three months, Anatomy, during at least six months, Practical Anatomy, twelve months, Physiology, six months; Practical Physiology, three months, Materia Medica, three months, Pathology (including Practical Pathology), nine months, Practice of Medicine, six months; Clinical Medicine, nine months, Principles and Practice of Surgery, six months; Clinical Surgery, nine months; Midwifery, three months, Gynæcology, one course of not less than 13 meetings, Diseases of Children, one course of not less than 13 meetings, Medical Jurisprudence and Public Health, three months The certified attendance on lectures, demonstrations, and practical work must not be less than three-fourths of the total number of roll-calls Every student undergoes a course of Practical Midwifery, but before attending at labours he is required to attend a course of lectures on Surgery and Midwifery and to hold the offices of Clinical Medical Clerk and Surgical Dresser. He must also attend for two and a half months instruction in Practical Pharmacy; the certificate to be signed by the teacher, who must be a member of the Pharmaceutical Society of Great Britain, or the superintendent of the laboratory of a public hospital or dispensary, or a registered practitioner who dispenses medicines to his patients, or a teacher of Practical Pharmacy.

The student must attend for 27 months the Medical and Surgical practice of a public general hospital containing on an average at least 80 patients available for clinical instruction and possessing distinct staffs of physicians and of surgeons He must act as Surgical Dresser and Medical Clinical Clerk for not less than six months in the wards in each case, and receive practical instruction in administration of anæsthetics He must attend for six months the practice of a public dispensary especially recognised by any of the above authorities, or the out-patient practice of a recognised general hospital This attendance should be made after the student has passed the First and Second examinations

Candidates are also required to attend the following courses Diseases and Injuries of the Eye, three months, Insanity, three months; Infectious Diseases, three months. Gynæcology, three months, Diseases of Children, three months

The curriculum lasts for five years, the fifth year being devoted to clinical work

There are four professional examinations:—

First Examination includes Physics, Chemistry, and Elementary Biology.

Second Examination includes Anatomy and Physiology and Histology; and candidates may be admitted to this examination at the end of the second year of medical study.

Third Examination includes Pathology and Materia Medica with Pharmacology

Final Examination —The Final Examination shall not be taken earlier than the end of the fifth year of study and shall embrace the following subjects — Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine, Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eye, Midwifery and Diseases of Women, and, if not passed previously, Medical Jurisprudence and Public Health, but it is optional to candidates who have passed the Third Examination to be admitted to the subject of Medical Jurisprudence and Public Health on lodging certificates of having attended the necessary course in that subject at any time, but the subjects of Medicine, Surgery, and Midwifery shall be taken together at any time after the end of the fifth Winter Session, provided that a period of 24 months has elapsed since passing the Second Examination All candidates shall be subjected, in addition to the written and oral examinations, to clinical examinations in Medicine and Surgery, which shall include the Examination of Patients, Physical Diagnosis, the Clinical use of the Microscope, Examination of the Urine and Urinary Deposits, Surgical Appliances, Bandages, Surface Markings, &c The fees payable for the Final Examination shall be—for the whole examination, £15, for re-entry after rejection, £5, and for the subjects of Medical Jurisprudence and Public Health when taken separately, £5, with £3 for re-entry in that subject

There are four periods of examination annually During the ensuing period thrice in Edinburgh and once in Glasgow, in 1926–27 The Registrar in Edinburgh is Mr D L Eadie, 49, Lauriston-place, and the Registrar in Glasgow, Mr Walter Hurst, 242, St Vincent-street, to whom fees and certificates must be sent for the respective examinations, and from whom particulars of fees can be obtained

For students registered with the General Medical Council after Jan 1st, 1923, more extensive Regulations are in force, and candidates applying for Regulations should state date of registration.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH THE MEMBERSHIP AND FELLOWSHIP

In addition to the diplomas granted by the Scottish Conjoint Board the Royal College of Physicians grants its Single Licence to candidates already possessing legal qualifications for professional practice

The Royal College of Physicians of Edinburgh grants a *Membership* and a *Fellowship*

Membership —A candidate, who must be a Licentiate of a British or Irish College of Physicians, or a graduate in medicine of a University, approved by the Council, and 24 years of age, is examined in medicine, therapeutics, and in any branch of the departments of medicine specially professed, such as general pathology, psychology, public health obstetrics, gynæcology, diseases of children, tropical medicine, or medical jurisprudence The fee for the Membership is £36 15*s*, 15 *guineas* of which will be returned to any successful candidate who was already a Licentiate of the College at the time of qualifying for the Membership.

Fellowship —The Fellows are selected from the ranks of the *Members* The fee is £64 18*s*

ROYAL COLLEGE OF SURGEONS OF EDINBURGH: THE FELLOWSHIP.

The Royal College of Surgeons of Edinburgh also admits to the examination for its Single Licence any candidates who hold a Diploma in Medicine of any British, Indian, or Foreign university or of any British College of Physicians, or of the Society of

Apothecaries of London or Apothecaries' Hall Dublin, granted under the provisions of the Medical Act, 1886, whose preliminary examination and course of professional study is proved to be sufficient to fulfil the requirements of the College, or to those who have passed a full examination for any of the above. Female practitioners are admitted to the Licence of the College and also to the Fellowship, and the regulations apply to practitioners of either sex.

The Royal College of Surgeons of Edinburgh grants a diploma of Fellowship after examination to the holders of the surgical degrees or diplomas of such British examining bodies, as well as of the holders of such surgical degrees of the Universities of Canada, Australia, New Zealand, and the Indian Empire as are recognised by the College.

The Fellowship.—Candidates for the examination must be 25 years of age and must have been engaged in practice for at least two years. The examination is of a practical nature, partly written and partly viva voce, and must include surgery and surgical anatomy, operative surgery, and clinical practice. One optional subject must also be taken, the range of these specialisms covering nearly every branch of medicine. Candidates are not allowed to appear for more than three times at the examinations. The fee to be paid on entering for examination for Fellowship is £45, £10 of which is remitted to those who already hold the Licentiateship of the College. Candidates rejected at the examination obtain repayment of fee less £10 retained for examination expenses. One month's notice of intention to appear for examination must be given by the candidate to Mr. D. L. Eadie, 49, Lauriston-place, Edinburgh, clerk to the College, together with credentials signed by two Fellows of the College, one of whom must be a resident in Edinburgh, otherwise a special application with six testimonials must be made to the President and the Council of the College.

THE ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

Like the preceding corporations, the Royal Faculty of Physicians and Surgeons of Glasgow grants a Fellowship and a Licence to be held separately.

Fellowship.—The Fellowship of the Faculty is granted after examination in medicine or surgery, together with an optional subject, which may be anatomy or physiology or be selected from any special branch of medicine or surgery. Fourteen days' notice must be given by the candidate of his intention to present himself to Mr. Walter Hurst, the Faculty Hall, 242, St. Vincent-street, Glasgow. The fee for the Fellowship is £50, £10 of which sum is returned to any successful candidate who already holds the Licence of the Faculty. In certain circumstances Fellows may be elected as a mark of distinction.

Licence.—The Licence of the Royal Faculty is granted as a separate qualification to qualified practitioners in Medicine after examination in surgery, including surgical anatomy and clinical surgery. The fee is 15 guineas.

SCOTTISH PROVINCIAL ANCILLARY SCHOOLS AND HOSPITALS

The hospitals which are recognised by the Scottish Conjoint Board as places where professional study for their diplomas can be pursued are all those institutions which feed the medical faculties of the universities. In addition the Scottish Boards recognise all the places which are recognised by the English Conjoint Board (see p. 434) and the Irish Conjoint Board (see p. 455).

III.—IRELAND

THE UNIVERSITIES

UNIVERSITY OF DUBLIN, TRINITY COLLEGE (SCHOOL OF PHYSIC)

Matriculation.—In order to join the School of Physic students pass a matriculation examination. University students take the Entrance of Trinity College and a Junior Freshman Term or a special Medical Preliminary. Extern Students, any examination recognised by the General Medical Council. The winter courses begin on Oct. 1st.

Pre-registration Examination in Elementary Physics and Chemistry.—Before beginning the five years' Medical curriculum students must pass an examination in elementary Physics and Chemistry. This examination is held at the end of September, in January, in March, and in June. Courses in preparation for it may be taken in the School of Physic. On passing this examination Medical students should register as such with the General Medical Council.

Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.).—Candidates for these degrees must be of B.A. standing and must be for at least five academic years on the books of the Medical School, reckoned from the date of registration. The Arts course may be taken concurrently with the Medical course, and the B.A. degree need not be taken before the final medical examinations but the Medical degrees are not conferred without the Arts degree. The following courses must be attended:—(1) Lectures—Botany, Zoology, Physics and Practical Physics; Systematic, Descriptive and Applied Anatomy; Chemistry and Practical Chemistry; Histology, Physiology, Practical and Applied Physiology; Practice of Medicine; Midwifery and Gynæcology, Pathology and Bacteriology; Materia Medica and Therapeutics; Medical Jurisprudence and Hygiene; Surgery and Operative Surgery; (2) three courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other recognised Hospital; (3) Practical Vaccination, one month's instruction; (4) Mental Disease, three months; (5) Practical Midwifery with Clinical Lectures, including not less than 20 personally conducted cases, six months; (6) Ophthalmic Surgery, three months. Three groups of examinations have to be passed: Preliminary Scientific Examination, including Physics and Chemistry, Botany, and Zoology. The Intermediate Medical, Part I., including Anatomy, Physiology, and Organic Chemistry; and Part II., including Applied Anatomy and Applied Physiology; and the Final Examination, which is divided into Part I., Materia Medica and Therapeutics, Hygiene and Jurisprudence, Pathology and Bacteriology; and Part II., Medicine, including Clinical Medicine and Mental Diseases; Surgery, including Operative and Ophthalmic Surgery; Midwifery and Gynæcology. Part I. may be passed in the fourth year and Part II. completed at the end of the fifth.

Doctor in Medicine.—A Doctor in Medicine must have passed all the qualifying examinations and must be a B.A. of three years standing. He must also submit a thesis and pass an Examination before the Regius Professor of Physic.

Master in Surgery.—A Master in Surgery must be a Bachelor in Surgery of the University of Dublin of not less than three years' standing, and must produce satisfactory evidence of having been engaged for not less than two years from the date of his registration in the study, or study and practice, of his profession. He must then pass a special examination.

Master in Obstetric Science.—A Master in Obstetric Science must be a Bachelor in Obstetric Science of two years' standing and must produce evidence of having been engaged in the study of Obstetric Medicine and Surgery during two years He is then required to pass a special examination

Diploma in Gynæcology and Obstetrics—A post-graduate diploma is conferred upon registered medical practitioners who take a six months' course at the Rotunda Hospital or other recognised institution, a six months' course in Trinity College, and then pass a special examination The minimum time required for the complete course is nine months

Bachelor in Dental Science and Master in Dental Science—The regulations under which these degrees are awarded can be obtained by application to the Registrar of the School of Physic

All Degrees and Courses of Instruction are open to women students

Post-graduate Instruction—Arrangements have been made, with the approval of the Board of Trinity College, for a post-graduate course of instruction at the School of Physic during the autumn from Monday, Sept 13th, to Saturday, Oct 2nd Members of the class can reside in college rooms and dine on commons

Clinical Instruction—The hospital facilities for clinical instruction available in Dublin will be described below

NATIONAL UNIVERSITY OF IRELAND

Matriculation—All students intending to proceed to the medical degree of the University of Ireland must pass a matriculation examination, the examination taking place in June and September in Dublin and at certain local centres All students must pass in five subjects (three of which must be Irish, English, and mathematics) All students must pass in Irish except students not born in Ireland, and other students whose home residence shall have been outside Ireland during the three years immediately preceding their matriculation, but all such students will be expected to attend a course of instruction in Irish Literature and History prior to obtaining any degree in the University The following are the subjects for examination —1 Irish 2 Latin or Greek 3 French, German, Italian, Spanish, Portuguese, Welsh, or any other modern language approved by the Senate 4 English 5 Mathematics 6 Latin, Greek, French, German, Welsh, Spanish, Italian, Portuguese, or any other modern language approved by the Senate, History, Geography, Applied Mathematics, or Physics as an alternative, Chemistry, Botany, and for women candidates only, Physiology and Hygiene. Students entering for degrees in Medicine or Dentistry, if already registered by the General Medical Council, must take Irish, Latin, English, Mathematics, and a fifth subject

The medical degrees granted are —

M B, B Ch., and B A.O, and M D, M.Ch, and M A O, Ph.D—Printed forms of application for admission to any medical examination may be had from "The Registrar, The National University of Ireland, Dublin"

The Constituent Colleges of the National University of Ireland at which the full curriculum for medical degrees can be obtained are University College, Dublin; University College, Cork; and University College, Galway.

UNIVERSITY COLLEGE, DUBLIN *—The University and the College were created by the Irish University Act, 1908, and by Charters issued in December, 1908 Former students of the Cecilia-street School of Medicine who graduated in the Royal University may become graduate members of the new College The constitution of the College, like that of the Constituent Colleges of Cork and Galway, provides for a governing body, an academic council consisting of professors and coöpted lecturers, a body of graduate members, and a body of student members matriculated in the University The first professors were appointed by the Dublin Commissioners Irish Universities Act, 1908

Matriculation—Almost all the students of the College are matriculated students of the National University of Ireland.

Universities Examinations in Medicine—The First Examination includes Applied Physics, Applied Chemistry, Botany, Zoology, and Applied Biology The examination may be taken in two parts Part I, Physics and Chemistry, Part II, Botany and Zoology Honours may be obtained only when both parts are taken as one examination The Second Examination includes Anatomy and Physiology Both must be passed at the same time The Third Examination includes Pathology, Medical Jurisprudence and Hygiene, and Materia Medica

Degrees of M B, B Ch, and B A O—The Examination in Medicine, Midwifery, Surgery, and Ophthalmology includes both the theoretical and the clinical branches No student can enter for the M B., B Ch, or B A O until the end of the fifth year when the curriculum has been completed The degree of M D may be obtained either by examination or on published work

Fees—The fees for Courses may be obtained on application to the Registrar for the College publications Information concerning these, and the scholarships and exhibitions of the College can be obtained from the Dean of the Faculty, Prof E P McLoughlin

UNIVERSITY COLLEGE, CORK THE SCHOOL OF MEDICINE —The building is provided with a very large, well-ventilated dissecting room supplied with electric light, with physiological, toxicological, pathological and pharmaceutical laboratories, materia medica, anatomical and pathological museums, as well as a collection of surgical and obstetrical instruments and appliances There are well-appointed physical, chemical, and biological laboratories, a large natural history museum in the adjoining building, and part of the College ground is laid out as a botanical garden The plant houses are well filled with plants and are open to the students in the class of Botany The Library contains about 70,000 volumes and is open daily during term time to students The Medical Museum occupies a large room erected at the northern end of the medical buildings There are Students' Clubs for men and women students of the College and various athletic clubs, the last of these holding a public meeting yearly in the Mardyke grounds

All students who have been admitted as matriculated students are required to attend before the President and sign the Roll of Matriculated Students Students who are candidates for degrees in the National University of Ireland must have passed the Matriculation Examination of that University or other recognised examination, and medical students must have passed a preliminary examination recognised by the General Medical Council For information as to the conditions and courses of the Matriculation Examination application may be made to the Registrar, National University, Dublin

Admission of Medical Students—Students in the Faculty of Medicine who have passed the First Professional Examination of the Conjoint Examinations of the Royal College of Physicians and the Royal College of Surgeons in Ireland, or of the Royal College of Physicians and Royal College of Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, or of the Royal College of Physicians, London, and Royal College of Surgeons, England, may be admitted to the rank of second-year students on making application to the Council and submitting a certificate of having passed the examination Similarly, students who have passed the Second Professional Examination of the same Colleges may be admitted to the rank of third-year students; and those who have passed the Third Professional Examination of the Dublin Colleges, or of the Edinburgh Colleges and Glasgow Faculties, may rank as fourth-year

---

* No returns

Residence of Students —There is no accommodation for the residence of students within the College, but students not living at home, or with relatives or friends, sanctioned by their parents or guardians, are required to live in a hostel or in recognised lodgings, a list of which can be obtained from the Secretary All students are required to register their addresses each session in the book kept for that purpose in the hall porter's office, and to notify immediately to the Registrar any change of address during the session The Honan Hostel, adjoining the College, is equipped by private endowment A number of sets of rooms, together with recreation and common rooms, are provided for lay students who may desire to live there For full particulars apply to the Warden The Ursuline Convent, Blackrock, has a house of residence, quite separate from their Secondary School, for Catholic women students

Clinical Instruction —Students may attend the South Infirmary, Cork North Charitable Infirmary, the Mercy Hospital, the Cork District Lunatic Asylum, the Victoria Hospital for Diseases of Women and Children, the County Lying-in Hospital, the Cork Maternity, Fever, the District, and Ear, Eye, and Throat Hospitals

Complete information with regard to class fees, scholarships, and prizes can be obtained from the Dean of the Medical Faculty, Professor A E Moore

*South Charitable Infirmary and County of Cork General Hospital** (100 beds) —Clinical instruction is given daily in the wards Special instruction on Diseases of Women and Children will be given in the special wards for such cases Fee for nine months, £12 12*s* ; for six months, £8 8*s* , for three months, £4 4*s* Two resident pupils will be appointed by competitive examination

Cork North Charitable Infirmary and County and City of Cork General Hospital (121 beds) —Clinical instruction is given daily in the wards by the physicians and surgeons to Senior students four days weekly and to Junior students on two days weekly Medical and Surgical classes are also held daily in the extern department Fee for 12 or nine months £12 12*s* , for six months £8 8*s* , and for three months, £4 4*s* Three resident students are appointed quarterly by the medical staff All resident students are required to be registered students of the hospital There is a special department for treatment of diseases of the eye, ear, throat, and nose, and a special dental department The hospital contains a fully equipped Pathological Department and a large and extensive X Ray Department has recently been added

Mercy Hospital —Clinical hospital recognised by the General Nursing Council for Ireland This hospital contains 130 beds for medical and surgical cases There is also a daily extern for medical and surgical cases, as well as for diseases of the eye, ear, and throat Extern medical and surgical, also eye, ear, and throat attendances for 1925 23 800 ; intern patients, 1770 Daily average, 97 4 Two resident students Honorary Secretary to the Staff W. Rahilly Special apartments for nurses and nuns under training

Cork Mental Hospital (Psychological Medicine) —A course of Clinical Lectures on Mental Diseases and Allied Neuroses will be delivered by the Resident Medical Superintendent in the Cork Mental Hospital as soon as possible after the opening of the Trinity Term The lectures will comprise Normal Psychology , Psychology of the Insane; Psychoses, Statistics, Classification, Ætiology, Symptomatology, Diagnosis, Prognosis, Pathology and Treatment , Psychoneuroses , Neuroses ; Psycho-Analysis The course will be illustrated by typical cases Special Post-Graduate facilities are afforded to candidates who desire to obtain a diploma in Psychological Medicine For further particulars apply to Dr Owen F McCarthy, Resident Medical Superintendent

Victoria Hospital (Incorporated) (Cork) —There are 75 beds Clinical instruction on Diseases Peculiar to Children is given The extern department is open daily at 9 30

County and City of Cork Lying-in Hospital (Ennville, Western-road; founded 1798) —This hospital contains 22 beds an Extern Midwifery Department, Gynæcological Department, Extern Department for Women, and Child Welfare Centre Training Centre for Midwives, preparing for C M B examinations Fee for six months' attendance, including clinical lectures, £5 5*s* For further particulars apply to Lucy E Smith, M D , secretary to staff.

Cork Maternity (Batchelor's Quay) —Three resident pupils are taken into the Maternity Poor women are attended at their own homes and there are 8 intern beds A Child Welfare Centre and Clinic was established in 1919 Clinical lectures are delivered during the session There is an extern department for the treatment of women's and children's diseases Fee for attendance at clinical lectures and certificate £5 5*s* Honorary secretary to staff (*vacant*)

Cork Fever Hospital —Upwards of 500 cases of various forms of fever and zymotic disease are treated yearly in this hospital The Resident Medical Officer gives instruction in Practical Pharmacy, a certificate of which is necessary for the National University and Colleges of Physicians and Surgeons of Edinburgh

Cork District Hospital (Douglas-road , 1200 beds) This hospital includes special buildings for fever and other infectious diseases (100 beds) , for children's diseases (100 beds) , and a Lock hospital, the only one in the South of Ireland (80 beds) It affords an extensive field for the study of all classes of diseases, acute and chronic, including special departments for gynæcology and diseases of the skin and nervous system The physicians and surgeons visit the hospitals every morning at 10 o'clock Lectures and clinical instruction are given daily in the wards by the physicians and surgeons Further particulars may be obtained from Dr D Morrissy, 88, South Mall, Cork, honorary secretary, medical staff Post-Graduate classes for the M D &c are held, also classes for D P H and kindred examinations

Cork Eye, Ear, and Throat Hospital (Western-road) This hospital is open to students attending the University College and others Certificates of attendance for three or six months can be obtained The hospital contains 35 beds Over 3000 cases are treated during the year A course of lectures is delivered during the session , also a post-graduate course of instruction For further information apply to Dr Arthur Sandford, Eye, Ear and Throat Hospital

UNIVERSITY COLLEGE GALWAY: SCHOOL OF MEDICINE —The College contains a well-lighted and ventilated dissecting room and an anatomical lecture theatre; physiological, pathological, pharmaceutical, chemical, and physical laboratories; anatomical, pathological, gynæcological, and materia medica museums, as well as large natural history and geological museums and an extensive library in which students can read and from which they can borrow books There are 12 Entrance Scholarships, value £20 each, for which Medical Students compete with other students on the Entrance Course. In the Second, Third, and Fourth years three Scholarships in each year, value £20 each, are reserved for Medical Students H H Stewart Scholarships (£10 a year for three years) are awarded by the University in Anatomy and Physiology at Second Medical Examination amongst

---

* No returns

Students of the three constituent Colleges Travelling Studentships (£200 a year for two years) are offered by the University for competition amongst Medical Graduates of the three Colleges of not more than two years' standing Women students are eligible for all College and University Degrees, Distinctions, and Prizes There are extensive grounds, a portion of which is occupied by a Botanic Garden and a portion is at the disposal of the College Athletic Union There are several student societies in the College, including a Biological Society There are abundant facilities for research and Post-graduate work in the Chemistry, Physiology, and Pathology departments There are ample facilities for Women Students Further information can be obtained from the Registrar of the College

Clinical Instruction is given in the Galway Tuberculosis Hospital and in the Galway Central and Fever Hospitals, containing on an average 270 patients

CENTRAL HOSPITAL, GALWAY (300 beds)—This hospital has been completely renovated and is now in working condition In addition to the Finer Surgical and Medical Departments there are now available Eye and Ear, Throat and Nose, Gynæcological and Obstetrical, Pathological, X Ray, Ultra-Violet Rays, and Electrical and Massage Departments as well Students attend from University College, Galway Medical and Surgical Clinics are held on alternate days during term One Resident Physician and one Resident Surgeon are appointed every six months The hospital is open to qualified medical men for post-graduate work

---

QUEEN'S UNIVERSITY OF BELFAST.

There are six degrees in the Faculty of Medicine of the University—viz, Bachelor of Medicine (M B), Bachelor of Surgery (B Ch), *Bachelor of Obstetrics* (B A O), Doctor of Medicine (M D), Master of Surgery (M Ch), and Master of Obstetrics (M.A O) The University also grants a Diploma in Public Health, particulars of which will be found in the University Calendar The degrees of M B, B Ch, and B.A O. are the primary degrees in the Faculty of Medicine, and are conferred at the same time and after the same course of study No student is admitted to the final examination for these degrees until he has shown. (1) that he is a matriculated student of the University, (2) that he has completed the prescribed course of study in the Faculty of Medicine extending over a period of not less than five academic years from the date of his registration as a student of Medicine by the General Council of Medical Education and Registration of the United Kingdom, (3) that he has passed the several examinations prescribed, (4) that he has attended in the University during three academic years at least the courses of study prescribed for such degrees (the Senate may accept, for not more than two academic years of the required five, courses of study pursued in any other University or School of Medicine approved by the Senate); and (5) that he has attained the age of 21 years Every candidate for admission as a matriculated student of the University shall pass such Matriculation Examination or fulfil such other test of fitness as may be prescribed by the Senate, which may prescribe the conditions under which students who have passed the Matriculation or Entrance Examination of any other University or College approved for that purpose (or who have fulfilled such other test of fitness as may be prescribed) may be exempted from passing the Matriculation Examination of the University. For information as to Scholarships and Prizes inquiry should be made of the Secretary of the University

Primary Degrees of M B, B Ch, B A O—All candidates for these degrees must satisfy the examiners in the subjects of four examinations

The First Medical Examination—The subjects of this examination are Chemistry (Inorganic and Organic), Experimental Physics, Botany and Zoology. The examination will be divided into two parts which may be taken separately I, Chemistry and Physics, II, Botany and Zoology

The Second Medical Examination—The subjects are Anatomy and Practical Anatomy, Physiology and Practical Physiology Candidates who have previously passed the First Medical Examination may present themselves for this examination at the close of their second year.

The Third Medical Examination—The subjects are (1) Pathology and Practical Pathology, (2) Materia Medica, Pharmacology and Therapeutics; (3) Medical Jurisprudence; (4) Hygiene Candidates who have previously passed the Second Medical Examination may present themselves for this examination at the close of the third year Attendance on a course in any subject of the Third Medical Examination shall not entitle a student to a certificate of attendance unless he has previously passed in all the subjects of the Second Medical Examination

The Fourth Medical Examination—The subjects are (1) Medicine, (2) Surgery, (3) Midwifery, (4) Ophthalmology and Otology This examination may be taken in two parts I, Systematic, II, Clinical, Practical and Oral. Candidates who have previously passed the Third Examination may present themselves for Part I of the Fourth Examination at the close of the fourth year, provided that they have fulfilled the necessary requirements as to attendance, &c, on the courses of instruction in the subjects of examination Candidates who have passed Part I of this examination may present themselves for Part II at the close of the fifth year, provided that they have fulfilled the necessary requirements as to hospital attendance on the various clinical courses in the subjects of examination Parts I and II may be taken together at the close of the fifth year Attendance on a course in any subject of the Fourth Medical Examination shall not entitle a student to a certificate of attendance unless he has passed in the subjects of the Second Medical Examination

Degrees of M D, M Ch, and M A O—These degrees are not conferred until the expiration of at least three academic years, or in the case of graduates of the University in Arts or Science of at least two academic years, after admission to the primary degrees in the Faculty of Medicine Every candidate must show that in the interval he has pursued such courses of study, or been engaged in such practical work as may be prescribed These degrees may be conferred by the Senate either (*a*) after an examination, which includes written, oral, clinical, and practical examinations, or (*b*) on the submission of a thesis or other evidence of original study or research, to be approved by the Faculty of Medicine after an oral or other examination of the candidate on the subject

The Medical School—The Donald Currie Chemical Buildings contain a lecture theatre, a preparation room, a chemical museum, a large class-room for elementary practical chemistry, laboratories for qualitative and quantitative analysis, rooms for water and gas analysis, dark room for photographic purposes and balance room, provided with all modern appliances The Anatomical Department contains a large and well-lighted dissecting-room a lecture-room, a professor's and demonstrator's room, a bone-room, and a laboratory for microscopic and photographic work The Medical Museum is in the same building The Jaffé Laboratories for Physiology comprise a lecture theatre, laboratories for practical work in chemical physiology, histology, and experimental physiology, and in addition small private research rooms, including balance, galvanometer, and centrifuge rooms The Musgrave Pathological Laboratory —In this department opportunity is afforded for research in pathology and bacteriology The department is in touch with most of the hospitals in Belfast, and there is an ample supply of material for investigation by graduates in morbid histology, clinical pathology, and the bacteriology of infectious diseases A course in pathology or bacteriology is given to graduates, and members of this class have an opportunity of seeing the methods employed in the various investigations carried out in the department for the Public Health Committee of the corporation in connexion with water-supply, sewage disposal, meat- and milk-supply, the diagnosis of cases of infectious diseases, &c The certificate issued to members of the class in bacteriology qualifies for the D P.H degree The Pharmaceutical Laboratory is fitted and equipped for the work of practically instructing students in the compounding and dispensing of medicines

Clinical Instruction —The following institutions are recognised by the University as affording proper opportunities for clinical instruction. the Royal Victoria Hospital, the Mater Infirmorum Hospital, the Union Hospitals, the Belfast Hospital for Sick Children, the Belfast Maternity the Ulster Hospital for Women and Children, the Ulster Eye, Ear, and Throat Hospital, the Belfast Ophthalmic Hospital, the Purdysburn Fever Hospital, and the Belfast District Lunatic Asylum

Royal Victoria Hospital, Belfast (436 beds) — Students eligible for McGrath, McQuitty, Malcolm, Coulter Smyth and Elwood Scholarships aggregate annual value £185 Twelve House Surgeons and House Physicians Thirty-six resident pupilships, three months each, annually for Senior Students, of which a proportion is allotted to Women Students, Special Departments for Radiology, Clinical Pathology V D, Dermatology, Gynæcology, Vaccine Therapy, Electrocardiography, Dentistry

MATER INFIRMORUM HOSPITAL, BELFAST —This hospital contains 270 beds and is open at all hours for the reception of accidents and urgent cases Clinical instruction is given daily by Physicians and Surgeons Surgical operations are performed daily The outpatient departments in Medicine and Surgery, also the special dispensaries for Gynæcology, Ear, Eye and Throat, Electrotherapeutics, Venereal Diseases are very largely attended and afford valuable opportunities to students for the study of those subjects A House Physician and two House Surgeons are elected every six months Resident pupils are admitted as the vacancies arise Three Exhibitions and a Gold Medal are competed for annually in June Certificates of attendance upon this hospital are recognised by all the Universities and licensing bodies in the United Kingdom

A large addition to the existing hospital buildings will be made during the coming year The new departments will include out-patient dispensaries of every kind laboratories X Ray Departments Operating Theatres, Department of Electrotherapeutics and Swedish Massage

Fees· Winter, six months, £7 7*s*, Summer, three months £4 4*s*, nine months, £9 9*s*; Perpetual Fee, £21 Fee for Gynæcology £2 2*s*, for Ophthalmology, £2 2*s* Anæsthetics, £1 1*s* For prospectuses apply to Dr E M Hickey, Hon Sec. to Medical Staff

Belfast Infirmary and Hospital (1600 beds) — Clinical courses are given quarterly, and a course for D P H in Hospital Intern Venereal Clinic in Infirmary under Corporation scheme Maternity Hospital recognised for Practical Midwifery training Particulars may be obtained on application, as to classes, to S R Armstrong M B B Ch, Hon Sec Visiting Medical Staff Certificate of vaccination class recognised by Local Government Board A new department for Cancer with 32 beds has been opened

The Belfast Hospital for Sick Children, Queen-st — Clinical instruction is given in this hospital During the Winter Session two Courses of Lectures are delivered on the Medical and Surgical Diseases incidental to Infancy and Childhood Demonstrations in Ophthalmology and Pathology are given, and ample opportunities are afforded in the wards (which contain 45 beds), and in the Out-patient Department, which is largely attended, for gaining a practical and theoretical knowledge of the diseases of Infancy and Childhood This Hospital grants Certificates in Diseases of Children, which are recognised by the various Examining Bodies A Gold Medal is offered for competition at the close of the session Fee for the session—2 guineas For re-attendance—1 guinea Hon Secretary to the Medical Staff, Dr Rowland Hill.

Maternity Hospital, Townsend-street, Belfast — Twenty-five beds in constant occupation, and exclusively devoted to Midwifery and Antenatal conditions There is also a large district The Queen's University of Belfast have erected a Students' Hostel in connexion with the Hospital where six Students and Post-graduates are received each month The University Tutor in Obstetrics resides in the Hostel and Students conduct their cases under his supervision There is a large Antenatal Department and a Department for Venereal Diseases The Hon. Secretary of the Medical Staff is T S S Holmes, F R C S

Ulster Hospital for Children and Women, Templemore-avenue, Belfast (52 beds) —Clinical instruction to students in Diseases of Children, Gynæcology and Obstetrics Special departments Radiology and Actino-therapy Eye, Ear and Throat, V D Clinic and Antenatal Clinic Gold Medal awarded annually. Two House Surgeons appointed from students of hospital

Benn Ulster Eye, Ear and Throat Hospital, Incorporated, Clifton-street, Belfast (30 beds)

Belfast Ophthalmic Hospital, Great Victoria-street (30 beds) —Practical demonstrations by the staff and occasional clinical lectures in the subjects of Ophthalmology, Otology, and Laryngology Clinical instruction is given daily

Belfast Fever Hospitals —City Fever Hospital, Purdysburn (360 beds); Union Fever Hospital (200 beds) Clinical Classes are held during the winter and summer sessions Post-Graduate (D P H) Classes are also held Lecturer: A. Gardner Robb, M.B, D P.H.

Belfast Mental Hospital (*Purdysburn Villa Colony*) (1000 beds) University Lectures and clinics

IRISH MEDICAL CORPORATIONS GRANTING DIPLOMAS

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

The College issues its Licences in Medicine and in Midwifery to practitioners whose names appear on the Medical Register of the United Kingdom

The Licence in Medicine —The subjects of examination are. Practice of Medicine, Clinical Medicine, Pathology, Medical Jurisprudence Midwifery, Hygiene, and Therapeutics

The Licence in Midwifery —Candidates must produce certificates of registration A registered medical practitioner of five years' standing may be exempted from the examination by printed questions

The Membership —Examinations for Membership are held in February, June, and November The fee for the examination is £21 to Licentiates of the College, or £36 15*s* to non-Licentiates

The Fellowship —Fellows are elected by ballot Applicants must have been a Member of the College for at least one year and must have attained the age of 27 years There is a fee of £35 in addition to a stamp duty of £25.

Further particulars can be obtained from the Registrar of the Royal College of Physicians of Ireland, 6, Kildare street, Dublin

ROYAL COLLEGE OF SURGEONS IN IRELAND

The Licence in Surgery—A candidate whose name is entered either on the Medical Register for the United Kingdom, the Colonial Medical Register, or the Foreign Medical Register of the year in which he presents himself for examination, and who satisfies the Council that he has passed through a course of study and Examinations equivalent to those required by the Regulations of the Conjoint Board of the Royal College of Physicians of Ireland and the Royal College of Surgeons in Ireland, preceded by the passing of an Examination in Arts recognised by the General Medical Council, may, at the discretion of the Council, be admitted to the Examination.

Candidates are examined in Surgery, Clinical Surgery, Operative Surgery on the subject, Surgical Appliances, and Ophthalmic Surgery

Diploma in Midwifery—A diploma in Midwifery is granted after examination to persons possessing a registrable qualification

Fellowship Examinations—Candidates for the Fellowship shall make application to the President and Council to be admitted to examination. They are required to pass two examinations—Primary and Final Candidates may present themselves for the Final Examination immediately after passing the Primary part, provided they have complied with the necessary regulations The subjects for the Primary Examination are (*a*) Anatomy, including Dissections, and (*b*) Physiology and Histology. The subjects for the Final Examination are Surgery, including Surgical Anatomy and Pathology For admission to the Final Examination the candidate must have passed the Primary Examination, and must be a Licentiate or Graduate in Surgery of a university or licensing body recognised by the General Medical Council, all such candidates must not be less than 25 years of age

Further particulars as to fees and conditions of examination can be obtained from the Registrar of the College, Stephen's-green West, Dublin

ROYAL COLLEGE OF PHYSICIANS OF IRELAND AND ROYAL COLLEGE OF SURGEONS IN IRELAND

This body requires of candidates the passage either of its own preliminary examination in the subjects of general education or proof that the candidate has passed one of the tests accepted by the General Medical Council as well as passing in the Pre-Registration Examinations in Chemistry and Physics and Biology

Professional Examinations—There are three professional examinations, the first of which cannot be passed earlier than the end of the second winter session, nor the final before the conclusion of full five years of medical study. Before being admitted to any of them the candidate must show that he has studied the different subjects in practice and theory for the requisite periods, certificates to this effect being accepted from the authorities of most of the recognised medical schools at home and abroad The first examination deals with (*a*) Anatomy, and (*b*) Physiology and Histology The second examination deals with (*a*) Pathology, (*b*) Materia Medica, Pharmacy, and Therapeutics and Ophthalmology, and may be taken separately

Final Examination—This is divided into three divisions, which cannot be completed until at least five years have passed in medical studies other than those for the Pre-Registration Examinations, and five years at least since the beginning of the curriculum The divisions are (*a*) Medicine, including Fevers, Mental Diseases, and Diseases of Children, (*b*) Surgery, including Operative Surgery, (*c*) Midwifery, including Diseases of Women and Children, and the Practice of Vaccination

Fees—Preliminary Examination, £2 2*s*; Re-examination, £2 2*s* Pre-Registration Examination, £3 3*s* Re-examination in Chemistry, £2 2*s*, in Physics, £1 1*s* First Professional Examination, £26 5*s*, Second, £9 9*s*, Final, £6 6*s* Re-examination fee is £2 2*s* for each division

Diploma in Psychological Medicine—There are two examinations in connexion with this Diploma Part I consists of (*a*) Anatomy and Physiology of the Nervous System, (*b*) Psychology Part II (*a*) Neurology, including Clinical and Pathological Neurology, (*b*) Psychological Medicine, including its legal relationships

Fees—£3 3*s* for each part

Further information can be obtained from Mr Alfred Miller, Secretary of the Committee of Management, Royal College of Surgeons, St Stephen's Green

Royal College of Surgeons in Ireland (Schools of Surgery)—The schools of surgery are attached by Charter to the Royal College of Surgeons and have existed as a department of the College for over a century They are carried on within the College buildings and are specially subject to the supervision and control of the Council, who are empowered to appoint and remove the professors and to regulate the methods of teaching pursued The buildings have been reconstructed, the capacity of the dissecting-room nearly trebled, and special pathological, bacteriological, public health, and pharmaceutical laboratories fitted with the most approved appliances in order that students may have the advantage of the most modern methods of instruction The entire building is heated by hot-water pipes and lighted throughout by the electric light Winter Session commences in October, Summer Session in April Scholarships and Prizes Carmichael Scholarship, £15, Mayne Scholarship, £8, Stoney Memorial gold medal, Operative Surgery, gold and silver medals, Barker Prize, £26 5*s*, H Macnaughton-Jones gold medal in Obstetrics and Gynæcology; and class prizes and medals Prospectuses and guide for medical students can be obtained post free on written application to the Registrar, Royal College of Surgeons, Stephen's-green W, Dublin

APOTHECARIES' HALL OF IRELAND

The Licence of this Hall is granted to students who present certificates of having fully completed the course of study as laid down in the curriculum and who pass the necessary examinations The diploma of the Hall entitles the holder to be registered as a practitioner in medicine, surgery, and midwifery, with also the privileges of the Apothecary's Licence

Candidates must pass two Professional Examinations, called the Primary Examination and the Final Examination, which are conducted at separate times, partly in writing, and partly practically and orally The Primary and Final Professional Examinations are held twice a year—viz, in June and November, or such other dates as may be determined The Fees payable for each Examination are as follows Primary Professional, £21, Final Examination, £21

Candidates who produce satisfactory evidence of having passed an examination for a Degree or Licence in Medicine, conducted by any University in the British Empire, or by the Royal Colleges of Physicians and Surgeons of Ireland or Great Britain, or by any Foreign University whose Degrees are recognised by the General Medical Council for purposes of Regulation in the Foreign List of the Medical Register, will be exempted from further examination in such subject or subjects of the Primary Examination

The subjects for Part I of the Primary Examination are Anatomy, Physiology and Histology, including Bio-Chemistry, and for Part II, Materia Medica and Pharmacy, Pathology, and Medical Jurisprudence and Hygiene

For the Final Examination the subjects are: (*a*) Medicine and Clinical Medicine and Clinical Methods (*b*) Surgery—Clinical, Ophthalmic and Operative; and Surgical Anatomy. (*c*) Midwifery and

Gynæcology, and Practical Pharmacy and Materia Medica (if not taken at Intermediate Examination)

Each candidate before receiving his diploma must produce evidence that he has attained the age of 21 years The details of the course of education required and syllabus of the examinations will be supplied by the Registrar at 95, Merrion-square, Dublin

HOSPITALS AFFORDING PRACTICE RECOGNISED BY THE IRISH UNIVERSITIES AND CORPORATIONS [1]

SIR PATRICK DUN'S HOSPITAL Grand Canal-street, Dublin —Classes both in Medicine and Surgery are held each morning from 9 o'clock from Oct 1st till the end of June Special classes for junior students will be held in the wards during the months of October, November, and December A Resident Surgeon, with salary, is appointed annually Ten Resident Pupils are appointed every four months Twelve surgical Dressers and twelve Clinical Clerks are appointed each month There are facilities for women students

Prizes and Medals—Clinical medals and prizes amounting to about £21 each will be awarded in Medicine and in Surgery respectively in accordance with the will of the late Rev Samuel Haughton, M D, S F T C D Candidates who fail to obtain these medals and prizes will be awarded special certificates in Medicine and in Surgery provided they show sufficient merit

Fees—Winter and summer session, £12 12*s*; winter session (six months), £8 8*s*, and summer session (three months), £5 5*s* Special certificate in anæsthetics, £1 1*s* The practice of this hospital is open to all students, and the certificates are recognised by Dublin University, the National University and Royal Colleges of Surgeons of England, Ireland, and Scotland

The Hospital is an official "Treatment Centre" for venereal diseases

Further information will be supplied by the Hon Secretary to the Medical Board

COOMBE LYING-IN HOSPITAL AND GUINNESS DISPENSARY FOR THE TREATMENT OF DISEASES PECULIAR TO WOMEN, Dublin —This hospital contains 70 beds and consists of two divisions, one of which is devoted to lying-in cases and the other to the treatment of diseases peculiar to women The practice of this hospital is one of the largest in Ireland Lectures are delivered, practical instruction given, and gynæcological operations are performed in the theatres daily There is a general dispensary held daily, at which instruction is given on the Diseases of Women and Children There is a special afternoon dispensary held by the Master and his assistants, at which practical instruction in gynæcology is given There is no extra charge for attendance at this Dispensary A deep therapy X ray apparatus has been installed for the treatment of malignant cases There is accommodation for intern pupils who enjoy exceptional advantages of acquiring a thorough knowledge of this branch of their profession Lady medical students can reside in the hospital The residents' quarters are comfortable Clinical assistants are appointed from amongst the pupils as vacancies occur Certificates of attendance at this hospital are accepted by all licensing bodies Fees. Extern pupils for full course of six months, £8 8*s*, three months, £4 4*s* Intern pupils, one month, £4 4*s*, each consecutive month, £3 3*s*, six months, £18 18*s* Registration fee, in advance, 10*s* 6*d* Students can enter for attendance at any time, but preference is given to those entering from the first day of the month Further particulars may be had on application to the Master or the Registrar at the Hospital

ADELAIDE HOSPITAL, Peter-street, Dublin —Fee for nine months' hospital attendance, £12 12*s*; six months, £8 8*s* Summer, three months, £5 5*s* [2] Two resident surgeons are elected half-yearly and four or more resident pupils every four months At the termination of the session prizes in Clinical Medicine, in Surgery, in Gynæcology, and in Dermatology will be awarded

Wallace Beatty Memorial bursaries will be awarded at the commencement of the winter session

Hudson Scholarship—In addition to the junior prizes the Hudson Scholarship, £30 and a gold medal, as well as a prize of £10, together with a silver medal, will be awarded at the end of the session for proficiency in medicine, surgery, gynæcology, and pathology

The certificates of attendance are recognised by all the Universities and licensing bodies in the United Kingdom Further particulars may be obtained from Dr L G Gunn

JERVIS-STREET HOSPITAL, Dublin *—Founded 1718, rebuilt 1886 130 beds The operation theatre contains all modern requirements

MATER MISERICORDIÆ HOSPITAL, Dublin (Under the care of the Sisters of Mercy)—This Hospital was founded in 1861 by the Sisters of Mercy It is the largest in Ireland, containing 382 beds, is open at all hours for the reception of accidents and urgent cases Clinical instruction will be given by the Physicians and Surgeons at 9 A M daily Ophthalmic Surgery will be taught in the Special Wards and in the Dispensary Surgical operations will be performed daily Connected with the hospital are extensive Dispensaries, which afford valuable opportunities for the study of general Medical and Surgical Diseases, and Accidents, a fully-equipped Biochemical Laboratory, a modern Electro-Massage Department, and Electro-cardiograph room Instruction will be given on Pathology and Bacteriology Three House Physicians, eight House Surgeons and 18 resident pupils will be elected annually Dressers and Clinical Clerks will also be appointed, and certificates will be given to those who perform their duties to the satisfaction of the staff Leonard Prizes will be offered for competition annually For further particulars see prospectus Certificates of attendance upon this hospital are recognised by all the Universities and licensing bodies in the United Kingdom There is a Private Hospital for the reception of Medical and Surgical cases, also a Training School and a Home for Trained Nurses in connexion with the Hospital Trained and experienced Nurses who have passed a qualifying examination in nursing can be obtained on application to the Lady Superior, Mater Misericordiæ Hospital

Terms of attendance.—Nine months, £12 12*s*, six winter months, £8 8*s*, three summer months, £5 5*s* Entries can be made with any of the physicians or surgeons, or with the Registrar, Dr F X Callaghan, 13, Merrion-square A prospectus containing in detail the arrangements for Clinical Instruction, Prizes, &c, may be obtained from the Secretary, Medical Board, Mr C MacAuley

MEATH HOSPITAL AND COUNTY DUBLIN INFIRMARY This hospital was founded in 1753 and now contains 150 beds available for clinical teaching A building containing 40 of these beds intended for the isolated treatment of fevers is attached to the hospital The certificates of this hospital are recognised by all the universities and licensing bodies of the United Kingdom Medical Clinical Clerks and Surgical Resident Pupils and Dressers are appointed every three months Two House Surgeons and a Resident Casualty Officer are elected twice annually The Smyth Memorial Prize in Medicine, value £50, is awarded in alternate years and is open to students of the hospital who have attended for at least two academic years—the next examination will be held in June 1928 Apply to Hon Secretary and Treasurer of the Medical Board

---

[1] This list of the institutions recognised by the Conjoint Board of Ireland is supplemented in the regulations of the Colleges by those hospitals mentioned as recognised institutions in Scotland and England The recognised facilities for clinical instruction in some of the Irish centres have been described

[2] Special Lectures in Dermatology are given weekly, also practical demonstrations on the treatment of fractures from time to time

* No returns

MERCER'S HOSPITAL.—This hospital, founded in 1734, is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College. It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork-street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution and become eligible for the posts of Resident Pupil, &c. There is a large dispensary for out-patients and a modern X ray department. An electro-cardiograph has been installed. Students of the hospital are permitted to attend the gynæcological department, where they receive practical instruction. There are special wards for the treatment and study of children's diseases. A gold medal is awarded annually to the best student. During the past few years the hospital has undergone extensive alterations in order to bring it up to modern requirements.

Appointments.—A House Surgeon is appointed annually. There are six men and two women Resident Pupils, and Clinical Clerks and Dressers are appointed from amongst deserving members of the class.

Fees.—Winter, six months, £8 8*s*.; Summer, three months, £5 5*s*.; nine months, £12 12*s*.

For further particulars apply to Dr. Bethel Solomons, Hon. Sec., Medical Board, 42, Fitzwilliam-square.

NATIONAL MATERNITY HOSPITAL, Holles-street, Dublin.—Established 1894. The hospital consists of Intern and Extern Maternity, Gynæcological Wards, and a Dispensary for the treatment of Diseases of Women and Children. During the year 1925–26, 1302 cases were admitted, 846 confinements took place in the hospital, and 342 gynæcological operations were performed. In the district 653 confinements took place. 6113 patients attended the dispensary for treatment. Every facility is given for the carrying out of practical work. Undergraduate and Post-graduate courses are arranged at any time. Certificates of attendance at this hospital are recognised by all the licensing bodies. Terms: Undergraduate courses, 8 guineas for certified course (6 months), 3 guineas per month for uncertified course; Post-graduate courses, 3 guineas per month, 1 guinea for each extra week. Clinical Lectures are given daily and Oral Lectures four times per week. The L.M. Diploma is given by special examination which is held three times a year. Entrance fee 1 guinea, certificate 4 guineas. During the past year 98 graduates availed themselves of the Post-graduate courses. Further particulars can be obtained from the Master, Dr. P. T. McArdle, 27, Merrion-square; or from the Secretary, Holles-street, Dublin.

RICHMOND, WHITWORTH, AND HARDWICKE HOSPITALS (HOUSE OF INDUSTRY HOSPITALS), Dublin.*—These hospitals contain 330 beds—130 for Surgical cases, 80 for Medical cases, 78 for Fever and other Epidemic Diseases, and an Auxiliary Wing of 42 beds. A Resident Physician and a Resident Surgeon are appointed each half year and are paid for their services. 20 Resident Clinical Clerks are appointed each quarter and provided with furnished apartments, fuel, &c. These appointments are open not only to advanced students but also to those who are qualified in Medicine and Surgery. The Dressers are selected from among the best qualified of the pupils without the payment of any additional fee. Women students are eligible for election as residents and special apartments are reserved for their use. For prospectuses apply to Mr. Adams McConnell, F.R.C.S.I., Hon. Secretary, 69, Fitzwilliam-square, Dublin.

ROTUNDA HOSPITAL, Dublin.—This institution is the largest combined gynæcological and maternity hospital in the British Empire. Over 4000 confinements are attended annually and 500 gynæcological patients admitted. Students can take out their necessary gynæcological and midwifery practical courses. The work of the hospital is carried on continuously through the year and consists of daily clinical instruction in the maternity department and examination and operations in the gynæcological department. Qualified students are given facilities for studying and assisting in the management of all abnormal cases so far as is practical. An antenatal dispensary is largely conducted by the senior qualified students of the hospital under the supervision of the staff. A special class in gynæcological examination and diagnosis is conducted by the Assistants to the Master. The appointments on the staff of the hospital are given to qualified past students of the hospital who have taken the L.M. and consist of Extern Assistants for six months, one being appointed every three months. From these the Assistants to the Master are appointed. Women students can reside in the hospital on the same terms as men. The L.M. is granted by examination after a six months' course. Fees for Intern students: one month £6 6*s*., months other than the first £4 4*s*., three months £12 12*s*., six months £21. Special gynæcological class £2 2*s*. per month. For further particulars apply to the Master, Dr. Gibbon FitzGibbon.

ROYAL CITY OF DUBLIN HOSPITAL.—Founded 1832, enlarged 1851, rebuilt 1893. 135 beds. There is a special wing for the treatment of fevers and contagious diseases founded by the late Mr. Drummond. Secretary: W. H. Leadbeater. There is a large nursery where special opportunities are afforded for the study of diseases of children, both medical and surgical. There are also special wards for ophthalmic, aural, and gynæcological cases. There is a largely attended out-patient department where students are allowed to attend accidents and dress cases under supervision. Six resident pupils are appointed every three months. A House Surgeon and a House Physician are appointed annually.

ROYAL VICTORIA EYE AND EAR HOSPITAL, Dublin.*—Established 1844. Incorporated 1897. 102 beds. In-patients, 1499; out-patients, 8492.

DR. STEEVENS' HOSPITAL, Dublin (*Kingsbridge*).—Established 1720. 250 beds, only 150 now in use. Patients, intern, 1197; extern patients 7313; extern dispensary attendances, including special V.D. Clinic, 44,529. There is accommodation for 10 resident pupils, each of whom is provided with a separate bedroom, and board is supplied by the hospital at a reasonable rate. There is an Electric Massage Department and a "Sun-Ray" Department. All information with regard to the terms for such residency can be had from the Resident Surgeon at the Hospital. Secretary: E. D. F. Banks.

ST. VINCENT'S HOSPITAL AND DISPENSARY, Dublin.—Established 1834. 200 beds. Clinical Lectures in Medicine and Surgery are held from October to June. Special classes for Juniors from October to December. Pathological and Bacteriological Demonstrations are given every Thursday, and instructions in the use of Laryngoscope and Otoscope for Senior students every Saturday. Medals and Prizes: the Bellingham gold medal in Medicine and the O'Farrell gold medal in Surgery are offered for competition at the end of the summer session, as well as junior prizes, also the Surgeon McArdle Prize, value £20. In the last term there was opened a new External Department and a new Pathological Laboratory. Dr. Meenan, Hon. Secretary, 28, Fitzwilliam-square.

WE take this opportunity of thanking the officials of Government Departments and the Deans and Secretaries of the various institutions for their kind cooperation in enabling us to bring the information contained in our Students' Number up to date.

---

* No returns.

* No returns.

LEWIS'S PU

JUST PUBLISHED FIFTH Edition. Revised and
Illustrations Demy 8v

MIND AND ITS DISO

By W H B STODDART, M D Lond, F.R C P, P
Lecturer on Mental Diseases to St Thomas's Hosp
Mental Diseases to the University of London, &c

THIRTEENTH Edition. Thoroughly Revised.
Demy 8vo

SWANZY'S

DISEASES OF THE EYE

Revised and Edited by LOUIS WERNER, M B, F.R
of Ophthalmology, University College, Dublin;
". Swanzy's text-book undoubtedly remains one
the illustrations"—THE LANCET

SIXTH Edition With Plates from Original D
Demy 8vo

ON DISEASES OF T

Including TUBERCULOSI
By Sir RICHARD DOUGLAS POWELL, Bart, K
to H M the King, Consulting Physic
Sir PERCIVAL H-S HARTLEY, C V O,
Hospital; Senior Physician, Brompton Co
"can be confidently recommended as a safe gu
country at the present time"—BRITISH MEDICAL JOU

With 14 Coloured Plates and 435 Illustratic

DISEASES OF THE SKI

By J. M. H. MACLEOD, M A St And, M D
Charing Cross Hospital; Lecturer or
"We think it may rank among the most authoritat
It is certainly the most readable English modern wor

SECOND Edition Thoroughly Revised
and Photographs

THE PATHO

By E. H KETTLE, M D, B S Lond, Professo
Medicine, Cardiff, formerly Pathologist
Hospital Medical School, London
"a model of conciseness The present edit
books of reference"—THE LANCET

SEVENTH Edition Thoroughly Revised.

HYGIENE

By LOUIS C. PARKES, M D, D P H
Adviser to H M Office of Works
Lond, Chadwick Professor of H
Analyst, Metropolitan Borough o
"This well-known volume will deservedly

SECOND Edition. Thoroughly Rev

OCCUPATION

Their Prevention and Treatmer
By R PROSSER WHITE, M D Ed, M
Officer, Royal Albert Edward Infi
"This book must prove of great valu
"A truly remarkable fund of signific

London: H. K. LEWIS &
Telegrams "PUBLICAVIT, EUSROAD

e
e
ze
i-
es
t-
th
ial
ill
or-
nth
ised
e sat
form
ents
icles
ental
of a
truth
some
nt to
mable
of its
ndition
for the
break-
medical
ress of
us and
of the
essional
n mind
ed by a
jumpy
ondone
y which
unsel
students
re became
was being
en requiring
with by the
If the implied
mere number
to live by the
ntil that time
the profession
support their
the circum-
res where many
us reasons and
and its resulting
malady whereas
ent recruiting of
can all surmise
ity even by those
vercrowding to be
akable testimony
ence was held was
it and justifying
graph illustrating

figures (see p 480) indicates that the various ctors which led to the multiplication of students ave lost their force. and there is no reason to think at the medical profession will be overcrowded in he immediate future Further, we do not know that the unusual addition to the roll of qualified men, corresponding with the swelling of the students' ranks has brought any undue consequences with it, even with the increased number of doctors that we now have the medical profession is not to-day redundant, for the amount of work that has to be done steadily swells, as does the number of varying avenues which have to be traversed by the followers of medicine This is the fact which should be remembered when we are told dogmatically that examinations must be stiffened to keep out the weaker candidates Things are not as simple at the threshhold of a learned profession as they are at the doors of a test match On these occasions unusual barriers can be erected and stringent measures taken to regulate ingress when too many persons are expected And the precautions have a logical effect Access to entertainments is strictly guarded in defence of those who have paid their money—translated into terms of examinations, for those who have learned their work But examinations especially in such a far-ranging collection of subjects as medicine, do not play the same practical rôle A serious proportion of those who have paid with their industry and intelligence for the opportunity to enter the qualified ranks do not succeed assuredly or promptly, and it is this high element of uncertainty which conduces to the failure of nervous students No general relaxation of standard is desired from the authorities while, from the economic aspect a stiffening can be justified on public grounds by the satisfactory number of candidates but the ideal part which the examinations should play in the curriculum has not yet been found, despite repeated and real research And the uncertainty of the results of these tests does affect some examinees seriously.

We can welcome our recruits with the assurance that there is plenty of work for them to do, and we can congratulate them because that work has to be done in every section of professional endeavour in fairer and more generous circumstances than used to prevail in times not far away With regard to contract practice, hope lies in that betterment of organisation which experience is bringing, and which has been in the minds of many since the passage of the National Insurance Acts, the position does not promise to improve pecuniarily, and consolation must be sought in the reflection that, as such practice stands at present, it is hugely better in its material results than it was 20 years ago when it was admittedly scandalous The Services only in the last few weeks, have made drastic revision of their regulations in favour of their medical staffs, and the authorities at medical schools will certainly have noted the opportunities now offered to their pupils Elsewhere salaries have risen, and medical officers though poorly paid in comparison with those who discharge other public duties receive better terms, and their terms have not been wholly dictated by the general rise in prices, but have followed on a wider appreciation by the public of the meaning and value of preventive treatment and organised therapeutics These are solid reasons for congratulating our students upon their choice of a career If entrance to the arena is fenced around with difficulties there is zest in the surmounting of these And the return for success is not the pleasure of looking on, but the privilege of playing

Mercer's Hospital —This hospital, founded in 1734, is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork-street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution and become eligible for the posts of Resident Pupil, &c There is a large dispensary for out-patients and a modern X ray department An electro-cardiograph has been installed Students of the hospital are permitted to attend the gynæcological department, where they receive practical instruction There are special wards for the treatment and study of children's diseases A gold medal is awarded annually to the best student During the past few years the hospital has undergone extensive alterations in order to bring it up to modern requirements

Appointments —A House Surgeon is appointed annually. There are six men and two women Resident Pupils, and Clinical Clerks and Dressers are appointed from amongst deserving members of the class

Fees —Winter, six months, £8 8*s* , Summer, three months, £5 5*s* , nine months, £12 12*s*

For further particulars apply to Dr Bethel Solomons, Hon Sec., Medical Board, 42, Fitzwilliam-square

National Maternity Hospital, Holles-street, Dublin —Established 1894 The hospital consists of Intern and Extern Maternity, Gynæcological Wards, and a Dispensary for the treatment of Diseases of Women and Children During the year 1925–26, 1302 cases were admitted , 846 confinements took place in the hospital, and 342 gynæcological operations were performed In the district 653 confinements took place 6113 patients attended the dispensary for treatment Every facility is given for the carrying out of practical work Undergraduate and Post-graduate courses are arranged at any time Certificates of attendance at this hospital are recognised by all the licensing bodies Terms Undergraduate courses, 8 guineas for certified course (6 months), 3 guineas per month for uncertified course; Post-graduate courses, 3 guineas per month, 1 guinea for each extra week Clinical Lectures are given daily and Oral Lectures four times per week The L M Diploma is given by special examination which is held three times a year Entrance fee 1 guinea, certificate 4 guineas During the past year 98 graduates availed themselves of the Post-graduate courses Further particulars can be obtained from the Master, Dr P T McArdle, 27, Merrion-square , or from the Secretary, Holles-street, Dublin

Richmond, Whitworth, and Hardwicke Hospitals (House of Industry Hospitals), Dublin *—These hospitals contain 330 beds—130 for Surgical cases, 80 for Medical cases, 78 for Fever and other Epidemic Diseases, and an Auxiliary Wing of 42 beds A Resident Physician and a Resident Surgeon are appointed each half year and are paid for their services 20 Resident Clinical Clerks are appointed each quarter and provided with furnished apartments, fuel, &c These appointments are open not only to advanced students but also to those who are qualified in Medicine and Surgery The Dressers are selected from among the best qualified of the pupils without the payment of any additional fee Women students are eligible for election as residents and special apartments are reserved for their use For prospectuses apply to Mr Adams McConnell, F R C S I , Hon Secretary, 69, Fitzwilliam-square, Dublin

Rotunda Hospital, Dublin —This institution is the largest combined gynæcological and maternity hospital in the British Empire Over 4000 confinements are attended annually and 500 gynæcological patients admitted Students can take out their necessary gynæcological and midwifery practical courses The work of the hospital is carried on continuously through the year and consists of daily clinical instruction in the maternity department and examination and operations in the gynæcological department Qualified students are given facilities for studying and assisting in the management of all abnormal cases so far as is practical An antenatal dispensary is largely conducted by the senior qualified students of the hospital under the supervision of the staff A special class in gynæcological examination and diagnosis is conducted by the Assistants to the Master The appointments on the staff of the hospital are given to qualified past students of the hospital who have taken the L M and consist of Extern Assistants for six months, one being appointed every three months From these the Assistants to the Master are appointed Women students can reside in the hospital on the same terms as men The L M is granted by examination after a six months' course Fees for Intern students one month £6 6*s* , months other than the first £4 4*s* , three months £12 12*s* , six months £21 Special gynæcological class £2 2*s* per month For further particulars apply to the Master, Dr Gibbon FitzGibbon

Royal City of Dublin Hospital —Founded 1832 , enlarged 1851 , rebuilt 1893 135 beds There is a special wing for the treatment of fevers and contagious diseases founded by the late Mr Drummond Secretary W H Leadbeater There is a large nursery where special opportunities are afforded for the study of diseases of children, both medical and surgical There are also special wards for ophthalmic, aural, and gynæcological cases There is a largely attended out-patient department where students are allowed to attend accidents and dress cases under supervision. Six resident pupils are appointed every three months A House Surgeon and a House Physician are appointed annually

Royal Victoria Eye and Ear Hospital, Dublin.* —Established 1844 Incorporated 1897. 102 beds. In-patients, 1499 , out-patients, 8492.

Dr Steevens' Hospital, Dublin (Kingsbridge) —Established 1720 250 beds, only 150 now in use Patients, intern, 1197 , extern patients 7313 , extern dispensary attendances, including special V D Clinic, 44,529 There is accommodation for 10 resident pupils, each of whom is provided with a separate bedroom, and board is supplied by the hospital at a reasonable rate There is an Electric Massage Department and a " Sun-Ray " Department All information with regard to the terms for such residency can be had from the Resident Surgeon at the Hospital Secretary E D F Banks

St Vincent's Hospital and Dispensary, Dublin —Established 1834 200 beds Clinical Lectures in Medicine and Surgery are held from October to June. Special classes for Juniors from October to December. Pathological and Bacteriological Demonstrations are given every Thursday, and instructions in the use of Laryngoscope and Otoscope for Senior students every Saturday Medals and Prizes the Bellingham gold medal in Medicine and the O'Farrell gold medal in Surgery are offered for competition at the end of the summer session, as well as junior prizes, also the Surgeon McArdle Prize value £20 In the last term there was opened a new External Department and a new Pathological Laboratory Dr Meenan, Hon Secretary, 28, Fitzwilliam-square

We take this opportunity of thanking the officials of Government Departments and the Deans and Secretaries of the various institutions for their kind coöperation in enabling us to bring the information contained in our Students' Number up to date

---

* No returns

* No returns

LEWIS'S PU

JUST PUBLISHED FIFTH Edition. Revised and Illustrations Demy 8vo 26

MIND AND ITS DISC

By W H. B STODDART, M D. Lond, F R C P, P
Lecturer on Mental Diseases to St Thomas's Hosp
Mental Diseases to the University of London, &c

THIRTEENTH Edition Thoroughly Revised Demy 8vo

SWANZY'S
DISEASES OF THE EYE
Revised and Edited by LOUIS WERNER, M B, F R
of Ophthalmology, University College, Dublin
"Swanzy's text book undoubtedly r
the illustrations"—THE LANCET

SIXTH Edition With Plates from Original D Demy 8vo

ON DISEASES OF T
Including TUBERCULOS
By Sir RICHARD DOUGLAS POWELL, Bart, K
to H M the King, Consulting Phys
Sir PERCIVAL H S HARTLEY, C V O
Hospital, Senior Physician, Brompton C
"can be confidently recommended as a
country at the present time"—BRITISH MEDICAL JO

With 14 Coloured Plates and 435 Illustratio
DISEASES OF THE SKI
By J. M. H MACLEOD, M A St And, M D
Charing Cross Hospital, Lecture
"We think it may rank among the most
it is certainly the most readable English mod

SECOND Edition Thoroughly R and Pho
THE PATH
By E H KETTLE, M D, B S Lond, Profe
Medicine, Cardiff, formerly Pa
Hospital Medical School, Londo
"a model of conciseness
books of reference"—THE LANCET

SEVENTH Edition Thoroughly Re
HYGIENE
By LOUIS C. PARKES, M D,
Adviser to H M O
Lond, Chadwick Profe
Analyst, Metropolitan
"This well known vo

SECOND Edition.
OCCU
Their Pr
By R PROSSER
Officer, Royal
"This book
"A tru

London

r starts
with the
can be
ne The
qualifica-
ie articles
appoint-
and with
nd special
uccess will
ung oppor-
lance with
tandardised
must be sat
unted—form
ne students'
rious articles
and mental
truggles of a
it is a truth
loctors. some
not want to
the amiable
of one of its
the condition
actorily for the
d these break-
among medical
vous stress of
g happens and
n charge of the
our professional
e matter in mind
influenced by a
t upon a jumpy
cannot condone
he inability which
revious counsel.
medical students
and there became
a point was being
nd women requiring
e dealt with by the
nothing of the implied
from the mere number
ter have to live by the
d art Until that time
ually that the profession
facts to support their
misled by the circum-
rtain centres where many
d for various reasons and
l congestion and its resulting
a general malady, whereas
But the great recruiting of
or which we can all surmise
with equanimity, even by those
assertion of overcrowding to be
for an unmistakable testimony
in which medicine was held was
embarrassment and justifying
sition A graph illustrating

the figures (see p 480) indicates that the various factors which led to the multiplication of students have lost their force and there is no reason to think that the medical profession will be overcrowded in the immediate future Further, we do not know that the unusual addition to the roll of qualified men, corresponding with the swelling of the students ranks, has brought any undue consequences with it; even with the increased number of doctors that we now have the medical profession is not to-day redundant, for the amount of work that has to be done steadily swells, as does the number of varying avenues which have to be traversed by the followers of medicine This is the fact which should be remembered when we are told dogmatically that examinations must be stiffened to keep out the weaker candidates Things are not as simple at the threshhold of a learned profession as they are at the doors of a test match On these occasions unusual barriers can be erected and stringent measures taken to regulate ingress when too many persons are expected And the precautions have a logical effect Access to entertainments is strictly guarded in defence of those who have paid their money—translated into terms of examinations, for those who have learned their work But examinations, especially in such a far-ranging collection of subjects as medicine do not play the same practical rôle A serious proportion of those who have paid with their industry and intelligence for the opportunity to enter the qualified ranks do not succeed assuredly or promptly, and it is this high element of uncertainty which conduces to the failure of nervous students No general relaxation of standard is desired from the authorities while, from the economic aspect, a stiffening can be justified on public grounds by the satisfactory number of candidates but the ideal part which the examinations should play in the curriculum has not yet been found, despite repeated and real research. And the uncertainty of the results of these tests does affect some examinees seriously.

We can welcome our recruits with the assurance that there is plenty of work for them to do, and we can congratulate them because that work has to be done in every section of professional endeavour in fairer and more generous circumstances than used to prevail in times not far away With regard to contract practice hope lies in that betterment of organisation which experience is bringing, and which has been in the minds of many since the passage of the National Insurance Acts the position does not promise to improve pecuniarily, and consolation must be sought in the reflection that, as such practice stands at present, it is hugely better in its material results than it was 20 years ago when it was admittedly scandalous The Services only in the last few weeks have made drastic revision of their regulations in favour of their medical staffs and the authorities at medical schools will certainly have noted the opportunities now offered to their pupils Elsewhere salaries have risen and medical officers though poorly paid in comparison with those who discharge other public duties receive better terms · and their terms have not been wholly dictated by the general rise in prices but have followed on a wider appreciation by the public of the meaning and value of preventive treatment and organised therapeutics These are solid reasons for congratulating our students upon their choice of a career If entrance to the arena is fenced around with difficulties there is zest in the surmounting of these And the return for success is not the pleasure of looking on, but the privilege of playing

Mercer's Hospital.—This hospital, founded 1734, is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork-street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution and become eligible for the posts of Resident Pupil, &c There is a large dispensary for out-patients and a modern X ray department An electro-cardiograph has been installed Students of the hospital are permitted to attend the gynæcological department, where they receive practical instruction There are special wards for the treatment and study of children's diseases A gold medal is awarded annually to the best student During the past few years the hospital has undergone extensive alterations in order to bring it up to modern requirements

Appointments—A House Surgeon is appointed annually. There are six men and two women Resident Pupils, and Clinical Clerks and Dressers are appointed from amongst deserving members of the class

Fees—Winter, six months, £8 8*s*; Summer, three months, £5 5*s*, nine months, £12 12*s*

For further particulars apply to Dr Bethel Solomons, Hon Sec., Medical Board, 42, Fitzwilliam-square

National Maternity Hospital, Holles-street, Dublin—Established 1894 The hospital consists of Intern and Extern Maternity, Gynæcological Wards, and a Dispensary for the treatment of Diseases of Women and Children During the year 1925–26, 1302 cases were admitted, 846 confinements took place in the hospital, and 342 gynæcological operations were performed In the district 653 confinements took place 6113 patients attended the dispensary for treatment Every facility is given for the carrying out of practical work Undergraduate and Post-graduate courses are arranged at any time Certificates of attendance at this hospital are recognised by all the licensing bodies Terms Undergraduate courses, 8 guineas for certified course (6 months), 3 guineas per month for uncertified course; Post-graduate courses, 3 guineas per month, 1 guinea for each extra week Clinical Lectures are given daily and Oral Lectures four times per week The L M Diploma is given by special examination which is held three times a year Entrance fee 1 guinea, certificate 4 guineas During the past year 98 graduates availed themselves of the Post-graduate courses Further particulars can be obtained from the Master, Dr P T McArdle, 27, Merrion-square; or from the Secretary, Holles-street, Dublin

Richmond, Whitworth, and Hardwicke Hospitals (House of Industry Hospitals), Dublin*—These hospitals contain 330 beds—130 for Surgical cases, 80 for Medical cases, 78 for Fever and other Epidemic Diseases, and an Auxiliary Wing of 42 beds A Resident Physician and a Resident Surgeon are appointed each half year and are paid for their services 20 Resident Clinical Clerks are appointed each quarter and provided with furnished apartments, fuel, &c These appointments are open not only to advanced students but also to those who are qualified in Medicine and Surgery The Dressers are selected from among the best qualified of the pupils without the payment of any additional fee Women students are eligible for election as residents and special apartments are reserved for their use For prospectuses apply to Mr Adams McConnell, F.R.C.S.I., Hon. Secretary, 69, Fitzwilliam-square, Dublin

Rotunda Hospital, Dublin—This institution is the largest combined gynæcological and maternity hospital in the British Empire Over 4000 confine-

s
s
a
M
ar
wı
As
th
Ma
ın
ıs g
Fee
oth
mor
mon
Dr

Ro
enlarg
specia
disea
tary
where
of dise
There
gynæcc
out-pat
to atten
Six resid
A House
annually

Roya
—Estab
In-patien

Dr St
Establish
Patients
dispensa
44,529
pupils,
bedroom
a reason
Departm
informati
dency can
Hospital

St Vincen
—Established
Medicine and
Special classes
Pathological an
given every Thu
Laryngoscope ar
Saturday Meda
medal in Medicin
Surgery are offere
summer session,
Surgeon McArdle
there was opened
new Pathological
Secretary, 28, Fitz

We take this op
of Government D
Secretaries of the
kind cooperation
information conta
to date.

---

* No returns.

hering

e Schering Laboratories.

mon
ARK

SEDATIVE AND ANALGESIC

and forms, in most cases, an efficient
sic, it has none of the ill effects associated
lnesses its administration can be safely

, crises and lightning pains of tabes,
iatism, before and after operations,
laches and those of acute oöphoritis,

les of 100 × 6 gr
250 × 6 gr
500 × 6 gr

Medinal
TRADE MARK

l known hypnotic and sedative is freely
n water and is, therefore, rapidly absorbed
inated so that there is no danger of a cumula-
c effect It is indicated in insomnia due to
enia, hysteria conditions of excitement and
n, dementia, melancholia, etc
ven safely to old and debilitated patients,
children, and to those suffering from
ase
oduced promptly, and is refreshing

n solution for hypodermic injection
e conveniently given otherwise

s of 10 × 7½ gr and 10 × 5 gr
s of 100 × 7½ gr and 100 × 5 gr
250 × 7½ gr and 250 × 5 gr
and ¼-oz Boxes
Cartons containing
amps of 5 c cm

d.,
E.C 3

THE LANCET.

LONDON: SATURDAY AUGUST 28, 1926

EXAMINATIONS.

It will be seen if reference is made to the explanatory note with which the Students Number starts that the first part of the Number deals with the various patterns by which qualification can be obtained for the legal practice of medicine The choice of career which depends upon such qualification should be guided by consultation of the articles which follow. dealing with the conditions of appointments in the State and Public Services and with the provisions for the qualified man to attend special courses and to pass special tests where success will give him the right or at any rate, a winning opportunity to obtain employment in accordance with his chosen bent Examinations as standardised by the G M C —how, when. and where they must be sat for, and what are the tests to be surmounted—form the general text of the main part of the Students Number, and we are reminded by various articles and letters in the press that physical and mental disorders may be associated with the struggles of a certain percentage of examinees And it is a truth that in the attempt to become doctors, some aspirants become patients We do not want to exaggerate the fact or to support the amiable family theory that when the name of one of its members is absent from a pass-list the condition of his or her health accounts satisfactorily for the catastrophe But on the other hand, these breakdowns among students, and especially among medical students. do occur under the nervous stress of impending examinations. the thing happens and should not be minimised Those in charge of the strenuous courses which precede our professional examinations will do well to keep the matter in mind We know that many examiners are influenced by a wise appreciation of the strain put upon a jumpy class of candidates but kindness cannot condone inability to respond to tests It is the inability which needs the preventive treatment of previous counsel

Five years ago the registration of medical students rose to the abnormal height of 3420, and there became reason for an apprehension that a point was being reached where the bulk of men and women requiring medical education could not be dealt with by the machinery in existence to say nothing of the implied threat to professional careers from the mere number of the entrants who would later have to live by the practice of their science and art Until that time those who conceived perpetually that the profession was overcrowded had few facts to support their theory they were being misled by the circumstance that there were certain centres where many doctors had congregated for various reasons and they conceived the local congestion and its resulting acute competition to be a general malady whereas it was only sporadic But the great recruiting of 1919, the reasons for which we can all surmise could not be viewed with equanimity. even by those who knew the old assertion of overcrowding to be largely incorrect for an unmistakable testimony to the public esteem in which medicine was held was becoming a practical embarrassment and justifying fear for the economic position A graph illustrating the figures (see p 480) indicates that the various factors which led to the multiplication of students have lost their force. and there is no reason to think that the medical profession will be overcrowded in the immediate future Further. we do not know that the unusual addition to the roll of qualified men, corresponding with the swelling of the students ranks has brought any undue consequences with it. even with the increased number of doctors that we now have the medical profession is not to-day redundant, for the amount of work that has to be done steadily swells as does the number of varying avenues which have to be traversed by the followers of medicine This is the fact which should be remembered when we are told dogmatically that examinations must be stiffened to keep out the weaker candidates Things are not as simple at the threshhold of a learned profession as they are at the doors of a test match On these occasions unusual barriers can be erected and stringent measures taken to regulate ingress when too many persons are expected And the precautions have a logical effect Access to entertainments is strictly guarded in defence of those who have paid their money—translated into terms of examinations, for those who have learned their work But examinations especially in such a far-ranging collection of subjects as medicine do not play the same practical rôle A serious proportion of those who have paid with their industry and intelligence for the opportunity to enter the qualified ranks do not succeed assuredly or promptly, and it is this high element of uncertainty which conduces to the failure of nervous students No general relaxation of standard is desired from the authorities while, from the economic aspect a stiffening can be justified on public grounds by the satisfactory number of candidates but the ideal part which the examinations should play in the curriculum has not yet been found, despite repeated and real research And the uncertainty of the results of these tests does affect some examinees seriously.

We can welcome our recruits with the assurance that there is plenty of work for them to do, and we can congratulate them because that work has to be done in every section of professional endeavour in fairer and more generous circumstances than used to prevail in times not far away With regard to contract practice, hope lies in that betterment of organisation which experience is bringing. and which has been in the minds of many since the passage of the National Insurance Acts. the position does not promise to improve pecuniarily and consolation must be sought in the reflection that, as such practice stands at present, it is hugely better in its material results than it was 20 years ago when it was admittedly scandalous The Services only in the last few weeks, have made drastic revision of their regulations in favour of their medical staffs, and the authorities at medical schools will certainly have noted the opportunities now offered to their pupils Elsewhere salaries have risen and medical officers. though poorly paid in comparison with those who discharge other public duties receive better terms and their terms have not been wholly dictated by the general rise in prices but have followed on a wider appreciation by the public of the meaning and value of preventive treatment and organised therapeutics These are solid reasons for congratulating our students upon their choice of a career If entrance to the arena is fenced around with difficulties there is zest in the surmounting of these And the return for success is not the pleasure of looking on, but the privilege of playing

NAVAL MEDICAL SERVICE

IN the Navy the young medical officer sees the world in congenial company and with an assured position, the pay is good, the pensions are commensurate, and the opportunities offered now for scientific work are real, while, if they are taken, promotion awaits the officer on grounds of professional merit

As a result of the recommendations of the Inter-Departmental Committee on the Medical Branches of the Fighting Services, the following changes in the conditions of service have been approved. These changes were designed to take effect from July 1st, 1926, and will do so as soon as the necessary arrangements can be made —

(1) *Increase in the Establishment of Surgeon Captains* The maximum number of Surgeon Captains authorised to be borne will be increased from 16 to 20 Two Surgeon Captains will be appointed to the R N Hospital, Haslar, as Professors of Medicine and Surgery, respectively, on instructional duties connected with the general courses described below The appointment of Director of Medical Studies, Naval Medical School, R N College, Greenwich, will in future be held by a Surgeon Captain, and a Surgeon Captain will be appointed to the R N Hospital, Malta, as second in charge

(2) *Increase in Specialists' Allowances and Number of Appointments* —The number of Specialist appointments will be increased from 46 to 60, and the new appointments will include Specialist posts in Medicine, Surgery, Radiology, and Hygiene The allowance payable to holders of Specialist appointments will be increased from 2*s* 6*d* to 5*s* per day, as from July 1st, 1926

(3) *Grant of Charge Pay* —The grant of charge pay will be made as from July 1st, 1926, on the following scale for Medical Officers in charge of hospitals and sick quarters Surgeon Rear-Admirals and Surgeon Captains, 10*s* a day, Surgeon Commanders, 5*s* a day

(4) *Professional Courses* —(*a*) *General Courses* Every Officer below the rank of Surgeon Captain, except when he has just vacated an appointment at a Home Hospital or is due to take his promotion course, will be appointed, if his services can be spared, once in every four years to the R N Hospital, Haslar, for a course of instruction of not less than four months' duration in Clinical Medicine and Surgery and allied subjects At the end of the course, instead of being placed on Unemployed Time, the Officer will be appointed for duty at one of the R N Hospitals at Haslar, Chatham, or Plymouth, unless or until he receives an appointment elsewhere (*b*) *Specialist Courses*. Every Officer selected to hold a Specialist appointment will, provided his services can be spared, undergo a course of not less than six months' duration in his special subject at a civil hospital in London or other teaching centre, and will subsequently undergo a course of three months' duration in that subject every four years while he is employed as a Specialist (*c*) *Senior Medical Officers' Courses* The existing Senior Medical Officers' Courses will to a large extent be superseded by the General and Specialist Courses described above, and their number will therefore be capable of reduction without detriment to the professional opportunities in the Service, but the reduction will not be made until the new courses have been in operation for some years The institution of General and Specialist Courses will necessitate an increase in establishment, and they cannot therefore be put into full operation until this increase has taken place, but the new arrangements will be inaugurated as soon as possible

(5) *Time in Hospital Appointments* —In the case of Officers entering the Naval Service on or after July 1st, 1926, the following rules for counting time in hospital appointments will apply —

An Officer who enters the Service on or after July 1st, 1926, and who has held, for a period of not less than one year before the date of his entry into the Service, a resident appointment as Medical or Surgical Officer in a civil hospital after becoming a qualified medical practitioner, to be eligible, at the discretion of the Admiralty, to have his seniority antedated by not more than one year, provided that the appointment is one recognised by the Admiralty for this purpose, but this concession will not ordinarily be granted where the interval between the termination of the hospital appointment and the date of entry into the Service exceeds six months The period of not less than one year in a "resident" appointment may, at the discretion of the Admiralty, include a period of not more than six months spent in a "non-resident" appointment recognised by the Admiralty

The increase of seniority allowed under the above conditions shall not render an Officer eligible to receive pay before the date of his actual entry into the Naval Service, but the time concerned shall reckon for increase of full, unemployed and half pay while on the active list, and retired pay or gratuity on retirement or withdrawal, provided in the case of a gratuity, that the Officer has completed three years' full pay service in the Royal Navy, that is, exclusive of the time spent as Resident Medical or Surgical Officer in a civil hospital

In the event of a temporary Officer, or an Officer entered for short service (*v infra*) being transferred to the permanent list on or after July 1st, 1926, he may be granted the above concession, at Admiralty discretion, under similar conditions to those applicable to candidates who may enter the permanent service direct, except that the time shall not count for gratuity on retirement or withdrawal

A candidate who is over the normal age limits for entry may be entered, notwithstanding provided that the period of antedate for which he is eligible brings him, if deducted, within the ordinary limits

Rank of Surgeon Lieutenant-Commander will be granted to surgeons at the expiration of six years from date of entry, and the point upon which stress should be laid is that special promotion can be made in cases of conspicuous professional merit, which is thus placed on a par with general service Six years later the period of promotion to Surgeon Commander is reached, after the qualifying examination has been passed, when again special promotions can be made for conspicuous professional merit as well as for distinguished service ; but promotions are limited in number, save, of course, for gallantry in action This recognition of professional attainment should prove a very real incentive to progressive scientific work The same principle prevails in the higher ranks. Promotions to Surgeon Captain and later to Surgeon Rear-Admiral are made strictly by selection, but are confined to officers who prove fitted, both professionally and as administrators, for this rank

Naval life may lead to opportunities for putting into practice much of what has been learned in the clinical wards of a hospital Further, the opening for preventive medicine is large and many-sided, while appointments to the large shore establishments enable medical officers to keep their work modern New chemical explosives as well as the extraordinary behaviour of common articles under extraordinary conditions of stowage, furnish perpetual problems and surprises for the medical officer The health lectures which he is bound to deliver will often afford a starting point of work that may develop into great professional interest Numerous changes have been introduced during the last 20 years into the naval dietary, many of which were the outcome of representations and research by naval medical officers The work wants carrying on, for much of it has gone to show that the food problem is very complicated. Every medical officer on board ship should make himself acquainted with food values and the human powers of assimilation under varying conditions of work and climate, and here there is ample scope for research The modern requirements of gunnery and navigation necessitate precision in their use and have made ophthalmology a valuable subject for study in the Navy. The physical training of both officers and men is based on physiological axioms which are peculiarly the field of the medical officer. Lastly, there is the whole field of venereal and tropical disease

The young medical officer need not be afraid that his work will be without scientific interest if he takes the opportunities offered him.

Conditions of Service.

The rates of pay of the Medical Service are subject to periodical revision in the light of the cost of living, and it is necessary to indicate as closely as practicable the extent and methods of the periodical revision.

In order that students may be under no misapprehension regarding their remuneration should they decide to join the Naval Medical Service, it should be clearly understood that when the pay of naval officers was revised in 1919 it was definitely laid down that 20 per cent of the rates of full pay, unemployed pay, half pay, and retired pay was to be considered as due to the high cost of living in 1919, and that it should be subject to change periodically either upwards or downwards according as the cost of living rose or fell. The first revision took place in July, 1924 when all the rates were reduced by approximately 5½ per cent. and further revisions (not necessarily reductions) are due every three years—i e in July, 1927, July 1930, and so on.

The pay of the Naval Medical Service is shown in two tables one showing the scale introduced in 1919, which is described as the standard rates and of which 20 per cent is variable, and the other showing the actual scale in force from July 1st, 1924, to June 30th 1927

For the time being the regulations for entry by examination into the permanent service are in abeyance, but a short-service scheme providing for transfer to the permanent service has been inaugurated. The regulations for the entry of surgeon lieutenants under this scheme provide for the usual qualifications of registration, good character physical fitness, and age—the age not to exceed 30 years The conditions of service are a three years' engagement with an option of a further year, to serve when and where required under the general rules of the service as regards discipline, and to rank with, but after, surgeon lieutenants in the permanent service, and to receive two calendar months' notice of services being no longer required.

As from July 1st, 1924, the pay is £1 5*s* (standard rate £1 6*s* 6*d*) per day or £456 5*s* (standard rate £483 12*s* 6*d*) per annum while there is a gratuity, not subject to variation with the cost of living, on discharge of £8 6*s* 8*d* for each completed month of service All officers during service are accommodated and victualled on the usual service scale or receive lodging money and provision allowance in lieu, at rates subject to periodical revision. The present rates of lodging money and provision allowance are £80 and £55 a year respectively Unlike permanent officers medical officers entered for short service are not liable to periods of unemployment on unemployed or half pay or eligible for retired pay in respect of service If however such an officer were invalided for a cause certified by the competent naval medical authority as attributable to the conditions of service, he would be eligible for disability retired pay in lieu of the gratuity on discharge referred to above Similarly in the event of his death from a cause attributable to the service his widow and children would be treated in the same manner as the widow and children of an officer on the permanent list There is an equipment allowance for ordinary uniform of £50, but the officer provides himself with a pocket case of instruments and a stethoscope

A short-service surgeon lieutenant after six months' service, on application to the Secretary of the Admiralty, may be considered for transfer to the permanent service on a satisfactory report being received from the senior medical officer of the Squadron, Hospital or Depôt in which he has served or is serving as to his professional ability, and a favourable report from his commanding officer as to conduct. Such candidates must have been under the age of 28 on joining for short service, and officers so transferred will not be eligible for the gratuities provided They will be permitted to count their seniority from date of entry for short service for purposes of promotion and for increment of full pay, and similarly they will be permitted to count their service from the date of entry for purposes of retired pay, but for purposes of retiring gratuity on the permanent officers' scale their services will be reckoned only from the date of transfer to the permanent list, this date being that of receipt in the ship or establishment in which the officer is serving of the order for his transfer to the permanent list Until that date he will retain his temporary rate of pay.

If a short-service lieutenant transfers to the permanent service he will then come under the following conditions of pay and pensions.—

Standard and Present Rates of Pay

Rank	Standard rate						Rate from July 1st, 1924					
	Year of 365 days			One day			Year of 365 days			One day		
	£	*s*	*d*	£	*s*	*d*	£	*s*	*d*	£	*s*	*d.*
Surg Lieut on entry	438	0	0	1	4	0	413	13	4	1	2	8
After 3 years	529	5	0	1	9	0	498	16	8	1	7	4
Surg Lieut.-Comdr on promotion	638	15	0	1	15	0	602	5	0	1	13	0
After 3 years	675	5	0	1	17	0	638	15	0	1	15	0
Surg Comdr on promotion	821	5	0	2	5	0	775	12	6	2	2	6
After 3 years	894	5	0	2	9	0	845	11	8	2	6	4
" 6 "	967	5	0	2	13	0	915	10	10	2	10	2
" 9 "	1040	5	0	2	17	0	982	9	2	2	13	10
Surg Capt on promotion	1186	5	0	3	5	0	1122	7	6	3	1	6
After 3 years	1277	10	0	3	10	0	1207	10	10	3	6	2
" 6 "	1368	15	0	3	15	0	1292	14	2	3	10	10
" 9 "	1460	0	0	4	0	0	1380	18	4	3	15	8
Surg Rear-Admiral	1916	5	0	5	5	0	1809	15	10	4	19	2

On first appointment to the Service, medical officers will receive full pay from date of appointment, but subject to the provisions of Article 1347 of the King's Regulations.

Officers of the permanent service are eligible during periods of unemployment for unemployed pay and half pay The rates of unemployed pay and half pay, and the conditions under which they are granted are the same as in the dental branch and are set forth in detail later in this article

Flag Allowances

An allowance of 5*s* a day in addition to full pay is granted to the Senior Medical Officer of a flagship bearing the flag of a Commander-in-Chief An allowance of 2*s* 6*d* a day is granted to the Senior Medical Officer of a ship bearing other flags or broad pendants.

Standard Rates of Retired Pay

Compulsory retirement will be as follows.—

(i) Surgeon Rear-Admirals retire at the age of 60 with retired pay at the rate of £900 per annum plus £22 per annum for each year's service over 27 years counting for retired pay subject to a maximum rate of £1010 per annum. If however, less than 27 years' service counting towards retired pay is rendered a deduction of £22 per annum is made for each full year wanting to complete that period, subject to a minimum of £700 per annum

(ii) Surgeon Captains retire at the age of 55 Maximum retired pay, £900

(iii) Surgeon Commanders retire at the age of 50 Maximum retired pay, £700

(iv) Surgeon Lieutenant-Commanders and Lieutenants retire at the age of 45 Maximum retired pay, £450

Subject to these maxima, the rates of retired pay for Surgeon Captains, Surgeon Commanders, Surgeon Lieutenant-Commanders, and Surgeon Lieutenants are as follows —

Age on retirement	Retired pay	Period of service (years) counting towards retired pay	(A)		Age on retirement	Retired pay	Period of service (years) counting towards retired pay	(A)	
			Addition	Deduction				Addition	Deduction
	£ (p a)		£ (p a)	£ (p a)		£ (p a)		£ (p a)	£ (p a)
55	790	24	22	15	47	562	20	15	15
54	765	24	22	15	46	525	20	15	15
53	742	23	22	15	45	487	19	15	15
52	720	23	22	15	44	450	19	15	15
51	697	22	22	15	43	412	18	15	15
50	675	22	15	15	42	375	18	15	15
49	637	21	15	15	41	337	17	15	15
48	600	21	15	15	40	300	17	15	15

(p a) = per annum

(A) Addition for each full year's service in excess of that specified in column 3 or deduction for each full year wanting to complete that period of service—addition or deduction limited to five years in each case

Twenty per cent of all the rates of retired pay referred to above is variable with the cost of living, and the rates at present in course of payment are approximately 5½ per cent below those given above

DENTAL BRANCH

1 The Naval Dental Service offers similar opportunities to qualified dental surgeons except that higher rank than that of the recently instituted Surgeon Captain (D) is not open to them They are provided with suitable surgery accommodation equipped with modern appliances and supplied with all material required for their work and there is every opportunity for them to maintain a high standard of professional skill

2 Candidates are required to produce certificates of birth, registration, and of character, and must be physically fit for active service anywhere An outfit allowance of £50 is payable to officers finally entered and commissioned The rank of Surgeon Lieutenant-Commander (D) is attained on the completion of six years' satisfactory service Promotions to Surgeon Commander (D) and Surgeon Captain (D) are made strictly by selection from the rank next below and are confined to officers who prove fitted in every respect for these ranks The present establishment of dental officers is 1 Surgeon Captain (D), 3 Surgeon Commanders (D), 60 Surgeon Lieutenant-Commanders (D) and Surgeon Lieutenants (D)

3 Provision has been made for candidates who, at the time of passing the examination, hold or are about to hold an appointment as Dental Officer in a recognised Civil Hospital The time concerned, provided it does not exceed six months, may reckon for increase of full pay while on the active list Surgeon Lieutenant-Commanders (D) of over two years' seniority will be eligible for a three months' Post-graduate Course while borne on full pay

4 As in the case of the medical branch, 20 per cent of the rates of full pay, unemployed pay, half pay, and retired pay introduced in 1919 is considered as due to the high cost of living in 1919 and subject to change periodically either upwards or downwards according as the cost of living rises or falls The first revision took place in July, 1924, when all the rates were reduced by approximately 5½ per cent, and further revisions are due every three years—i e in July, 1927, July, 1930, and so on The following table and paragraphs show the standard rates introduced in 1919, of which 20 per cent is variable and the present rates which will operate from July 1st 1924, to June 30th, 1927 The rates of full pay and half pay, &c of the Surgeon Captain (D) are not at present available but with regard to other ranks they are as follows —

Full Pay

Rank	Standard rate						Rate from July 1st, 1924					
	Year of 365 days			One day			Year of 365 days			One day		
	£	s	d	£	s	d	£	s	d	£	s	d
Surg Lieut (D) on entry	401	10	0	1	2	0	380	4	2	1	0	10
After 3 years	492	15	0	1	7	0	465	7	6	1	5	6
Surg Lieut Comdr (D) on promotion	593	2	6	1	12	6	559	13	4	1	10	8
After 3 years	629	12	6	1	14	6	596	3	4	1	12	8
„ 6 „	666	2	6	1	16	6	629	12	6	1	14	6
„ 9 „	730	0	0	2	0	0	690	9	2	1	17	10
Surg Comdr (D) on promotion	775	12	6	2	2	6	733	0	10	2	0	2
After 3 years	848	12	6	2	6	6	803	0	0	2	4	0
„ 6 „	921	12	6	2	10	6	869	18	4	2	7	8
„ 9 „	994	12	6	2	14	6	939	17	6	2	11	6

On first appointment to the Service, Dental Officers will receive full pay from the date of appointment, but subject to the provisions of Article 1347 of the King's Regulations, 1913

Dental Officers are eligible for the same rates of lodging and provision allowances as other officers of equivalent rank and are entitled to the same privileges The rates of half-pay are —

Unemployed Pay and Half Pay —A distinction is to be drawn between—

(*a*) Officers awaiting employment

(*b*) Those who are permitted for private reasons which the Admiralty regard as satisfactory to refuse an appointment or to have their appointment cancelled or who are unemployed at their own request or in consequence of misconduct

In the former case—

(*a*) Officers are to receive unemployed pay as follows —

For the first six calendar months full pay of rank (without allowances)

For the next six calendar months —

Rank	Standard rate per diem			Rate per diem from July 1st, 1924		
	£	s	d	£	s	d
Surgeon Lieutenants (D)	0	17	0	0	16	0
Surgeon Lieutenant Commanders (D)	1	2	6	1	1	3
Surgeon Commanders (D)	1	7	6	1	6	0

Thereafter —Half the full pay of their rank and seniority on the Executive Officers' scale, namely —

Surgeon Lieutenant (D)	0	8	6	0	8	0
„ „ of 4 years' seniority	0	10	0	0	9	5
Surgeon Lieutenant Commander (D)	0	15	0	0	14	2
„ „ of 3 years' seniority	0	16	0	0	15	0
„ „ of 6 years' seniority	0	17	0	0	16	1
Surgeon Commander (D)	1	0	0	0	18	11
„ „ of 3 years' seniority	1	2	0	1	0	9
„ „ 6 „ „	1	4	0	1	2	8
„ „ 9 „ „	1	6	0	1	4	7

Unemployed pay will not, however, be granted in cases where an officer is undertaking continuous professional work for which payment is made

In the latter case, (*b*), Officers may receive half the full pay of their rank and seniority on the Executive Officers' scale

Periods during which unemployed Full Pay or Unemployed Pay are received will only count as half-pay time—that is, as one-third of full service

An Officer who is permitted, for private reasons, to decline an appointment, or to have his appointment cancelled will not be entitled to any Unemployed Pay In such cases, Officers may be placed on Half-Pay

The conditions of retirement, Widows' Pensions, Leave, &c, are the same as for medical officers of equivalent rank and seniority

Arrangements are also made whereby officers may be allowed to withdraw from the Service after four years' service and receive gratuities on the following scale :—

Gratuities will be awarded on retirement and withdrawal on the undermentioned scale

Rank		Gratuity £	s	d
Surgeon Lieutenant (D), Surgeon Lieutenant-Commander (D), and Surgeon Commander (D)				
After 4 years' full-pay service		500	0	0
„ 8 „ „	including service allowed by paragraph 3	1000	0	0
„ 12 „ „		1500	0	0
„ 16 „ „		2250	0	0

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS

THE publication of a new Royal Warrant on June 29th 1926 has gone a long way towards removing the alleged grievances of officers of the Corps and this Service can again be recommended as a career to young medical men Competitive examinations for regular commission, which have been in abeyance for some time will again be held half-yearly in January and July. These examinations in medicine and surgery are entirely of a clinical and practical character, partly written and partly oral

The regulations for admission giving full details should be obtained from the Under Secretary of State (A M D 1) War Office, Whitehall London, S W 1 and carefully studied A personal interview with a representative of the Director-General, Army Medical Services is readily obtainable

The rates of pay and allowances are good, the opportunities of post-graduate study are generous, and the work is varied responsible, and interesting The gratuities after certain periods of service enable an officer should he so desire to leave the Service with a capital sum large enough to go a long way towards re-establishing himself in civil life and further, the knowledge of the world and the comradeship of his fellow officers that he has gained in the Army will be of no small value to him

New entrants are commissioned in the rank of Lieutenant, and the first six months of service are spent on probation during which time they undergo in addition to their Military training at the Royal Army Medical Corps Depot at Aldershot a probationary course at the Royal Army Medical College in London in Hygiene Pathology Tropical Medicine. Military Surgery Recruiting the prevention and treatment of Venereal Disease, and the elements of Army Administration At the end of this course and after qualifying at the necessary examinations their commissions are confirmed and they take their places in seniority according to the total marks obtained at all examinations up to that date Officers Training Corps service with possession of Certificates A' or B (Medical) carry a definite value in marks in this total

An entrant who is holding or about to hold at the time of the entrance examination a resident House Appointment at an approved Civil Hospital may be seconded while holding such an appointment up to a maximum period of 12 months A candidate who has held such an appointment within six months of entry may be granted an antedate up to 12 months in respect of the period the appointment was held This secondment and antedate counts in all respects as commissioned service except that pay will not be issued for that period

After a total period of one year s service at home the young officer goes abroad probably to India, for his first tour of foreign service Here he gains his first practical experience of tropical disease and tropical hygiene and possibly his first experience of active service on the frontiers of India His tour abroad lasts five years with probably six months' leave home during that time On returning home the R A M C officer has the opportunity to decide whether he will remain in the Corps or accept the gratuity of £1000 after seven years' service and try his fortune in civil life If he elects to remain he will between his eighth and twelfth year of service undergo a course of post-graduate study at the Royal Army Medical College and the London Hospitals of five months' duration, followed by a course of study of a special subject selected by himself, provided he has shown special aptitude in the post-graduate course or during his previous service During this period of study he remains on full pay and the fees for the courses are paid by the State. When qualified in his special subject the officer becomes entitled to specialist pay at 5s per day when holding a specialist appointment After this post-graduate course the officer probably proceeds abroad again and promotion to Major rapidly ensues and from that time onward the officer receives regular successive increases of pay, and is eligible for additional and charge pay as well. The Directorates of Hygiene and Pathology and the appointment of two serving officers as Consultants in Medicine and Surgery have been instituted and have proved a marked success all these appointments being of the rank of Colonel or Major-General.

Under these conditions the possibilities for good workers are very great in the Royal Army Medical Corps There is scope for original research in tropical disease, in preventive medicine and in bacteriology, as well as in the large clinical field open to the specialist in Medicine Surgery or Gynæcology, in Venereal Disease and in Ophthalmology Child welfare is also undertaken systematically by officers of the Royal Army Medical Corps

At the same time instruction in administration is continuous The Royal Army Medical Corps is essentially organised for war, and one of the lessons of the Great War was that trained administrators must exist to enable the fullest benefit to be obtained from professional talent Many appointments carrying administrative responsibility are open to those officers who display capacity for this duty All officers must be prepared to undertake command and to have a knowledge of Army administration especially in war. Equally important is the technical training of the Non-commissioned Officers and men of the Corps in such ' trades ' as Trained Nurse Nursing Orderly. Masseur Radiographer. Operating Room Assistant Laboratory Assistant Hospital Cook Dispenser &c This training is carried out by the Officers and Nursing Sisters and opens a large field for those who have ability in lecturing and teaching as well as the power of influencing men

Promotion

Promotion takes place automatically to Captain after 3½ years and to Major after 12 years service, provided the officer is qualified and recommended for promotion Promotion to the higher ranks is by selection from those senior in the rank below but special promotion by brevet or otherwise is open to officers of the Royal Army Medical Corps

Additional Pay and Charge Pay for Officers of the R A M C.

(1) Officer not above the rank of lieutenant-colonel, while acting as specialist in a post considered by Our Army Council to merit the grant of additional pay, according to subjects or groups of subjects as under

Operative Surgery advanced Medicine, Ophthalmology Gynæcology and Midwifery Dermatology, and Venereal Disease Otology, Laryngology, and Rhinology, Radiology, Anæsthetics, Mental Diseases, Hygiene, Pathology; subjects other than above, at the discretion of Our Army Council 5s daily

(2) (a) Officer in charge of a hospital —If the number of equipped beds as certified by the Deputy Director of Medical Services exceeds—

50 beds	. 2s 6d daily	300 beds	7s 6d daily.
150 „	3s 0d „	500 „	10s 0d „

Officer in charge of a medical or surgical division of a general hospital with not less than 300 beds—half the above rates

	Daily. s d
(b) Senior medical officer, Royal Arsenal, not exceeding	10 0
(c) Officer in command of the depôt, Royal Army Medical Corps	5 0
(d) The senior officer of the Army Medical Services with an army in the field A rate to be fixed by the Army Council according to the magnitude of the charge	
(e) The officer, if under the substantive rank of colonel, holding the appointment of senior medical officer in a command abroad, or of assistant director of medical services, if the number of soldiers is 1500 or upwards	5 0
(f) Adjutant R A M C Depôt	5 0
(g) Adjutant R A M C (Territorial Army)	2 6

The Army Dental Corps

The Corps is administered by the Director-General, Army Medical Services It is a joint service for the Army and Royal Air Force and personnel is required to serve under either force and be interchangeable Officers and other ranks posted for duty with the Royal Air Force will perform their duties under the Regulations of the Royal Air Force for the employment of dental personnel, but the conditions in the following tables apply equally in either force Promotion is carried out on one general list The regulations for admission to the Army Dental Corps should be obtained from the Under-Secretary of State, War Office, and carefully studied.

Pay and Allowances

Rank	Pay per diem *	Rations †	Servant	Married			Unmarried		Approximate daily total		Approximate yearly total	
				Lodging	Fuel and light (average)	Furniture allowance	Lodging	Fuel and light (average)	Married	Unmarried	Married	Unmarried
	£ s d	s d	s d	s d	s d	s d	s d	s d	£ s d	£ s d	£	£
Lieutenant	1 0 10	1 7	2 0	3 6	1 7	2 0	2 3	1 3	1 11 6	1 8 0	575	511
Captain—	1 5 6	1 7	2 0	4 5	3 3	2 0	3 0	1 9	1 18 10	1 13 10	709	617
After 8 years c s	1 8 4	1 7	2 0	4 6	3 3	2 0	3 0	1 9	2 1 8	1 16 8	760	669
After 10 years c s	1 10 8	1 7	2 0	4 6	3 3	2 0	3 0	1 9	2 4 0	1 19 0	803	712
Major—	1 15 6	1 7	2 0	4 6	3 3	2 0	4 0	2 6	2 8 10	2 5 7	891	832
After 15 years c s	2 0 2	1 7	2 0	4 6	3 3	3 0	4 0	2 6	2 13 6	2 10 3	976	917
After 18 years c s	2 2 6	1 7	2 0	4 6	3 3	3 0	4 0	2 6	2 15 10	2 12 7	1019	960
After 20 years c s	2 7 4	1 7	2 0	4 6	3 3	2 0	4 0	2 6	3 0 8	2 17 5	1107	1048
Lieut -Colonel	2 14 4	1 7	2 0	4 6	3 3	2 0	4 6	2 6	3 7 8	3 4 11	1235	1185
After 3 years c s as such	2 19 0	1 7	2 0	4 6	3 3	2 0	4 6	2 6	3 12 4	3 9 7	1320	1270
Colonel	3 6 2	1 7	2 0	5 6	4 5	2 0	5 6	2 11	4 1 9	3 18 2	1492	1427
Major-General	4 9 10	1 7	4 0	11 0	5 7	2 0	11 0	4 0	5 14 0	5 10 5	2081	2015

c s =commissioned service

* Pay Warrant rates as amended by A O 196/26 less 5½ per cent from July 1st, 1924, vide A O 93 and 204 of 1924 The Pay Warrant rates are subject to revision to an extent not exceeding 20 per cent according to variation in the cost of living The next revision takes place from July 1st, 1927

† Rates of allowances vary from time to time and issues are subject to conditions laid down in the Allowance Regulations

Retirement and Retired Pay.

The following are the rates of pension and retired pay —

1. Retired pay will consist of two parts (a) a service element based on the officer's total service, (b) a rank element for the rank from which the officer retires An officer with less than 20 complete years' service will not be eligible for retired pay

2 The scale will be as follows, subject to the reduction of 5½ per cent referred to below —

(a) Service element —£15 a year for each completed year of service as a medical officer

(b) Rank element —

Rank from which retired	After completing 1 year's service in the rank	After completing each additional year's service	Maximum rank element
	£	£	£
Major	12	12	120
Lieutenant - Colonel	150	30	240
Colonel	290	50	390
Major General	440	50	540
Lieutenant - General	590	50	690

The retired pay of an officer retiring with less than one complete year's service in the rank from which he retires will be assessed as though he had retired from the rank below

Maximum rates of retired pay (a) and (b) together —

	£		£
Captain and Subaltern	300	Colonel	800
Major	450	Major-General	1000
Lieutenant-Colonel	600	Lieutenant General	1200

The above rates are those laid down in the Pay Warrant They have been reduced by 5½ per cent as from July 1st, 1924

3 Officers with seven and less than 20 years' service as medical officers may be permitted to retire with a gratuity in accordance with the following scale —

After 7 years' service as a medical officer	£1000
" 3 " " in the rank of Major	£2800
" 6 years' service as a medical officer in the rank of Major	£3500

Officers *Appointment and Promotion*

1 Commissions as Lieutenants in the Army Dental Corps may be given to persons duly qualified under regulations approved by the Army Council

2 An officer shall be eligible for promotion to the rank of Captain on completion of three and a half years' service and to the rank of Major on completion of 12 years' service in the Corps, provided he has previously qualified in such manner as may be prescribed by the Army Council

3 Promotion to the rank of Lieutenant Colonel and Colonel to fill the establishments laid down from time to time for those ranks, shall be made by selection of the Army Council, provided the officer has previously qualified for promotion to those ranks in such manner as may be prescribed by the Army Council

4 Appointments are in the rank of Lieutenant, except in cases where service of three and a half years or more has been given as a temporary dental officer when the rank of Captain will be given Service as a temporary dental officer will count towards the three and a half years for promotion to Captain, and the 12 years for promotion to Major

Pay

The following are the rates for officers of the Army Dental Corps —

	Per diem £ s d
Lieutenant	0 18 10
Captain	1 3 8
Captain after 8 years' total service	1 6 8
Captain " 10 " " "	1 8 4
Major	1 13 0
Major, after 15 years' total service	1 17 10
" " 18 " " "	2 0 2
" " 20 " " "	2 4 10
Lieutenant-Colonel	2 12 0
Lieutenant-Colonel after 3 years' service as such	2 16 8
Colonel	3 3 10

These rates are 5½ per cent *below* those shown in the Pay Warrant, 1926, as amended by Army Order 196/26 The latter are subject to revision to an extent no

20 per cent according to variation in the cost of living. The next revision takes place on July 1st 1927.

Charge Pay

The officer in charge of the Dental Laboratories, Aldershot, receives charge pay at the rate of 5s a day if holding the rank of Captain, or 2s 6d a day if holding the rank of Major.

Allowances

The allowances for officers of the Army Dental Corps are at the same rates as for officers of the Royal Army Medical Corps.

Retirement and Retired Pay or Gratuity

(1) The rates of retired pay will be the same as for officers of the Royal Army Medical Corps.

(2) Voluntary retirement on retired pay will not be allowed until after twenty years' service.

(3) Earlier retirement on gratuity may be allowed —

After 8½ years'	service as a Dental Officer	gratuity of £1000
" 15 "		" £2000
" 18 "		" £3000

(4) Retirement will be compulsory at the age of 55 years.

(5) A lieutenant who does not qualify for promotion within three and a half years' service in the Corps will be retired, and a captain who fails to qualify for promotion to major within twelve years' service in the Corps will be retired on any gratuity for which he may be eligible under paragraph 3.

The aim of the Corps is the prevention of wastage of man power on account of dental disease or dental deficiency, and, to enable this to be carried out, every recruit is inspected by a dental officer immediately after joining and all necessary treatment carried out. The soldier will be re-inspected at least once a year and his dental efficiency maintained at the best standard possible. As recruits are not now enlisted unless they have sufficient natural teeth to enable them to masticate efficiently it is hoped that the conservative nature of the treatment they will receive will reduce considerably the percentage of artificial dentures required.

INDIAN MEDICAL SERVICE

THE entry of European medical candidates into the Indian Medical Service practically ceased with the last open competitive examination held in 1915 and it is an open secret that recruitment for the Service had for many years previous not been brisk with the result that at the present time the Service is well officered in its higher ranks and notably deficient in the ranks of those who will be called to succeed them. Among the senior and retired officers are many whose work in medicine and the allied sciences has become a household word for a generation ago the conditions of service were such as to attract men of the greatest promise in the medical schools who were rarely disappointed in a career which, without producing wealth gave unlimited opportunity for the display of talent in research and administration unfettered by irksome restriction. We may suppose, and it is the view of many senior officers in the Service that the period of depression is now passing and that the prospect is again bright for those who are fitted in physique and disposition for a medical career in India.

But the new outlook involves frank acceptance of the Indian reform scheme the essential of which is increasing participation of Indian-born subjects in the government of the country although so long as Europeans are employed in the various departments of the Indian Civil Service nothing is more certain than that there will and must remain European doctors to attend them. Entrants must also be prepared to face the fact that more time will elapse before they can hope to get into civil employ and that opportunities for private medical practice are not what they were. On the other hand it is reasonably certain that the social effect of Indianisation will not press hardly on the medical service for the reason that European doctors will be chiefly requisitioned in stations with considerable European communities. In these communities the equipment and organisation of hospitals has been steadily improving and men with professional ambition will find positions which will satisfy their aspirations. On the military side the station hospital system has rendered the position of medical officers more independent by making team-work possible and permitting of specialisation in various departments of medicine and surgery. Lastly, those who join now will have unequalled prospect of advancement in a Service which has been so depleted for 10 or 15 years or more, and the new terms of service announced by the Secretary of State for India last month assure conditions of pay pension and furlough much superior to those recently offered.

Special Recruitment

To meet the immediate need the offer has been announced of special terms for permanent commissions to a small number of medical men of European descent free to sail for India within the next few months. Candidates, who must be well qualified and between 21 and 32 years of age, will be appointed on the nomination of a selection committee before whom they will appear in person. The special advantage offered is the option of retirement on a gratuity at the end of a short specified period of service—£1000 after six years £2500 after 12 years—and if the option is not taken up the officer will continue in the Service on the ordinary pensionable footing. They will be eligible for the concessions granted in the new provisional regulations and for free passage if invalided home on sick leave during the first 12 years. Military employment only is guaranteed but they will enjoy the benefits of any conditions regarding civil employment applicable to officers appointed later to the Service as a result of decisions taken on the Lee Commission report.

The New Provisional Regulations

Competitive examination remains suspended for the present and admission to the Service is on written application to the India Office. As sound bodily health is a first essential candidates may if they wish it undergo a preliminary examination by a Medical Board which meets weekly at the India Office.

Candidates must be under 32 years of age at the time of application and possess qualifications registrable in Great Britain. Up to the present time officers have been employed both in civil and military departments and have been interchangeable between the two. At the beginning of his career an officer was employed on the military side, which has medical charge of the Indian Army. If he remained in military employ he held a post on the staff of a station hospital or a specialist post, or a post on the administrative staff of the army promotion being on a time-scale up to the rank of lieutenant-colonel and by selection to the ranks of colonel and major-general. He could however if he chose apply, after two years' Indian military service to be registered as a candidate for transfer to the civil side from which appointments are made to civil surgeoncies established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes and to the specialist services (for example public health bacteriological and research departments, and the professorships at the medical schools). Such transfers normally took place after about seven years service in military employment. In view however of the recommendations of the Lee Commission only military employment can be guaranteed to officers entering at the present time although they will be eligible for such civil employment as may become available as a result of the Lee Commission report. Executive medical officers in both civil and military employment may attend persons unconnected with Government service provided their duty admits of it. On the military side however the opportunities for private practice are not great. Service during the war as a medical or combatant officer, or in a position usually filled by an officer, counts towards promotion and pension so long as the rights of officers who have entered by competition are not interfered with

Rates of Pay

The monthly rates of pay for European officers in the Service are as tabulated below The rupee, it should be remembered, has just been stabilised at 1*s* 6*d*

Rank and service in rank	Basic pay	Overseas pay		Year of total service
		If drawn in sterling	If drawn in rupees	
	Rs	£	Rs	
Lieut	500	—	150	First
		—	150	Second
		—	150	Third
Captain —				
1 During first three years' service as Captain	650	—	150	Fourth
		15	150	Fifth
		15	150	Sixth
2 With more than three and less than six years' service as Captain	750	25	250	Seventh
		25	250	Eighth
		25	250	Ninth
3 With more than six years' service as Captain	850	25	250	Tenth
		25	250	Eleventh
		30	300	Twelfth
Major —				
1 During first three years' service as Major	950	—	—	—
2 With more than three and less than six years' service as Major	1100	—	—	—
3 With more than six years' service as Major	1250	30	300	Thirteenth and over
Lieut Colonel —				
1 Until completion of 23 years' total service	1500	—	—	—
2 During twenty-fourth and twenty-fifth years' total service	1600	—	—	—
3 After completion of 25 years' total service	1700	—	—	—
4 When selected for increased pay	1850	—	—	—

Note —Until the completion of 23 years' total service basic pay is regulated according to rank and service in rank (column 1) which, owing to the system of accelerated promotion, may be in advance of the time scale of promotion Overseas pay is regulated solely with reference to length of total service (column 5) In addition to grades there are a number of appointments as colonels on Rs 2200 to Rs 2500, according to the appointment held, and as major general on Rs 2750 The appointment of Director of Medical Services in India, carrying pay at Rs 3200 per mensem, may also be held by an officer of the Indian Medical Service

Initial rates of pay are based on the assumption that the majority of newly appointed officers will be bachelors An officer, when junior, is liable to more frequent changes of station than later on in his service, and he may therefore be put to considerable expense for transfers if he has a family Officers who are married before joining may find difficulty in living within their pay during the first few years of their service Officers in military employment, when in command or second-in-command of the larger station hospitals, receive special allowances On the civil side there are public health, bacteriological, research, and professorial appointments carrying special enhanced rates Special rates of pay are attached to administrative appointments Officers on appointment receive an outfit allowance of £50

Pensions and Allowances

The rates of pensions are as shown in the table below

There are additional pensions not subject to the above reduction ranging from £125 to £350 per annum for officers who have held high administrative appointments as colonels or major-generals

Officers on appointment are, when possible, provided with passage to India by transport When such accommodation is not available passage is provided by private steamer, or passage allowance granted if preferred The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be given free passage to India Officers are granted a certain number of return pasages home at Government expense during their career. There are special allowances for officers whilst on study leave.

Service	Rates per annum	Service	Rates per annum
After 17 years	£400	After 23 years	£620
„ 18 „	430	„ 24 „	660
„ 19 „	460	„ 25 „	700
„ 20 „	500	„ 26 „	750
„ 21 „	540	„ 27 „	800
„ 22 „	580		

Note —The above rates are subject to revision, upwards or downwards, to an extent not exceeding 20 per cent in all, on account of a rise or fall in the cost of living, as compared with the year 1919 A deduction of 4 per cent on this account has already been made A further revision may take place on July 1st, 1927, and every three years thereafter

Further particulars can be obtained on application to the Secretary, Military Department, India Office, Whitehall,-London, S W 1 Letters should be marked " Recruitment for I M S "

ROYAL AIR FORCE MEDICAL SERVICE

The Air Council attach great importance to attracting into the Service the best type of medical man, since on the capacity of the Medical Service depends in a peculiar degree the safety and efficiency of the Air Force The duties of a medical officer in the Air Force include not only the prevention and treatment of those ordinary diseases to which the personnel of any fighting service are liable, but the special study of the mental and physical stresses imposed on the airman in diverse circumstances and climates—a new branch of medicine which still provides considerable scope for research

As promotion to the higher ranks of the Service is by selection from officers who are eligible by reason of length of service, and as a certain proportion of the higher ranks will be reserved for purely scientific as opposed to administrative appointments, it will be seen that there are excellent prospects for the young medical officer who exhibits ability and energy in scientific research, as well as for those who develop a talent for administration

The work to be done, therefore, has a high professional interest which, combined with good rates of pay and allowances, offers a career for medical men which should prove both attractive and interesting The life is one which is certain to appeal to the man of wide outlook who desires opportunities for travel, sport and games, and can find interest and enjoyment in aviation

His duties will, as a matter of course, give him flying experience as a passenger, which is necessary for the proper study of the medical problems of aviation and for gaining first-hand knowledge of the conditions under which his comrades serve

The establishment will consist partly of permanent and partly of short-service officers

An officer will on first entry be granted a short-service commission for a period of three years on the active list (which may be extended to five years at the discretion of the Air Council if the officer so wishes on the recommendation of the Director of Medical Services) and of four years in the Reserve of Air Force Officers Selections for permanent commissions will be made from officers holding short-service commissions, and those who are not selected will be transferred to the Reserve at the expiration of their period of service on the active list

For those entrants who desire it the prospect of obtaining a permanent commission is approximately an even one Experience has so far shown that the officers selected have included the great majority of those desirous of, and suitable for retention in the

ROYAL AIR FORCE MEDICAL SERVICE RATES OF PAY AND ALLOWANCES

Rank	Pay *									Cash allowances in lieu of quarters, rations, and servant if not available in kind (per annum) †						Pay plus allowances per annum					
	Daily rates						Per annum (current rate)														
	Standard			Current						Married.			Unmarried.			Married.			Unmarried.		
	£	s	d	£	s	d	£	s	d	£	s	d	£	s	d	£	s.	d	£	s	d
Flying Officer	1	4	0	1	2	8	413	13	4	158	3	4	142	19	2	571	16	8	556	12	6
Flight Lieutenant—	1	6	0	1	4	6	447	2	6	206	16	8	161	4	2	653	19	2	608	6	8
After 2 years as such	1	8	0	1	6	6	483	12	6	206	16	8	161	4	2	690	9	2	644	16	8
After 4 years as such	1	10	0	1	8	4	517	1	8	206	16	8	161	4	2	723	18	4	678	5	10
Squadron Leader—	1	14	0	1	12	2	587	0	10	206	16	8	173	7	6	793	17	6	760	8	4
After 2 years as such	1	18	0	1	15	10	653	19	2	206	16	8	173	7	6	860	15	10	827	6	8
After 4 years as such	2	0	0	1	17	10	690	9	2	206	16	8	173	7	6	897	5	10	863	16	8
After 6 years as such	2	4	0	2	1	6	757	7	6	206	16	8	173	7	6	964	4	2	930	15	0
After 8 years as such	2	8	0	2	5	4	827	6	8	206	16	8	173	7	6	1034	3	4	1000	14	2
After 10 years as such	2	10	0	2	7	4	863	16	8	206	16	8	173	7	6	1070	13	4	1037	4	2
Wing Commander—	2	15	0	2	12	0	949	0	0	206	16	8	184	0	5	1155	16	8	1133	0	5
After 2 years as such	2	17	0	2	13	10	982	9	2	206	16	8	184	0	5	1189	5	10	1166	9	7
After 4 years as such	3	3	0	2	19	6	1085	17	6	206	16	8	184	0	5	1292	14	2	1269	17	11
Group Captain	3	10	0	3	6	2	1207	10	10	282	17	6	255	10	0	1490	8	4	1463	0	10
Air Commodore	4	0	0	3	15	8	1380	18	4	337	12	6	310	5	0	1718	10	10	1691	3	4
Air Vice-Marshal	5	0	0	4	14	6	1724	12	6	404	10	10	375	12	11	2129	3	4	2100	5	5

---

* Except for periods of service under Indian administration For such periods officers receive pay and allowances at rates and subject to conditions authorised from time to time by the Government of India

† These allowances are issued only when accommodation fuel and light, rations, and personal attendance are not available in kind. Normally, provision in kind is available for junior officers "Married" rates of allowances are payable only to married officers who have reached the age of 30 A colonial allowance is granted to certain commands abroad

The rates and general scheme of allowances are liable to revision as circumstances may require

Service, owing to the fact that the short-service commission with its gratuity after three or five years is in itself an attraction to many entrants who desire to enlarge their experience and outlook from the point of view of subsequently entering private practice, or who on entry, have not made up their minds to the adoption of a permanent career in the Service and subsequently find that they would prefer to return to civil life

Arrangements exist whereby in the event of a short-service medical officer being approved for a permanent commission and for whom there is no vacancy on the permanent establishment consideration may be given to his transfer to the Royal Army Medical Corps as a permanent officer If transferred his service in the Royal Air Force would count towards increments of pay and towards retired pay in the Royal Army Medical Corps

Medical officers may be allowed to count as service their time spent in resident appointments in civil hospitals under certain well-defined and generous conditions

Officers who have been selected for permanent commissions may be permitted to attend for a period not exceeding nine months a post-graduate course in general medicine and surgery, tropical and preventive medicine and other special subjects Such permission may be granted at any time when the exigencies of the Service permit during the first 16 years of service, and when attending these courses officers will receive full pay and allowances

New entrants into the Royal Air Force Medical Service will be commissioned as Flying Officers (Medical) and will be eligible for promotion to the rank of Flight Lieutenant (Medical) after two years' service Officers selected for permanent commissions will normally be promoted to the rank of Squadron Leader after ten years total service Accelerated promotion may be granted in a limited number of cases to officers who show exceptional ability after the completion of eight years' service Promotion within establishment to the rank of Wing Commander will be by selection at any period after 16 years' total service, and that of Group Captain by selection at any period after 22 years' service

There will be no competitive examination on entry; candidates must be under 28 years of age, be British subjects, the sons of British subjects and of pure European descent, be nominated by the dean of a recognised medical school or teaching hospital, and will be interviewed personally by the Director of Medical Services Royal Air Force, before acceptance. Each candidate must produce —

1 Birth certificate 2 Medical registration certificate 3 A declaration containing the following information (*a*) Age and place of birth (*b*) That he is a British subject, the son of British subjects, and of pure European descent (*c*) That he is ready to engage for general service at home or abroad as required (*d*) The qualifications he is possessed of and what medical or other appointments he has held (if any) (*e*) That he is willing to fly as a passenger whenever called upon to do so

Each candidate will be required, before acceptance, to pass a medical examination to ensure that he labours under no constitutional or mental disease or diseases or weakness, nor any imperfection or disability which may interfere with the efficient discharge of the duties of a medical officer in any climate, in peace or war

On appointment entrants will undergo an initial course of eight weeks during which they will be given instruction in the special medical aspects of aviation, the organisation and administration of the Royal Air Force and the general and special duties to be performed by officers in the Medical Branch

In order to avoid the necessity for further examinations the position of entrants in order of seniority in the Air Force List will be determined at the end of the initial course by a system of *marking and* reports on the actual work done during their instruction

Uniform and Equipment.

Medical officers are required to provide themselves with the uniform, service dress, and mess dress of their rank and with the distinguishing badges of the Royal Air Force Medical Branch The provision of full dress is entirely optional at present An allowance of £50 towards the cost of uniform is made on joining to candidates who have not had previous commissioned service in H M Forces

The emoluments of medical officers of the Royal Air Force are given in outline above The standard rates of pay and retired pay were drawn up on the basis of the high cost of living in 1919, and 20 per cent of each of the standard rates is detachable and subject to alteration either upwards or downwards as the cost of living rises or falls Under this provision the current rates now in force represent a reduction of approximately 5½ per cent on the standard rates. The next revision will take effect from July 1st, 1927. and subsequent revisions will be made at intervals of three years

RETIRED PAY

The minimum period of service qualifying for retirement on retired pay is 20 years Standard rates of retired pay are as follows —

Air Officers

Air Vice-Marshal	£790 to £1010 per annum.
Air Commodore	. £650 , £9[illegible] . .

Retired Pay of Officers below Air Rank

Age on retirement	Standard yearly rate of retired pay	Years of service	Addition for each extra year of service *	Deduction for each deficient year of service *
	£		£	£
40	300	17	15	15
41	337	17	15	15
42	375	18	15	15
43	412	18	15	15
44	450	19	15	15
45	487	19	15	15
46	525	20	15	15
47	562	20	15	15
48	600	21	15	15
49	637	21	15	15
50	675	22	15	15
51	697	22	22	15
52	720	23	22	15
53	742	23	22	15
54	765	24	22	15
55	790	24	22	15

* Limited to five years

The maximum standard rates of retired pay and the compulsory retiring ages for the several ranks are —

Rank	Yearly rate of retired pay	Compulsory retiring age
	£	
Air Vice Marshal	1010	60
Air Commodore	950	57
Group Captain	900	55
Wing Commander	600	51
Squadron Leader	500	48

Gratuities —A permanent officer allowed to retire before having qualified for retired pay may be granted a gratuity provided he has not less than ten years' commissioned service, namely —

£1500 if he has 10 but not less than 15 years commissioned service
£2500 „ 15 or more than 15 „ „ „

Short-service officers will be eligible on passing to the Reserve for gratuities on the following scale £100 for each of the first two complete years of service, £150 for each of the third and fourth complete years, and £200 for the fifth complete year, that is —

For three years' service on the active list	£350
For five „ „ „ „	£700

These gratuities will not be payable to officers granted permanent commissions, but their service on a short-service commission will count towards retired pay

COLONIAL MEDICAL SERVICE

IN the self-governing dominions, Canada, Australia, New Zealand, the Union of South Africa, and Newfoundland, and territories under their control, such as Papua and the Cook Islands, medical appointments are made concerning which information can be obtained from the High Commissioners or Agents-General in London, appointments in Egypt and the Soudan are regulated from the Foreign Office, in Southern Rhodesia the appointments are made by the local Government, but the British South Africa Company, London Wall Buildings, E C, act as their agents in this country, in North Borneo application should be made to the British North Borneo Company, 37, Threadneedle-street, E C, for appointments, and those in Sarawak are in the hands of H H the Rajah Much valuable information will be found in the "Professional Handbook," Part II, issued by the Oversea Settlement Office, 3 and 4, Clement's Inn, Strand, London, W C 2, price 9*d*

As a general rule, each Colony or Protectorate has its own public service distinct from that of every other; and it is usually only the higher officers who are transferred by the Secretary of State from one Colony to another There are three exceptions to this rule (*a*) The West African Medical Staff, which serves Nigeria, the Gold Coast, Sierra Leone, and the Gambia, is one service. (*b*) The East African Medical Service, which serves Kenya, Uganda, Zanzibar, Nyasaland, Somaliland, and the Tanganyika Territory is one service (*c*) In practice the medical services of the Straits Settlements and the Malay States may be regarded as one, as the officers may be and frequently are transferred from the Colony to the States or vice versa

The Colonies, Protectorates, and Mandated Territories to which medical officers are appointed by the Secretary of State for the Colonies are (*a*) the West African—viz, Nigeria, the Gold Coast, Sierra Leone, and the Gambia; (*b*) the East African—viz, the Kenya Colony and Protectorate, the Uganda, Nyasaland, Somaliland, and Zanzibar Protectorates, the Tanganyika Territory, and Northern Rhodesia, (*c*) the Eastern—viz, Ceylon, the Straits Settlements and Malay States, Hong-Kong, Mauritius, and Seychelles, (*d*) the West Indian—viz, British Guiana, Jamaica, Trinidad, the Windward Islands, the Leeward Islands, Barbados, British Honduras, and the Bahamas, (*e*) Fiji and the Western Pacific, Cyprus, Gibraltar, St Helena, Bermuda, and the Falkland Islands, and (*f*) Palestine

In Ceylon, Mauritius, Jamaica, Barbados, the Bahamas, and Bermuda vacancies are practically always filled locally by the appointment of qualified native candidates, or—in the case of some of the higher posts—by transfer from other Colonies Appointments in Malta are all filled locally Vacancies occur most regularly and frequently in the West African Medical Staff, the East African Medical Service, and the Straits Settlements and Malay States

All applicants for medical appointments in the gift of the Secretary of State for the Colonies should be between the ages of 23 and 35 [1] and must be doubly qualified, preference will be given to those who have held hospital appointments as house physicians and house surgeons; testimonials to character and professional competence will be required, and every officer before being definitely appointed will be medically examined by one of the consulting physicians of the Colonial Office Sir William Prout, C M G, O B E, and Dr A E Horn, C M G, 79, Harley-street, London, W 1, Sir J Hawtrey Benson, 57, Fitzwilliam-square, Dublin, Dr Foster Coates, 9, Shaftesbury-square, Belfast, Lieut -Colonel Glen Liston, C I E, I M S, 33, Comely Bank, Edinburgh, and Dr R H Kennan, 2, St James's-road, Liverpool Applications for such appointments must be addressed to the Private Secretary (Appointments), Colonial Office, 38, Old Queen street, S W 1

EAST AFRICAN MEDICAL SERVICE

The Medical staffs of the Kenya Colony and Protectorate, the Uganda, Nyasaland, Somaliland, and Zanzibar Protectorates, and the Tanganyika Territory form one service, the members of which are liable to be posted to any of the Dependencies as the exigencies of the service may require The preferences of individual officers are, however, taken into consideration as far as possible

Selected candidates are appointed as medical officers on probation in the first instance for two years, at the end of which period their appointments are made permanent if their service has been satisfactory Unless the Secretary of State directs to the contrary, they are required to attend a course of instruction at the London or Liverpool School of Tropical Medicine before taking up their appointments If such a course is not taken before proceeding to East Africa, they are required to take it during their first leave of absence Medical officers (but not sanitation officers) are permitted to take private practice at some stations, on the understanding that they give precedence to their official duties It must be understood that additions to their income from this source are not likely to be substantial, and that the privilege is liable to withdrawal at any time

---

[1] In the case of East Africa preference will be given to candidates who are over 25 years of age In the case of Fiji and the Western Pacific, preference will be given to candidates who are under 30

Salaries and allowances are issued locally in respect of resident service at a fixed rate of 20 shillings to the pound sterling

Officers are provided with quarters free of rent or the Government may provide temporary accommodation, or an allowance in lieu of quarters calculated at 15 per cent of the initial salary of an officer's appointment may be paid The salary of a medical or sanitation officer in Kenya Uganda the Tanganyika Territory, or Zanzibar is £600 per annum, rising by annual increments of £30 to £840 and thence by increments of £40 to £920, subject to an efficiency bar at £840 Senior medical officers and senior sanitation officers in those Dependencies are paid on the scale £1000 by annual increments of £50 to £1100 The application of these scales to Nyasaland and Somaliland is under consideration, at present the scale for medical officers in those Dependencies is £600 by £25 to £900, with efficiency bars at £700 and £800 Officers who possess the Diploma in Public Health on entering or who acquire it while in the Service receive two special increments in the scale

Officers of the East African Medical Service are permitted to retire with gratuity, if they wish instead of waiting to retire on pension as follows (*a*) After nine years' service, of which at least six must have been spent in East Africa, £1000, (*b*) after 12 years' service, of which at least eight must have been spent in East Africa, £1250 If an officer elects to retire with gratuity, he thereby foregoes all claim to pension

The grades and salaries (apart from ordinary medical and sanitation officers) in the medical departments are as follows —

Kenya—Director of Medical and Sanitary Services, £1500, Deputy Director of Medical Service, £1200, Deputy Director of Sanitary Service, £1200, Surgical Specialist, £1200, Director of Laboratory, £1200

Uganda—As Kenya

Tanganyika Territory—As Kenya, except that there is no surgical specialist

Nyasaland—Director of Medical and Sanitary Services, £1000, Senior Medical Officer and Senior Sanitation Officer, £800 by £25 to £900

Zanzibar—Director of Medical and Sanitary Services, £1400, Deputy Director of Sanitary Service, £1200

Somaliland—Principal Medical Officer, £900 by £50 to £1000

Sanitation officers are selected from the ranks of medical officers as occasion arises

ASIA

Straits Settlements and Federated Malay States—European medical officers are appointed on the following scale of salaries · $440 per mensem, rising to $480 per mensem during three years' probation; then, if they are placed on the pensionable establishment, rising to $500 per mensem, and thence by annual increments of $25 per mensem to $800 per mensem, with a strict efficiency bar at $600 per mensem This scale of salaries has been fixed on the supposition that medical officers join the service at about the age of 27. Above the concluding figure of $800 per mensem there are certain higher appointments as follows Principal Civil Medical Officer, Straits Settlements, and Principal Medical Officer, Federated Malay States, $1200 per mensem Class A seven posts at $1050 per mensem Class B nine posts at $850, rising by $30 to $1000 per mensem

The following temporary allowances are at present paid to all officers recruited from Europe in the Government Services of the Straits Settlements and Federated Malay States unmarried officers, 10 per cent of salary, married officers, 20 per cent of salary. Private practice by Government medical officers is not allowed They may, however, do, and receive fees for, consultative work, if approved by the Government Information about general conditions in Malaya is obtainable from the Malay States Information Agency, 88, Cannon-street, E.C. 4

Seychelles—The chief medical officer receives Rs 7000 and Rs 300 in fees There are three assistant Government medical officers, two receiving Rs 6500, with free quarters or an allowance of Rs 500 per annum in lieu the other Rs 6000 One assistant is provided with free quarters in the New Hospital

Hong-Kong—The present establishment of the medical department is principal civil medical officer, £1000–£50–£1200: eight medical officers, £600–£25–£1000, three port health officers, £600–£25–£1000, bacteriologist £700–£25–£1000. two health officers, £600–£25–£1000 are also attached to the Sanitary Department. A temporary allowance on a scale varying with the sterling exchange value of the dollar is at present payable. Salaries are converted locally at the rate of 2*s* = $1 Free quarters are not provided, but in certain instances a rent allowance is paid by the Government

AMERICA

British Guiana—There are the following posts in the medical service of the Colony. one surgeon-general £1000–£1200 per annum, with consulting practice, one medical officer of health £900, one bacteriologist £450–£700 (increment £25) with £50 allowance in lieu of fees; 34 medical officers at £500–£25–£700 Some of the senior posts also carry duty allowances (varying from £50 to £300 per annum) and quarters All the junior appointments in which private practice is not allowed carry duty allowances Private practice is allowed in certain cases

Trinidad and Tobago—In Trinidad and Tobago there are over 40 appointments On appointment Government medical officers who are provided with free unfurnished quarters, receive salary at the rate of £400 per annum with annual increments of £25 accruing from the date of first appointment as supernumerary medical officers until reaching the maximum of £600 An officer appointed to a district receives, in addition to his salary. a travelling allowance varying from £100 per annum in a normal district to £150 per annum and is allowed private practice, the value of which is estimated at from £50 to £800 per annum Officers employed in institution work receive allowances in lieu of private practice varying from £50 (and furnished quarters) to £300. Medical officers having completed 10 years' resident service are pensionable at the age of 55

Windward Islands (Grenada, St Lucia St Vincent) There are over 25 appointments The chief medical and health officer, Grenada receives £600–£700 The chief medical officer, St Lucia, receives £600–£700 plus forage and subsistence allowances, the post is pensionable, but private practice is *not* allowed except as a consultant Most of the remaining appointments are district appointments with the right to private practice attached, the salaries paid by Government vary from £400–£500, and with allowances in certain cases The Governor has the power to transfer a medical officer from one island to another Appointments are pensionable

Leeward Islands (Antigua St Christopher and Nevis Dominica Montserrat Virgin Islands)—There are 20 appointments with salaries varying from £375 to £400 of the same nature as in the Windward Islands and pensionable An officer when first sent out is not appointed to a particular island but to the service of the Leeward Islands, with a salary varying from £312 to £400, according to station, and the Governor decides as to the district which is to be allotted to him He is liable to be transferred at the Governor's discretion to any medical district in the Leeward Islands, and in certain districts may be required to perform magisterial duties The medical officers receive fees for successful vaccinations post-mortem examinations, evidence at courts of justice, certificates of lunacy, and, in the larger islands, for burial certificates They are also as a rule allowed private practice The chief medical officer, St Kitts receives £700–£25–£750 without private practice

Antigua—Medical Superintendent Holberton Hospital and Chief Medical Officer is in receipt of a salary of £600, plus £50 as Chief Medical Officer and travelling allowance of £25 Fees average £100.

British Honduras —There are seven medical appointments (besides the principal post of colonial surgeon) of which six are at a salary of $2430 per annum with increments of $120 to $3150 Unless they already possess a diploma of public health, medical officers are liable to be required, before they join the colony, to undergo a course of instruction at a laboratory of public health or analogous institution The salary of the Principal Medical Officer is $4008, with one increment of $120 to $4128 The value of the dollar is approximately the same as that of the United States

OTHER OVERSEAS APPOINTMENTS

Fiji and the Western Pacific —In Fiji the Government medical officers receive a salary of £400, rising by annual increments of £25 to £600, with partly furnished quarters, or a house allowance of £50 In some districts a medical officer is also a district commissioner, with an additional allowance of £150 They are allowed private practice, on the understanding that their official duties are not neglected Private practice, however, cannot be guaranteed, and in most districts it is very small in amount Where no private practice exists, a duty allowance of £50 is granted They are required either to take charge of hospitals or of districts, at the discretion of the authorities The posts are pensionable

In addition to a chief medical officer (£800 a year, rising to £1000), a medical officer of health, Suva (£750–£900, not subject to bonus addition), a medical superintendent, Colonial Hospital (£700–£750, inclusive of allowance as officer in charge of the Medical School), and a medical superintendent, Makogai Leper Asylum (£600 rising to £800), there are in Fiji 12 medical officers, five of whom are also district commissioners The salaries in Fiji are subject to temporary increases, the rate of bonus at the present time being 15 per cent of the salary with the addition of £22 10*s*

The staff in the British Solomon Islands Protectorate consists of one senior medical officer (£700 and hospital fees) and two medical officers (£550 rising to £650) A local allowance at the rate of £50 per annum is also paid in respect of actual resident service in the Protectorate In the Gilbert and Ellice Islands Colony there is one medical officer in charge (£650 rising to £750) Officers may be transferred from Fiji to the Western Pacific and vice versa at the discretion of the Secretary of State

Cyprus —There is a chief medical officer paid at the rate of £750, rising by annual increments of £25 to £900, and three district medical officers paid at the rate of £500 a year, rising by annual increments of £20 to £600 a year, all enjoying private practice (except the chief medical officer, who is allowed consulting practice only) and receiving 2*s* per diem forage allowance There is also a medical officer of health on £600, rising by £20 increments to £720 without private practice; these are the only medical appointments open to English candidates

Gibraltar —There is a surgeon of the Colonial Hospital receiving £750, and private practice There are also two assistant surgeons with a salary of £720 per annum, who are allowed private consulting practice only Free quarters, unfurnished, are provided for all three officers

St Helena —The colonial surgeon at present receives £550 per annum, £20 fees as health officer, and £30 horse allowance Private practice is allowed The assistant colonial surgeon at present receives £500 a year and a horse allowance, and is allowed a share of the private practice For contracts and appointments the colonial surgeon also receives about £250 a year and the assistant about £150

Falkland Islands —There are two appointments The colonial surgeon is paid at the rate of £600 per annum, with free furnished quarters The assistant colonial surgeon is paid at the rate of £500 per annum, with an allowance of £50 per annum in lieu of quarters. Private practice is shared between the colonial surgeon and the assistant colonial surgeon. The office of colonial surgeon is pensionable

Palestine [2]—The grades and salaries of superior appointments in the Department of Health are. Director, £E1100–50–1400, plus £E100 expatriation allowance Deputy director, senior medical officer (laboratory section), and senior medical officer (Jerusalem-Jaffa district) £E800–50–1100 plus £E100 expatriation allowance Chemical analyst, three senior medical officers, and medical officer (Jerusalem-Jaffa district) £E550–25–750 plus £E50 expatriation allowance The remainder of the staff is recruited locally The salaries of the two highest grades will be reduced as vacancies occur

LEAVE AND PENSIONS

Leave and Passages —Leave of absence in East Africa on full salary is granted in the normal case after a tour of residential service (of not less than 20 and not usually more than 30 months) to an amount of six days for each completed month of residence (or three days when for any reason the officer is not returning to East Africa) exclusive of the periods of the voyages to and fro, for which full pay is also given Officers serving in certain stations in Kenya and Nyasaland, are allowed five (or two and a half) days' leave in respect of each month of service instead of six (or three) days' leave respectively In Somaliland special leave regulations exist which provide for an officer taking leave after a shorter tour of service than in other parts of East Africa Free first-class passages are provided for the officer on first appointment and on leave, and in certain cases assistance towards family passages is given

In the Malay Peninsula two months' leave of absence with full salary may be granted in respect of each year's service, and this leave may be accumulated up to a maximum of eight months Additional leave on half-pay may be granted on special grounds Up to the end of 1928 free passages are granted on first appointment and on leave, and free passages on first appointment or transfer are granted permanently for officers with salary under £800

In other Colonies outside Tropical Africa, subject to the necessities of the service, leave of absence on half salary may be granted after a period of three years' resident service without any special grounds It may be given before the expiration of that period in case of serious indisposition, or of urgent private affairs In the absence of special grounds, the leave must not exceed one-sixth of the officer's resident service, on special grounds it may exceed that period by six months In addition to the above, vacation leave on full pay may be granted, if no inconvenience or expense is caused thereby, not exceeding three months [3] in any two years In British Guiana assisted passages are granted to officers proceeding on leave and officers are allowed to accumulate full-pay leave at the rate of six weeks for each year's service up to six months, and no leave of absence may (except in very special circumstances) exceed six months in all unless the officer has served for five years or more without leave, in which case two months on half-pay may be taken in addition to six months' full-pay leave

On first appointment an officer will, except in the case of a few Colonies possessing Representative Assemblies, be provided by the Crown Agents for the Colonies with free passages to the Colony for himself and his wife and children, if any, not exceeding four persons besides himself The officer so appointed will be required to execute an agreement binding him to repay the cost of the passage or passages so obtained in the event of his leaving the Government service within three years An officer taking leave out of the Colony has in most cases to provide his own passages

---

[2] £1 Egyptian (of 100 piastres) is equivalent to £1 0*s* 6*d* sterling

[3] Or, in the case of Fiji and the Western Pacific and the Falkland Islands 4½ months in any three years

Pensions—East Africa—Officers on the pensionable establishment retire on attaining the age of 50 years or after 20 years' East African service, whichever is earlier; but they may be retained in the service, with their own consent, for such further period as the Government may recommend Earlier retirement in the event of ill-health is also provided for. Pension is computed at one-sixtieth of pensionable emoluments—i e, salary and value of free quarters[*]—at the time of retirement, two years' service being reckoned as three years for this purpose, subject to an average of emoluments for the last two years before retirement instead of the actual emoluments at the time of retirement being taken as the basis for calculation in certain circumstances

Other Colonies—In most of the other Colonies an officer holding a pensionable appointment may be allowed in the case of ill-health to retire on a pension after ten full years' resident service, otherwise he must have attained the age of 55 For ten full years' resident service fifteen-sixtieths of the average annual salary of the retiring officer's fixed appointments for three years prior to retirement may be awarded, to which one-sixtieth may be added for each additional year's service; but no addition will be made in respect of any service beyond 35 years For pension purposes absence on vacation leave counts as full service, and leave on half-pay as half service In a few cases the retiring age is 60 and the pension after ten years' service is ten-sixtieths instead of fifteen In the Straits Settlements and Malay States an officer may, with the consent of Government, retire at age 50 Pensions are calculated on a basis of length of service in months instead of years.

WEST AFRICAN MEDICAL STAFF

Applicants for appointment as medical officers in the West African Medical Staff (the higher grades will usually be filled by promotion from the lower) must be British subjects of European parentage and between 23 and 35 years of age, preference is given to candidates who are over 25 years of age Applicants must possess a complete double qualification, and must be on the Medical Register Passages for wives and children are not provided by the Government, and houses for the wives of junior medical officers are rarely available Officers are not allowed to take their wives and young children out with them until they have acquired experience of the local conditions and have obtained the sanction of the Governor

Candidates whom it is proposed to select for appointment will have to be medically examined by one of the medical advisers of the Colonial Office (or, in the case of those residing in a Colony, by a medical officer appointed by the Colonial Government), and no appointment will be made unless the candidate is declared to be physically fit for service in West Africa Candidates are allowed to express a preference for any particular Colony or Protectorate, and their wishes in this respect will be borne in mind and met as far as possible, but they are liable to be posted in the first instance, or transferred afterwards if necessary to any other West African Colony or Protectorate at the discretion of the Secretary of State Candidates who wish to be posted to the Northern Provinces of Nigeria should be able to ride Transfers from one Colony or Protectorate to another will be made as seldom as possible Candidates should on no account apply for, or accept, a West African appointment in the expectation of ultimately being transferred

Those transferred to pensionable Crown appointments elsewhere than in West Africa do not forfeit their claim to pension in respect of their West African service on final retirement, provided that they have been members of the staff for at least 12 months Every officer selected for appointment is required to have himself revaccinated before proceeding to West Africa, unless one of the medical advisers of the Colonial Office certifies that this is unnecessary

Instruction in Tropical Medicine—Every candidate selected for appointment will, unless the Secretary of State decides otherwise, be required to undergo a course of instruction for five to six months, either at the London School of Hygiene and Tropical Medicine Endsleigh-gardens, N W, 1, or at the Liverpool School of Tropical Medicine, University, Liverpool The cost of tuition will be borne by the Government, but candidates must make their own arrangements for board and lodging; an allowance of £3 a week will be paid to them monthly in arrear for this purpose A daily allowance of 5*s* (but no salary) will be paid to each candidate monthly in arrear during the course, and may be continued up to the date of embarkation. He will be bound to refund (1) if he declines to accept an appointment in any of the Colonies or Protectorates for which he may be selected, (2) if he fails to obtain a certificate in regard to progress and efficiency, or (3) if he relinquishes the Service for any other reason than mental or physical infirmity, or is removed for misconduct, within three years of his arrival in West Africa

If at the end of the session there exists no vacancy in the Staff to which a candidate can be appointed, he will be placed in a Reserve and granted an allowance at the rate of £200 a year until the occurrence of a vacancy

Leave of Absence—European officers in West Africa may be granted vacation leave on full salary not exceeding in all one week's leave in the United Kingdom for every completed calendar month of total residential service in West Africa, plus the time necessarily taken on the journey to the United Kingdom, and, if the officer is returning to West Africa for further service, the time necessarily taken on the journey from the United Kingdom to the Colony Vacation leave may be granted without any special grounds after 18 consecutive calendar months of residential service in West Africa An officer will not be required to serve a tour of more than 24 consecutive calendar months' residential service except in special circumstances, and the Governor may grant vacation leave to any officer at any time after he has completed 12 consecutive calendar months' residential service Vacation leave on full salary may also be granted to an officer if he is invalided from West Africa after less than 12 consecutive calendar months' residential service, and sick leave on full salary may be granted for any period not exceeding six calendar months

Appointments and Salaries.—The Medical Services of the West African Colonies and Protectorates—namely, the Gambia, Sierra Leone, the Gold Coast (including Ashanti and the Northern Territories), and Nigeria (Southern and Northern Provinces)—form one service under the name of the West African Medical Staff All the medical officers for the service are selected by the Secretary of State for the Colonies, and are on one list for employment and promotion The grades and emoluments of the Staff are at present as follows —

The Director of the Medical and Sanitary Service, Nigeria, receives a salary of £1800 a year, with a duty allowance at the rate of £360 a year The Director of Medical and Sanitary Service in the Gold Coast receives a salary of £1600 a year, with a duty allowance at the rate of £320 a year The Director of Medical and Sanitary Service in Sierra Leone receives a salary of £1400 a year, with a duty allowance at the rate of £280 a year The Deputy Director of Medical and Sanitary Service, Nigeria, and the Deputy Director of Sanitary Service, Nigeria, receive salaries of £1500 a year, with duty allowances at the rate of £300 a year The Deputy Director of Medical and Sanitary Service, Gold Coast, receives a salary of £1400 a year, with duty allowance at the rate of £280 a year Assistant Directors Medical Service There are nine appointments on this grade, six in Nigeria two in the Gold Coast and one in Sierra Leone The salary is at the rate of £1300 a year, with duty allowance at the rate of £260 a year. The Assistant Director of Sanitary Service, Nigeria, the Deputy Director of Sanitary Service in the Gold Coast and the Deputy Director of Sanitary Service in Sierra Leone receive salary at the rate of £1300 a year, with duty allowance at the rate of £260 a year Specialists The number of these appointments is not fixed, officers of outstanding professional merit being eligible for appointment a salary of £600, plus £50 as Chief Medical Officer and travelling allowance of £25 Fees average £100

---

[*] The value of free quarters for pension purposes is taken as 15 per cent. of the minimum salary of the grade in which an officer is serving at the time of retirement

British Honduras—There are seven medical appointments (besides the principal post of colonial surgeon) of which six are at a salary of $2430 per annum with increments of $120 to $3150 Unless they already possess a diploma of public health, medical officers are liable to be required, before they join the colony, to undergo a course of instruction at a laboratory of public health or analogous institution The salary of the Principal Medical Officer is $4008, with one increment of $120 to $4128 The value of the dollar is approximately the same as that of the United States

OTHER OVERSEAS APPOINTMENTS

Fiji and the Western Pacific—In Fiji the Government medical officers receive a salary of £400, rising by annual increments of £25 to £600, with partly furnished quarters, or a house allowance of £50. In some districts a medical officer is also a district commissioner, with an additional allowance of £150 They are allowed private practice, on the understanding that their official duties are not neglected Private practice, however, cannot be guaranteed, and in most districts it is very small in amount Where no private practice exists, a duty allowance of £50 is granted They are required either to take charge of hospitals or of districts, at the discretion of the authorities The posts are pensionable

In addition to a chief medical officer (£800 a year, rising to £1000), a medical officer of health, Suva (£750–£900, not subject to bonus addition), a medical superintendent, Colonial Hospital (£700–£750, inclusive of allowance as officer in charge of the Medical School), and a medical superintendent, Makogai Leper Asylum (£600 rising to £800), there are in Fiji 12 medical officers, five of whom are also district commissioners The salaries in Fiji are subject to temporary increases, the rate of bonus at the present time being 15 per cent of the salary with the addition of £22 10*s*

The staff in the British Solomon Islands Protectorate consists of one senior medical officer (£700 and hospital fees) and two medical officers (£550 rising to £650) A local allowance at the rate of £50 per annum is also paid in respect of actual resident service in the Protectorate In the Gilbert and Ellice Islands Colony there is one medical officer in charge (£650 rising to £750) Officers may be transferred from Fiji to the Western Pacific and vice versa at the discretion of the Secretary of State

Cyprus—There is a chief medical officer paid at the rate of £750, rising by annual increments of £25 to £900, and three district medical officers paid at the rate of £500 a year, rising by annual increments of £20 to £600 a year, all enjoying private practice (except the chief medical officer, who is allowed consulting practice only) and receiving 2*s*. per diem forage allowance There is also a medical officer of health on £600, rising by £20 increments to £720 without private practice, these are the only medical appointments open to English candidates

Gibraltar—There is a surgeon of the Colonial Hospital receiving £750, and private practice. There are also two assistant surgeons with a salary of £720 per annum, who are allowed private consulting practice only. Free quarters, unfurnished, are provided for all three officers

St Helena—The colonial surgeon at present receives £550 per annum, £20 fees as health officer, and £30 horse allowance Private practice is allowed The assistant colonial surgeon at present receives £500 a year and a horse allowance, and is allowed a share of the private practice For contracts and appointments the colonial surgeon also receives about £250 a year and the assistant about £150

Falkland Islands—There are two appointments The colonial surgeon is paid at the rate of £600 per annum, with free furnished quarters The assistant colonial surgeon is paid at the rate of £500 per annum, with an allowance of £50 per annum in lieu of quarters Private practice is shared between the colonial surgeon and the assistant colonial surgeon The office of colonial surgeon is pensionable

Palestine [1]—The grades and salaries of superior appointments in the Department of Health are. Director, £E1100–50–1400, plus £E100 expatriation allowance Deputy director, senior medical officer (laboratory section), and senior medical officer (Jerusalem-Jaffa district) £E800–50–1100 plus £E100 expatriation allowance Chemical analyst, three senior medical officers, and medical officer (Jerusalem-Jaffa district) £E550–25–750 plus £E50 expatriation allowance The remainder of the staff is recruited locally. The salaries of the two highest grades will be reduced as vacancies occur

LEAVE AND PENSIONS

Leave and Passages—Leave of absence in East Africa on full salary is granted in the normal case after a tour of residential service (of not less than 20 and not usually more than 30 months) to an amount of six days for each completed month of residence (or three days when for any reason the officer is not returning to East Africa) exclusive of the periods of the voyages to and fro, for which full pay is also given Officers serving in certain stations in Kenya and Nyasaland, are allowed five (or two and a half) days' leave in respect of each month of service instead of six (or three) days' leave respectively In Somaliland special leave regulations exist which provide for an officer taking leave after a shorter tour of service than in other parts of East Africa Free first-class passages are provided for the officer on first appointment and on leave, and in certain cases assistance towards family passages is given

In the Malay Peninsula two months' leave of absence with full salary may be granted in respect of each year's service, and this leave may be accumulated up to a maximum of eight months Additional leave on half-pay may be granted on special grounds Up to the end of 1928 free passages are granted on first appointment and on leave, and free passages on first appointment or transfer are granted permanently for officers with salary under £800

In other Colonies outside Tropical Africa, subject to the necessities of the service, leave of absence on half salary may be granted after a period of three years' resident service without any special grounds It may be given before the expiration of that period in case of serious indisposition, or of urgent private affairs In the absence of special grounds, the leave must not exceed one-sixth of the officer's resident service, on special grounds it may exceed that period by six months In addition to the above, vacation leave on full pay may be granted, if no inconvenience or expense is caused thereby, not exceeding three months [2] in any two years In British Guiana assisted passages are granted to officers proceeding on leave and officers are allowed to accumulate full-pay leave at the rate of six weeks for each year's service up to six months, and no leave of absence may (except in very special circumstances) exceed six months in all unless the officer has served for five years or more without leave, in which case two months on half-pay may be taken in addition to six months' full-pay leave

On first appointment an officer will, except in the case of a few Colonies possessing Representative Assemblies, be provided by the Crown Agents for the Colonies with free passages to the Colony for himself and his wife and children, if any, not exceeding four persons besides himself The officer so appointed will be required to execute an agreement binding him to repay the cost of the passage or passages so obtained in the event of his leaving the Government service within three years An officer taking leave out of the Colony has in most cases to provide his own passages

---

[1] £1 Egyptian (of 100 piastres) is equivalent to £1 0*s* 6*d*. sterling

[2] Or, in the case of Fiji and the Western Pacific and the Falkland Islands 4½ months in any three years

SPECIAL DIPLOMAS

DIPLOMA IN TROPICAL MEDICINE

ALTHOUGH a qualification in tropical medicine has not been made registrable by statute, a diploma is regarded as indispensable for appointments in the Colonial Medical Service and similar positions abroad Systematic instruction for these diplomas is given at the Incorporated Liverpool School of Tropical Medicine (founded in 1898) and at the London School of Hygiene and Tropical Medicine 23, Endsleigh-gardens, Euston-road, N W 1

University of Cambridge—The examination for the Diploma in Tropical Medicine and Hygiene is divided into two parts Part I is held in Cambridge in April and Part II in July in London Candidates for Part I are examined under the same regulations and in the same subjects as candidates for the Diploma in Public Health, but any qualification in medicine or surgery recognised by the proper authority of any country outside the British Dominions may be recognised The subjects for Part II are Medicine, Surgery, and Hygiene in their relation to Tropical Disease

The examination will be partly in writing, partly oral, and partly practical or clinical (the clinical part will be conducted at a hospital for tropical diseases, at which cases will be submitted for diagnosis and comment) Every candidate who passes the examination to the satisfaction of the examiners will receive from the University a diploma (D T M & H) testifying to his knowledge and skill in tropical medicine and hygiene

The fee for each part of the examination is £10 10*s* Further information respecting the courses of study and examinations may be obtained from Mr J E Purvis Public Health Chemical Laboratory, Cambridge

University of London—The M D degree may be taken in tropical medicine at an examination held twice annually, for which a thesis may be submitted

University of Liverpool—The University grants a Diploma in Tropical Medicine At the end of each full course an examination is held by the University for its Diploma of Tropical Medicine (D T.M), which is open only to those who have been through the course of instruction of the school The subjects of examination are (*a*) Tropical Pathology, Parasitology and Entomology; (*b*) Tropical and Applied Bacteriology, (*c*) Tropical Hygiene and Sanitation; (*d*) Tropical Medicine, including Ætiology, Symptoms, Diagnosis, and Treatment of Tropical Diseases The advanced course consists entirely of Practical and Clinical Laboratory Work, given at the laboratory at the University The fee for the full course of instruction is £15 15*s* Applications should be made to the Dean of the Medical Faculty, University of Liverpool

A diploma in Tropical Hygiene (D T H) has recently been established The subjects of examination are bacteriology), chemistry (including meteorology and climatology), entomology, protozoology, and helminthology; tropical sanitation (including sanitary engineering), practical sanitation Fee for the course £15 15*s* Two University Fellowships of £100 a year each are open to students of the school, amongst others Accommodation for research work is to be had at the University Laboratory The Mary Kingsley Medal is awarded by the school for distinguished work in connexion with Tropical Medicine.

Conjoint Board R C.P Lond, R C S Eng—The diploma of D T M & H Eng is awarded on the results of an examination held twice yearly, in February and July Candidates must possess a registrable qualification and produce evidence of having attended (1) practical instruction in pathology, protozoology, helminthology, entomology, bacteriology, and hygiene in relation to tropical medicine in a recognised institution during not less than five months (2) clinical practice of a recognised hospital for the same period Conditions of study may be modified in the case of candidates of special experience Fee for admission to the examination, £9 9*s*, 14 days' notice of entry to the Secretary, Examination Hall, Queen-square, London, W.C 1.

DIPLOMA IN PSYCHOLOGICAL MEDICINE

The Universities of Cambridge London Durham, Leeds Manchester and Edinburgh, Trinity College, Dublin and the Conjoint Board of the R C P Lond and R C S Eng now grant diplomas in psychological medicine under conditions that are fairly comparable in the standard of the tests and in the duration of the courses the details on these points can be obtained from the various examination bodies

In London, courses of instruction for the Diploma in Psychological Medicine are given at the Maudsley Hospital, Denmark Hill, which has recently been definitely recognised as a school of the University of London The course consists of two parts and is adapted for the diploma of the Conjoint Board the University of London, or the University of Cambridge The fee for the whole course (Parts I. and II) is 15 guineas, or for either part separately 10 guineas

Appointments as clinical assistants are obtainable at the Maudsley Hospital The holding of such appointments for varying periods satisfies the requirements of the different examining bodies in respect of practical study of mental disorders The appointments and other facilities for clinical experience are open to qualified medical practitioners apart from the courses of instruction Inquiries as to lectures should be addressed to the Director of the Pathological Laboratory, Maudsley Hospital. Denmark Hill S E 5; and as to clinical facilities, to the Medical Superintendent at the same address

A course of lectures and practical instruction for the Diploma in Psychological Medicine. granted by the various universities and the Conjoint Board is held at Bethlem Royal Hospital London. S E, twice annually during the spring and autumn The fee for the full course is 15 guineas. Part A or Part B, however, may be taken separately at a fee of 10 guineas per part In addition to the above clinical instruction in Psychological Medicine is given at Bethlem Royal Hospital every morning (except Wednesdays) at 11 A M The fee for students is 3 guineas for a period of three months' attendance and for post-graduates a fee of 5 guineas for a like period A reduction is made to those who attend the Diploma Course House physicians are appointed at Bethlem Royal Hospital for a term of six months, which may be extended These appointments are made on May 1st and Nov 1st in each year and the vacancies are advertised in the medical papers. Apartments complete board, attendance and laundry are provided and also a salary at the rate of £100 per annum Clinical assistants are often appointed from time to time for periods of three months or longer. These are non-salaried and non-resident posts but partial board is provided The Physician-Superintendent, Bethlem Royal Hospital, will supply further particulars

In Ireland a post-graduate diploma is conferred on registered medical practitioners who subsequent to registration, have held for at least 12 months a resident medical appointment in a recognised hospital for the treatment of Mental Diseases or have held such an appointment for at least six months and have also attended daily for six months on the practice of an approved institution as aforesaid in which clinical instruction is given. they must also have attended certain courses of instruction and have passed a special examination

The salary is at the rate of £1300 a year, with duty allowance at the rate of £260 a year After five years' approved service as such, the specialist officer is eligible to receive a salary at the rate of £1400 a year, with duty allowance at the rate of £280 a year There are at present five officers appointed specialists in Nigeria and four in the Gold Coast Senior Medical Officer There are twenty appointments of this grade, with salary at the rate of £1000 a year, rising by annual increments of £50 to £1150 a year, and seniority allowance at the rate of £100 a year The Senior Medical Officer, Gambia, is allowed "staff pay" of £150 a year, in addition to duty allowance, but he is debarred from private practice Senior Sanitary Officer There are six appointments of this grade, with salary at the rate of £1050 a year, rising by annual increments of £50 to £1200 a year, and a duty allowance at the rate of £210 a year Medical Officer The salary attached to this grade is at the rate of £660 a year, rising by annual increments of £30 to £720 a year Then, if confirmed in the appointment, £720 a year, rising by annual increments of £40 to £960, with seniority allowance at the rate of £72 a year. Before passing £800, medical officers are required to take a special course of study for three months If they obtain satisfactory certificates at the end of the course they draw their further increments up to £960 a year

A medical officer who has served for three years on the maximum salary of this scale (£960) without obtaining promotion is eligible, if recommended by the Governor, to be placed on the scale £1000–£50–£1150, with £100 seniority allowance (as for Senior Medical Officers)

Special Appointments —The Director of the Medical Research Institute, Lagos, and the Director of Research, Accra, receive a salary of £1300 a year, with a duty allowance of £260 a year, rising after five years' approved service to a salary at the rate of £1400 a year and duty allowance at the rate of £280 a year Salary at the rate of £800 a year, rising by annual increments of £40 to £960 a year is attached to about 17 posts (those of assistant at the Medical Research Institute, Lagos, and medical officers of health at various places), irrespective of the seniority of the officer holding the appointment In addition to the seniority allowance (£72 a year), staff pay at the rate of £150 a year is also attached to these posts; and the holder of the appointment draws half of the staff pay during leave of absence, the remainder being drawn by his locum tenens The holders of these appointments are not allowed private practice Duty allowances, seniority allowance, and staff pay are not pensionable emoluments

Increments —Increments to salaries are payable only when the service of an officer during the period of employment qualifying for increment is approved

Payment of Salaries —Information as to the payment of officers' salaries or of monthly remittances to persons in England may be obtained from the Crown Agents for the Colonies, 4, Millbank, S W 1 All allowances are paid locally

All officers of the staff, except directors, deputy directors, assistant directors, senior sanitary officers, and a few other officers holding special appointments, are at present allowed to take private practice, provided that it does not interfere with the faithful and efficient performance of their official duties, but it is within the power of the Governor to withdraw or suspend the privilege in such places and for such periods as he may consider desirable Private practice does not exist at the majority of stations, and no guarantee can be given that an officer will be posted to a station in which he will be able to practise privately As a general rule, and subject to the exigencies of the service, stations where there is private practice are allocated to senior members of the Staff

Pensions and Gratuities —Pensions and gratuities on retirement are granted in accordance with the law and regulations of each individual Colony

Fuller information can be obtained from the Private Secretary, Colonial Office 38, Old Queen-street, London, S W 1

SUDAN MEDICAL SERVICE

This service is responsible for carrying out civil medical and public health duties in the Sudan The staff consists of —(*a*) A Director—pay £1500–£1800 (*b*) A Senior Physician and a Senior Surgeon to the Khartoum and Omdurman Civil Hospitals—pay £1200–£1750 (*c*) An Assistant Director and Medical Officer of Health, Khartoum Province—pay £1200 (This post is of a temporary nature and the terms and nature of the duties are subject to alteration) (*d*) Twenty-four "Senior Medical Inspectors" and "Medical Inspectors" who are all British The pay of the Inspectors commences at £720, and rises, subject to the recommendation of the Director, by five biennial increases to £1080 and thence after 13 years service to £1200 The Senior Medical Inspectors are eligible by selection to the four senior posts All Medical Inspectors are appointed on probation for two years If at the expiration of this time they are taken on the permanent service of the Government, the increase of pay is subject to passing such examination in Arabic as may be required by the regulations (*e*) A number of medical officers trained at one of the Syrian medical schools (*f*) A number of assistant medical officers, natives of the Sudan, who have been given a purely clinical training in one of the larger Sudan hospitals

Among the attractions of the service are The annual leave of 90 days for every year's service, which under ordinary circumstances is granted each year, study-leave for some definite purpose, and two years granted towards pension to those who have obtained special qualifications and experience The pension for a medical inspector retiring after 20 years' service is, as a rule, not less than £500 a year Private practice is limited to a few of the larger towns but may be carried on so long as it does not in any way interfere with official duties These duties include acting as consultant to the principal hospitals, and supervising smaller hospitals or dispensaries, initiating and supervising the medical and sanitary work of a province, the medical supervision of schools, the examination of candidates for Government service and pension, and the training of assistant medical officers and native sanitary overseers In the Khartoum medical school there are opportunities for teaching, the Registrar receives £250 a year, and the other teachers receive remuneration in addition to their pay The country is developing rapidly and the Medical Department is being enlarged to meet the increased requirements of the service

Four additional medical inspectors have recently been appointed, bringing the total number up to 28, and there will be further vacancies next year Candidates must be single, under 30 years of age, and they must have held a resident post, preferably house surgeon, in a large general hospital They are required to take out a course of Tropical Medicine in this country before leaving, the fees, in addition to an allowance of £4 15*s* per week during this period, will be paid by the Sudan Government

Applications for further information should be made to Dr Acland 19, Bryanston-square W 1, or to the Deans of the principal medical schools

THE DEGREE OF M D BRUSSELS

To obtain the degree of M D Brussels all foreign graduates must submit their degrees or diplomas for consideration to the Secretary of the University of Brussels According to the standard of the qualification, a period of one, two, or three years must be spent in attending lectures, clinics, and practical work at Brussels before examinations, which are conducted orally in French Further information may be obtained from Dr A D Woolf 13, The Avenue Highams Park E 4

DONATIONS AND BEQUESTS —The late Louisa E Harland of Harefield, left by will among other bequests, £1000 to the Church of England Zenana Missionary Society —Among other bequests the late Sir F G Painter left £1000 to the Bristol Infirmary for general purposes £500 each to the Bristol General Hospital the National Society for the Prevention of Cruelty to Children and the British Home and Hospital for Incurables, Streatham to present themselves for either part of the Examination must give 14 days' notice in writing to the Secretary, at the Examination Hall, Queen-square, Bloomsbury, London, W.C 1

Candidates will be admissible to Examination in Part I on producing evidence .—

1 Of being in possession of a registrable qualification in Medicine, Surgery, and Midwifery

2 Of having attended during a period of not less than five months at an Institution recognised by the Examining Board in England, practical instruction in (*a*) Bacteriology and Parasitology (including Medical Entomology) especially in their relation to diseases of man and to those diseases of the lower animals which are transmissible to man, during 180 hours, of which not less than 150 hours have been occupied in practical laboratory work. (*b*) Chemistry and Physics in relation to public health, during 90 hours, of which not less than 70 hours have been occupied in practical laboratory work. (*c*) Meteorology and Climatology in relation to public health, during not less than 10 hours.

Candidates will be admitted to Part II of the Examination on producing evidence —

1 Of having been in possession of a registrable qualification in Medicine, Surgery, and Midwifery during not less than two years, of being registered by the General Medical Council, and of having completed the curriculum for the Diploma extending over a period of 12 calendar months subsequent to the attainment of a registrable qualification.

2 Of having attended, after obtaining the registrable Qualification, instruction during not less than 80 hours at an Institution recognised by the Examining Board in England in the following subjects —(*a*) The Principles of Public Health and Sanitation for not less than 30 hours, (*b*) Epidemiology and Vital Statistics for not less than 20 hours, (*c*) Sanitary Law and Administration (including Public Medical Services) during not less than 20 hours, (*d*) Sanitary Construction and Planning during not less than 10 hours.

3 Of having attended for three months the clinical practice of a hospital for infectious diseases recognised by the Examining Board in England and of having therein received instruction in the methods of administration The Certificate must state that the candidate has attended on one or more days in each week of the three months that each attendance was of two hours' duration, with a total attendance of 60 hours

4 Of having been engaged during a period of not less than six months in acquiring a practical knowledge of the duties, routine and special, of public health administration under the supervision of a Medical Officer of Health, and of having received, from such officer or other competent Medical Officer during not less than three hours on each of 60 working days, practical instruction in those duties and also those relating to (*a*) Maternity and Child Welfare Service, (*b*) Health Service for children of school age, (*c*) Venereal Diseases Service, (*d*) Tuberculosis Service; (*e*) Industrial Hygiene, (*f*) Inspection and Control of Food, including meat and milk.

The above certificate (4) must be obtained from a Medical Officer of Health who devotes his whole time to public work, or from a Medical Officer of Health of a Sanitary Area having a population *of not less* than 50,000, or in Ireland the Medical Superintendent Officer of Health of a County or County Borough having a population of not less than 50,000.

University of Oxford.—An examination, conducted partly in writing, partly vivâ voce, and in each subject partly practical, is held in Michaelmas and in Trinity Term (until further notice in Trinity Term only) in the following subjects —General Hygiene, General Pathology (with special relation to Infectious Diseases), the Laws relating to Public Health, Sanitary Engineering, Vital Statistics. The examination is in two parts, which may be taken together or separately, but Part I must be passed either before or at the same examination as Part II The fee for admission to the examination is £10 for each part. Successful candidates are entitled to receive the Diploma in Public Health.

The First Part of the examination will comprise (*a*) written papers of three hours each in (i) Chemistry and Physics, and (ii) Pathology and Bacteriology; (*b*) a three hours' practical and vivâ voce examination in Chemistry and Physics; (*c*) a three hours' practical and vivâ voce examination in Pathology and Bacteriology.

The Second Part of the Examination will consist of the following parts:—(*a*) Two written papers, each of three hours, dealing with General Hygiene (including Sanitary Engineering, Vital Statistics, and the Laws relating to Public Health); (*b*) a practical and vivâ voce examination in General Hygiene; and (*c*) a three hours' practical and vivâ voce examination in Pathology and Bacteriology.

Candidates in Part I. of the examination will be required to produce certificates (1) of Laboratory Work in Chemistry, Physics, Meteorology, and Climatology as applied to Hygiene, and (2) of having had Practical Instruction in Bacteriology and Parasitology and the Pathology of the Diseases of Animals transmissible to Man

Candidates in Part II will produce the following further certificates: (3) of a Practical Knowledge of the Duties, Routine and Special, of Public Health Administration, and (4) of having attended the practice of a Hospital for Infectious Diseases at which opportunities are afforded for the study of the Methods of Administration

All the above degrees are now open to Women Students, and particulars of Scholarships, &c., may be obtained from the Principals of the various Ladies' Colleges The names of candidates for the Diploma in Public Health must be sent to the Assistant Registrar of the University, Clarendon Building, Oxford. Applications for any further information should be addressed to the Dean, Department of Medicine, Museum, Oxford

University of Cambridge—Two examinations in so *much of State medicine as is comprised* in the functions of medical officers of health are held during the year. The examination is divided into two parts and demands proficiency in all the branches of study which bear upon the duties of medical officers of health The examinations in both parts will be oral and practical, as well as in writing Candidates may present themselves for either part separately or for both together at their option. but the result of the examination in the case of any candidate will not be published until he has satisfied the examiners in both parts Marks of distinction will be placed against the names of candidates who have specially distinguished themselves in either (1) Part I of the examination. or (2) *Part II.* of the examination. Every candidate will be required to pay a fee of £10 10*s* before admission or readmission to *either part* of the examination Candidates must before admission to either part of the examination produce evidence of having satisfied the regulations applicable to Part I. and Part II. The examination for Part I. is in April and for Part II. in October

For Part I of the examination courses of lectures and laboratory instruction are given in the University on Hygiene Chemistry, &c, and on Bacteriology and Parasitology For Part II the Medical Officer of Health for Cambridge gives courses on Practical Sanitary Administration and in the Administrative Methods of the Infectious Diseases Hospital and the Medical Officer of Health to the Cambridgeshire County Council, on Sanitary Laws School Hygiene Epidemiology There are also courses by special lecturers in Vital Statistics Tuberculosis Service. Venereal Diseases Service, Industrial Hygiene. Maternity and Child Welfare These courses are open to non-members of the University

A special Diploma in Hygiene is granted to medical graduates whose qualifications are not registrable in England The courses and examinations are the same as for the Diploma in Public Health (except that the candidates are not examined in English Sanitary Laws)

All applications for further information respecting examinations and the courses of study should be addressed to Mr. Purvis, Public Health Chemical Laboratory, Cambridge

University of London.—Candidates for the M D Degree may offer State Medicine as a subject in which to graduate The regulations have been revised and *may* be obtained on application to the Academic Registrar, University of London, South Kensington.

University of Durham—The Degree of Bachelor of Hygiene (B Hy) and the Diploma in Public Health

DIPLOMA IN OPHTHALMIC MEDICINE

Special diplomas in ophthalmic medicine and surgery are issued by two examining bodies

University of Oxford —The diploma in ophthalmology (D.O) is granted to registered medical practitioners after passing an examination, held annually in March, which is open to candidates who have pursued at Oxford a course of study in ophthalmology over a period of at least two months and who have attended a 12 months' recognised hospital course Further information regarding these requirements may be obtained from the Dean of the School of Medicine

Conjoint Board R C.P Lond , R C S Eng —The Conjoint Board grants the D O M S after an examination held in two parts, twice yearly in January and July. Part I comprises anatomy and embryology of the visual apparatus, physiology of vision, and elementary optics Part II comprises optical defects, ophthalmic medicine and surgery, and pathology with special reference to ophthalmology The examination in each case is written, oral, and practical or clinical. Candidates may only enter for Part II. on completion of a year of special study of ophthalmology after obtaining a registrable qualification Fee for admission to each part, £6 6s.

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY

This Diploma is granted by the University of Cambridge It is open only to those who hold a medical qualification, and includes a course of lectures and practical work in Physics (Part I) and in Radiology and Electrology (Part II) Attendances at the necessary course of lectures in both subjects, and, in addition, six months clinical experience in an adequately equipped hospital recognised by the Committee, are essential The whole course of study takes six months, though this is likely to be increased in the future, the lectures, practical work, and hospital attendance running concurrently Two courses of study are now recognised by the University of Cambridge One course begins in London in October in preparation for the examination in the following April, the other course begins in Cambridge in January and the examination can be concluded in the following July. In the Cambridge course three months are spent in Cambridge doing the lectures and practical work in Part I , attending the systematic lectures in Part II , and attending the practice of Addenbrooke's Hospital The remaining three months can be completed at any recognised hospital, but special arrangements are made for candidates to continue their studies in London

An independent six months course is arranged by the British Institute of Radiology This Course is held entirely in London, but is recognised by the University as qualifying for the examination, and begins early in October Further particulars as to the Cambridge Course can be obtained from Dr F Shillington Scales Medical Schools, Cambridge and of the London Courses from Dr Stanley Melville, at the Offices of the B I R , 32, Welbeck-street London, W 1

DIPLOMA IN LARYNGOLOGY AND OTOLOGY

The Conjoint Board R C P Lond , R C S Eng , grants the D L O after an examination held in two parts, twice yearly, in June and December Part I comprises anatomy, embryology, and physiology of the ear, nose, pharynx, larynx, trachea and bronchi, and œsophagus Part II comprises the medicine, surgery, and pathology of the ear, nose, pharynx, larynx, trachea and bronchi, and œsophagus, and the recognition and use of special instruments and appliances The examination in each case is written, oral, and practical or clinical Candidates may only enter for Part II on completion of one year of special study of the diseases of the ear, nose, pharynx, and larynx, after obtaining a registrable qualification The fee for admission to each part is 6 guineas

DIPLOMA IN TUBERCULOUS DISEASES

A Diploma in Tuberculous Diseases is given by the University of Wales Candidates must possess a medical qualification registrable for practice in Great Britain and Ireland, and be not less than 25 years of age, and either (Category A) have held, for a period of not less than five years, whole-time appointments for work in tuberculosis , or (Category B) have held a registrable qualification to practise for at least one year, and presented (*a*) a certificate of satisfactory pursuance of a course of consecutive post-graduate study of the clinical and epidemiological aspects of tuberculosis of six months' duration at a recognised university, medical school, or hospital where such a course is given , or, alternatively, a certificate of one year's post-graduate work as a whole-time member of the staff of a tuberculosis hospital, sanatorium, or dispensary approved by the Ministry of Health, signed by the representative of the authorities for whom the work was performed or by the administrative medical officer concerned , (*b*) a certificate of satisfactory pursuance of a course of consecutive post-graduate practical study of the Pathology and Bacteriology of Tuberculosis of three months' duration at a tuberculosis laboratory or a recognised general laboratory where such a course is given , (*c*) a certificate of three months' satisfactory attendance at a tuberculosis institute or dispensary

The examination is divided into two parts and the fee is £10 10s Applications should be made to the Registrar of the University, University Registry, Cathays Park, Cardiff, not later than May 15th

The Cecil Prosser Research Scholarship, of the value of £250 for one year, is awarded triennially for research in Tuberculosis

DIPLOMA IN PUBLIC HEALTH

THE following epitomises the instruction given at various universities and centres of medical education to medical men desiring to obtain diplomas in sanitary science, public health, hygiene or State medicine, as this discipline is variously called Resolutions, designed with a view of ensuring " the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health," have been adopted at various times by the General Medical Council The diploma is registrable by the Council, whose rules on the curriculum become binding on the educational bodies concerned The new regulations, which came into force in 1923, extend the period of study and postpone the granting of a diploma until at least two years from qualification

Conjoint Board of the R C P Lond and R C S Eng New regulations came into force on Jan 1st, 1924, which apply to all candidates who have not commenced bonâ-fide study of Public Health in accordance with the above regulations before that date They are as follows The Examination consists of two Parts Part I will be held in the months of January and June, and Part II in the months of January and July in each year Candidates may enter for Parts I and II separately or at the same time, but they must pass Part I before proceeding to Part II The Examination in each part will be written, oral, and practical Part II will include a practical examination in Infectious Diseases, Food Inspection, and Inspection of selected Premises The Fee for admission to each Part of the Examination, which must be paid three days before that part commences, is £10 10s , except in the case of Candidates who possess the Licence, Membership, or Fellowship of the Royal College of Physicians of London, or the Membership or Fellowship of the Royal College of Surgeons of England, who will be required to pay £6 6s only for each part Candidates who fail to satisfy the Examiners in either part may present themselves again at the next Examination on payment of the same Fees Candidates intending administration under the supervision of a medical officer of health The examination for the diploma is divided into two parts, Part I and Part II , each of which extends over not less than two days A candidate must pass in all the subjects of Part I before being admitted to Part II of the examination In Part I , and also in Part II , a candidate must pass in all the specified subjects at one time Part I of the examination is practical, written and oral, and includes Bacteriology and Parasitology (including Medical Entomology) ; Chemistry and Physics and Meteorology and Climatology in relation to Public Health Candidates may not be admitted to Part I of the examination until they have been certified as having pursued the prescribed courses of instruction in the subjects thereof Part II of the examination, which is written and oral, includes Hygiene and Sanitation (including Sanitary Construction) ; Epidemiology and Infectious Diseases ; Sanitary Law and Vital Statistics , Public Health Administration No candidate can be admitted to Part II of the examination until after the lapse of not less than two years from the date of his obtaining a registrable qualification in Medicine, Surgery, and Midwifery, which qualification must be registered before admission to Part II of the examination An examination in each part will be held annually The examination in Part I will be held in June that in Part II in October Notice of candidature, together with the fee of six guineas for either part of the examination must be sent to the Registrar of the University University Registry. Cathays Park, Cardiff, not later than May 15th for the examination in Part I and not later than Sept 1st for the examination in Part II

University of Edinburgh—Two degrees in Science in the Department of Public Health are conferred by the University of Edinburgh—viz , Bachelor of Science in Public Health and Doctor of Science in Public Health Candidates for the degree of B Sc in Public Health must be graduates in Medicine of a recognised University, and must pass two examinations, for the first of which they must, after graduation in Medicine, have worked for at least 20 hours per week during a period of not less than eight months, of which at least five consecutive months must be in the Public Health Laboratory of the University of Edinburgh and the remainder either there or in a laboratory recognised by that University ; they must also have attended courses of instruction in Physics and Geology in some Scottish University Candidates are not admitted to the Second Examination sooner than six months after having passed the First Examination, nor sooner than 18 months after having taken their degree in Medicine, and they must have attended two separate courses in Public Health in some University of the United Kingdom or in such medical school or Indian, Colonial, or Foreign University as may be approved for the purpose by Edinburgh University, each course consisting of 40 lectures at least ; one of which courses shall deal with medicine and the other with engineering, each in its relation to public health The subjects of examination include Laboratory work, Physics, Geology, Medicine in its application to Public Health, Sanitation, Sanitary Law, and Vital Statistics Graduates who have held the degree of B Sc in Public Health from the University of Edinburgh for a term of five years may offer themselves for the degree of D Sc in Public Health in that University They must then present a Thesis and pass an examination in Public Health. The fees are £4 4*s* for the First and £5 5*s* for the Second B Sc Examinations, and £15 15*s* for the degree of D Sc

University of Aberdeen—Every candidate for the Diploma in Public Health must be a graduate in medicine of the University of Aberdeen, or of any other University whose medical degrees are recognised as qualifying for registration by the General Medical Council of the United Kingdom No candidate will be admitted to the Final Part of the Examination for the Diploma until after the lapse of not less than two years from the date of his obtaining a registrable qualification in Medicine, which qualification shall have been registered before such admission The whole of the prescribed curriculum of study must be undertaken after the candidate has obtained a registrable qualification in medicine, and shall extend over not less than twelve calendar months At least one academic term must be spent at the University of Aberdeen Every candidate shall produce evidence of having complied with the following requirements in respect of study and training —1 Practical instruction in the following subjects within a laboratory or laboratories approved by the University · (*a*) Bacteriology and Parasitology (including Medical Entomology), in relation to diseases of man and diseases of lower animals transmissible to man—at least 180 hours, of which not less than 150 shall be occupied in practical laboratory work ; (*b*) Chemistry and Physics, in relation to Public Health—at least 90 hours, of which not less than 70 shall be occupied in practical laboratory work ; (*c*) Meteorology and Climatology, in relation to Public Health—at least 10 hours ; such instruction to extend over not less than five months or two academic terms 2 A course or courses of instruction extending over not less than 80 hours dealing with (*a*) The Principles of Public Health and Sanitation—30 hours , (*b*) Epidemiology and Vital Statistics—20 hours ; (*c*) Sanitary Law and Administration (including Public Medical Services)—20 hours ; (*d*) Sanitary Construction and Planning—10 hours , such course or courses to be given at an institution or by a teacher or teachers approved by the University 3 Practical instruction, clinical and administrative, within a recognised hospital for general infectious diseases , such instruction to extend over three months, and to include 30 daily attendances of not less than two hours in each week 4 Practical instruction and experience, during not less than six months (including attendance of at least three hours on each of sixty working days) in the duties, routine and special, of public health administration, under the supervision of a medical officer of health, who shall certify that the candidate has received from this officer or other competent medical officer, practical instruction in these duties and also in those relating to · (*a*) Maternity and Child Welfare Service ; (*b*) Health Service for Children of School Age ; (*c*) Venereal Diseases Service , (*d*) Tuberculosis Service ; (*e*) Industrial Hygiene , (*f*) Inspection and Control of Food, including meat and milk The medical officers of health recognised for this purpose by the General Medical Council are (*a*) a medical officer of health who devotes his whole time to public health work or (*b*) the medical officer of health of a sanitary area having a population of not less than 50,000 : or (*c*) in Ireland, the medical superintendent officer of health of a *county or county* borough having a population of not less than 50 000 The examination for the diploma is divided into two parts, each of which extends over not less than three days The following are the fees payable for the courses of instruction given within the University · Lecture Course or Courses, £4 4*s* ; Laboratory Instruction £14 The examination fee is £8 8*s* , which is payable as follows —£4 4*s* for Part I , and £4 4*s* for Part II The fees for external instruction amount approximately to £11 11*s*

University of Glasgow—*Degree of B Sc in Public Health*—Candidates must be graduates in Medicine of a University of the United Kingdom or of some other University recognised for the purpose by the University Court Candidates must produce evidence (1) that, after they have obtained a registrable Degree in Medicine a period of not less than two years has elapsed , (2) that, after they have obtained a registrable degree in Medicine, they have, during a period of not less than 21 calendar months, pursued the course of work and instruction prescribed, and have satisfied the examiners in the prescribed examinations There are two examinations Part I. includes the following subjects . (1) Bacteriology and

(D.P.H.)—No candidate is admitted to the final examination for the Degree of B Hy unless he is a Bachelor of Medicine and Surgery, of not less than two years' standing, of a recognised University, and no candidate is admitted to the final examination for the D P H unless he is a registered medical practitioner, of not less than two years' standing The course of study for the B.Hy and D.P H extends over a period of not less than 12 calendar months, subsequent to the attainment of a registrable qualification. Candidates for the B Hy must attend this course at the University of Durham; candidates for the D P H. may attend it at the University of Durham, or at any medical school or institution which is recognised by the University. The examination for the diploma or degree is divided into two parts A candidate must pass in all the subjects of Part I. before being admitted to examination for Part II In Part I., and also in Part II, a candidate must pass in all the specified subjects at one time The examination for Part I is practical, written, and oral, and includes the following subjects Bacteriology and Parasitology (including medical entomology), Chemistry and Physics, and Meteorology and Climatology, in relation to Public Health Candidates are not admitted to examination for Part I until after they have completed the prescribed courses of instruction in the subjects thereof The examination for Part II includes Hygiene and Sanitation (including sanitary construction), Epidemiology and Infectious Diseases; Sanitary Law and Vital Statistics; Public Health Administration The examination is written and oral, and includes practical examinations in Infectious Diseases, Food Inspection, Inspection of Premises—Dwellings, Factories, Workshops, Schools, &c Candidates are not admitted to examination for Part II until after they have completed the prescribed courses of instruction in the subjects thereof The fee for the examination for the degree of B Hy. is £10 10s and for the degree £6 6s The fee for the examination for the Diploma in Public Health is £10 10s and for the diploma £3 Doctor of Hygiene (D Hy.) · Candidates must be Bachelors of Hygiene of two years' standing, and are required to satisfy the examiners that they have conducted original research in the subject of Public Health The fee for the examination is £20 and for the degree £10

Victoria University of Manchester—An examination in Public Health is held twice yearly. The examination is in two parts and is written, oral, and practical Candidates may present themselves for Parts I and II. separately or at the same time provided that no candidate be admitted to Part II unless he has already passed in Part I No candidate's name will be published until he has satisfied the examiners in both parts of the examination The fee for each part of the examination is £8 8s, and must be paid on or before July 1st in each year For any subsequent examination in the same part the fee will be £4 4s Every candidate who has passed both parts of the examination to the satisfaction of the examiners, and who is legally registered, will receive a Diploma in Public Health The examination will begin about the middle of July and the middle of October in each year Holders of the Diploma in Public Health are eligible for examination for the Certificates in School Hygiene and Factory Hygiene after attending the prescribed periods of study and hospital practice An examination for a Diploma in Bacteriology is held for graduates in science or medicine who have attended prescribed courses for at least one academic year, candidates must present a satisfactory thesis on an approved subject

University of Birmingham—Under the revised rules and regulations of the General Medical Council the University grants a degree of B Sc in Public Health and also a Diploma in the same subject on the following conditions Graduates in Medicine of this University may become candidates for the degree of Bachelor of Science in Public Health by conforming to all the requirements laid down for candidates for the Diploma in Public Health, except that after graduating in Medicine all courses of study must be taken out in the University, and they must, in addition, have attended a three months' course of Geology in the University. A Thesis on the Ætiology and Prevention of a Disease of which the candidate has made a special study must be submitted on entry for B Sc Part II The examinations will be held in the months of March and June and will consist of two parts, each part being written, oral and practical No candidate will be allowed to pass Part II until he has passed Part I Candidates may enter for Parts I and II separately or at the same time The fee for each part of the examination is £6 5s Medical Officers of the Royal Navy who have attended the required course of study at the Naval Medical School, Greenwich, will be admitted to Part I examinations for the Diploma in Public Health, whether they have previously been students at the Birmingham School or not, and the same applies to officers of the Royal Army Medical Corps who have studied at the Staff College Medical Officers of the Navy and Army are admitted to Part II Examination (D P H) on complying with the requirements laid down for attendance upon Courses of Study These Courses need not necessarily be attended in the University of Birmingham

University of Liverpool.—The University grants a Degree in Hygiene (M H) and a Diploma (D P H), and every facility is afforded for training in Sanitary Science and State Medicine. The curriculum for the Degree extends over a period of two years, the first of which is devoted to laboratory instruction and practical classes (including those for the Diploma); the second being devoted to advanced study and research The courses may be taken out at any time, and students are allowed to work daily in the laboratories Composition fee for M H £40 a session, and D P H £45 a course

University of Leeds—The University grants a Diploma in Public Health, and every facility is afforded for training in Sanitary Science and State Medicine The examination, which is held twice in each year—namely, in June and December—is in two parts, and is written, oral, and practical Candidates must pass in Part I before being admitted to Part II Fees—The fee for each part is £6 6s, and for any subsequent examination in the same part £4 4s Instruction in Entomology and Meteorology is given in the first term, and in Sanitary Chemistry and Bacteriology in the second and third terms Practical work under arrangement with the Leeds City Council Prospectus can be obtained from the Academic Sub-Dean of the Medical School

University of Bristol—Diploma in Public Health Candidates must be at least 23 years of age shall be fully registered medical practitioners of not less than two years' standing as such, and shall have passed the examination prescribed by regulation The examination is divided into two parts

University of Wales—Candidates for the Diploma in Public Health, the curriculum for which extends over a period of not less than twelve calendar months subsequent to the attainment of a registrable qualification, must produce evidence of having attended for not less than five months at the Welsh National School of Medicine or at an institution approved by the Court, practical instruction in Bacteriology and Parasitology, Chemistry and Physics, and Meteorology and Climatology in relation to Public Health Candidates must also satisfy the examiners that they have received instruction approved by the University in the Principles of Public Health and Sanitation, Epidemiology and Vital Statistics, Sanitary Law and Administration, and Sanitary Construction and Planning The candidate must also produce evidence that he has attended for three months on the clinical practice of a hospital for infectious diseases containing not less than 100 beds, and has received therein instruction in the methods of administration, and that he has for a period of not less than six months been engaged in acquiring a practical knowledge of the duties, routine and special, of a public health *tion have been adjusted fully to meet the requirements of the regulations of the General Medical Council which came into force on Jan 1st, 1924.* Candidates applying for Regulations should state date of commencement of curriculum The Registrar for Edinburgh is Mr D L Eadie, 49 Lauriston-place, and for Glasgow Mr Walter Hurst 242, St Vincent-street

Royal College of Physicians of Ireland and Royal College of Surgeons in Ireland—Every candidate for the Diploma in Public Health must observe the following rules 1 A period of not less than two years shall elapse between the attainment by a candidate of a registrable qualification in Medicine Surgery, and Midwifery, and his admission to the Final Examination for a Diploma in Public Health 2 The curriculum for a Diploma in Public Health shall extend over a period of not less than 12 calendar months subsequent to the attainment of a registrable qualification 3 Every candidate shall produce evidence of having attended during a period of not less than five months, at an institution approved by the Licensing Body granting the Diploma, practical instruction in—(*a*) Bacteriology and Parasitology (including Medical Entomology), especially in their relation to diseases of man, and to those diseases of the lower animals which are transmissible to man, (*b*) Chemistry and Physics in relation to Public Health, (*c*) Meteorology and Climatology in relation to Public Health At least 180 hours must be devoted to Course (*a*), of which not less than 150 hours shall be occupied in practical Laboratory work At least 90 hours must be devoted to Course (*b*), of which not less than 70 hours shall be occupied in practical Laboratory work At least 10 hours must be devoted to Course (*c*) 4 Evidence of having received, during not less than 80 hours, at an institution or from teachers approved by the Licensing Body granting the Diploma, instruction in the following subjects: (*a*) The Principles of Public Health and Sanitation, (*b*) Epidemiology and Vital Statistics, (*c*) Sanitary Law and Administration (including Public Medical Services), (*d*) Sanitary Construction and Planning 5 Evidence that he has attended for three months on the clinical practice of a recognised Hospital for Infectious Diseases 6 Evidence that he has during a period of not less than six months, been engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration under the supervision of a Medical Officer of Health The examination for the Diploma is divided into two parts The examination for Part I includes Bacteriology and Parasitology (with Medical Entomology); Chemistry and Physics and Meteorology and Climatology, in relation to Public Health The examination for Part II includes Hygiene and Sanitation (with Sanitary Construction), Epidemiology and Infectious Diseases, Sanitary Law and Vital Statistics; Public Health Administration The examination, which is written and oral, includes practical examinations in Infectious Diseases, Food Inspection, Inspection of Premises—dwellings, factories, workshops, schools, &c

DENTAL SURGERY

ANYONE who is on the Medical Register is entitled to practise as a dentist, although he cannot register as such without degree or licence in dentistry, but it is a distinct advantage to take a special dental qualification, otherwise few dental appointments at general or special hospitals or dispensaries are available

THE DENTAL BOARD OF THE UNITED KINGDOM.

Under the Dentists Act, 1921, the powers and duties of the General Medical Council under the Dentists Act, 1878, and under the Medical Act, 1886, which related to the keeping of the Dentists Register and the administration of the Dentists Acts were largely transferred to the then newly-constituted Dental Board of the United Kingdom The registration of dental students at the commencement of their dental studies, and the right of erasure of a name from the Dentists Register, remain with the Council, but the duty of inquiring into disciplinary cases rests with the Board, upon whose recommendations the Council acts

The Dental Board consists of a chairman and 12 members The following are the names and sources of appointment of the members: Chairman of the Board, Rt Hon F Dyke Acland, appointed by the Privy Council Members of the Board: Mr L G. Brock, C B appointed by the Minister of Health; Mr A Young, appointed by the Scottish Board of Health, Mr J H Stirling, appointed by the Governor-General of Northern Ireland, Sir Holburt Waring, M S, F R C S, Sir James Hodsdon, K B E, F R C S Edin, Mr. T Sinclair, C B, F R C S, M P, appointed by the General Medical Council, Mr W R Ackland, M.D S, M R C S; Mr W H Dolamore, L D S, M R C S, elected as Direct Representative by the qualified dentists practising in England and Wales, Mr W Guy, L D S, F R C S, elected as a Direct Representative by the qualified dentists practising in Scotland, Mr. J J Andrew, L.D S, elected as Direct Representative by the qualified dentists practising in Ireland, Mr W. F Bowen and Mr F. Butterfield elected as Direct Representatives by registered dentists not being qualified dentists. Treasurers of the Board, Sir Holburt Waring and Mr. W H Dolamore Registrar of the Board, Mr N C. King

The offices of the Board are at 44, Hallam-street, London, W 1, adjoining the offices of the General Medical Council.

REGISTRATION OF DENTAL STUDENTS

The following are the General Medical Council's Regulations in regard to the registration of dental students which came into force on Jan. 1st, 1923

The Council recommends that, subject to such exceptions as the Council may from time to time allow, every dental student at the commencement of his studentship should be registered in the manner and under the conditions hereinafter set forth.

1. The registration of dental students shall be carried on at the General Medical Council Office in London, in the same manner as that of medical students, and is subject to the same regulations as regards age and preliminary examinations, but in the case of dental students professional study may commence by pupilage with a registered dental practitioner

2 Candidates for a diploma in dental surgery should produce certificates of having been engaged for at least four years in professional studies, and of having received during 24 calendar months instruction in mechanical dentistry (see No 3 below)

3 It is recommended that instruction in dental mechanics be taken at a recognised dental hospital and school. If any part of such instruction be taken by the candidate as a pupil with a registered dental practitioner, the time required to be devoted to it shall be at least twice the time required for the corresponding instruction taken at a dental school

4 Two years' bona-fide apprenticeship with a registered dental practitioner, after registration as a dental student, may be counted as one of the four years of professional study.

5 The necessary instruction in dental mechanics, or any part of it, may be taken by the dental student either before or after his registration as a student When a student can show evidence of regular pupilage in dental mechanics to a registered practitioner, prior to the passing of the prescribed preliminary and scientific examinations, he may be allowed to antedate his registration for a period not exceeding one year prior to the passing of these examinations (see No 3 above).

EXAMINING AND TEACHING BODIES IN DENTISTRY

The list of the Examining Bodies in Dentistry which grant diplomas or degrees in this subject and the regulations for obtaining these qualifications

Parasitology (including Medical Entomology), (ii) Chemistry and Physics in relation to Public Health; (iii) Meteorology and Climatology in relation to Public Health, (iv) Higher Chemistry in relation to Public Health, (v) Physics and Geology. A candidate must pass in the subjects marked (i), (ii), and (iii) of Part I. at one examination. Part II. includes the following subjects: (vi) Hygiene and Sanitation (including Sanitary construction), (vii) Epidemiology and Infectious Diseases, (viii) Sanitary Law and Vital Statistics, (ix) Public Health Administration, (x) Applied Hygiene. The examination for Part II. includes practical examinations in Infectious Diseases; Food Inspection, Inspection of Premises, such as dwellings, factories, workshops, schools, and the like. The examination in Applied Hygiene may be on a selected subject professed by the candidate. A candidate must pass in the subjects marked (vi), (vii), (viii), and (ix) of Part II. at one examination. *Diploma in Public Health (D.P.H.)*.—Candidates for this Diploma must be legally qualified medical practitioners who are matriculated students of the University. A period of not less than two years must elapse between the attainment by the candidate of a registrable medical qualification, and his admission to the final examination (Part II.) for the Diploma. The candidate must, during a period of not less than 12 calendar months, subsequent to his attainment of a registrable medical qualification, pursue the course of work and instruction prescribed, and pass the prescribed examinations. The examination, which is both written and oral, is divided into two parts, Part I. and Part II., each of which extends over not less than two days. No candidate is admitted to either part of the examination until he has completed the prescribed courses of instruction in the subjects of that part. No candidate is admitted to Part II. until he has passed in all the subjects of Part I., nor until after the lapse of not less than two years from the date of his obtaining a registrable medical qualification, nor unless he presents a certificate showing that his name and qualification have been duly registered in the Medical Register. Part I. includes (i) Bacteriology and Parasitology (including Medical Entomology), (ii) Chemistry and Physics in relation to Public Health, (iii) Meteorology and Climatology in relation to Public Health. A candidate must pass in all the subjects at one examination. Part II. includes (iv) Hygiene and Sanitation (including Sanitary Construction), (v) Epidemiology and Infectious Diseases, (vi) Sanitary Law and Vital Statistics, (vii) Public Health Administration. A candidate must pass in all the subjects at one examination. The examination for Part II. includes practical examinations in Infectious Diseases, Food Inspection, Inspection of Premises, such as dwellings, factories, workshops, schools, and the like.

University of St. Andrews.—The Diploma in Public Health is open to those who hold a registered medical qualification of the United Kingdom. The examination is in two parts. (1) (*a*) Bacteriology and Parasitology, (*b*) Chemistry and Physics, (*c*) Meteorology and Climatology. (2) Public Health and Sanitation, Epidemiology and Vital Statistics, Sanitary Law and Administration, and Sanitary Construction and Planning. Before admission to the first examination the candidate must have held his medical qualification for one year, and before admission to the second examination for two years. Graduates in Medicine of the University of St. Andrews may take part or all of the qualifying classes in any University of the United Kingdom or in any Indian, Colonial, or Foreign University or medical school recognised by the University Court, but holders of other registered medical qualifications must spend at least eight out of the 12 months' curriculum in St. Andrews University. A complete course is given in the Conjoint Medical School, Dundee. The examination fee for each division is £5 5*s*.

University of Dublin (Trinity College).—The Diploma in Public Health is conferred, after examination, under the following conditions. The candidate must be a registered medical practitioner and have obtained a registrable qualification at least two years before the second part of the examination. The candidate must have completed, subsequently to obtaining a registrable qualification, five months' practical instruction in a chemical and bacteriological laboratory, or laboratories, approved by the University, must have received instruction in the following subjects: the principles of public health and sanitation, epidemiology and vital statistics, sanitary law and administration (including public medical services), sanitary construction and planning, must have studied, practically, outdoor sanitary work for six months under an approved officer of health, and must have attended for three months at a fever hospital where opportunities are afforded for the study of methods of administration. A special prospectus may be obtained by application to the Registrar of the School of Physic, Trinity College, Dublin.

National University of Ireland *.—At this University there is a Diploma in Public Health, a B.Sc. in Public Health, and a D.Sc. in Public Health.

University of Belfast.—A Diploma in Public Health is given by examination. Every candidate must produce evidence that, after obtaining a registrable qualification, he has during six months received practical instruction in an approved laboratory in which Chemistry, Bacteriology, and the Pathology of the diseases of animals transmissible to man are taught. After obtaining a registrable qualification every candidate must produce evidence that he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. The examination must have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a medical officer of health. The examination will be held in two parts, in March and in June. The first part of the examination will have reference to the general principles of Sanitary Science and the second part to State Medicine and to the applications of Pathology and Sanitary Science. The fee for each part is 2 guineas.

Royal College of Physicians of Edinburgh, Royal College of Surgeons of Edinburgh, Royal Faculty of Physicians and Surgeons of Glasgow.—All candidates for the Diploma in Public Health must have a qualification which has been registered under the Medical Acts. Candidates must have attended not less than four calendar months' practical instruction in Chemistry and Physics (90 hours), Bacteriology and Parasitology (180 hours), and Meteorology and Climatology (60 hours) in a recognised laboratory or laboratories, must have studied outdoor sanitary work for six months under a medical officer of health or other sanitary officer, and must give evidence of attendance for three months at the practice of a Hospital for Infectious Diseases, at which he has received instruction in the methods of administration. The examination consists of two parts, and candidates may enter for both at one period or for either separately. The First Part includes (*a*) Laboratory Work (Chemistry and Bacteriology), (*b*) Physics and Meteorology, and the Second Examination embraces (*a*) Report on Premises visited, (*b*) Examination at Fever Hospital, (*c*) Examination at Public Abattoir, (*d*) Written and Oral Examinations on Epidemiology and Endemiology, (*e*) Vital Statistics and Sanitary Law, and (*f*) Practical Sanitation. The fee is 12 guineas for both examinations, or 6 guineas for either of them. A fee of 3 guineas is payable by rejected candidates for either. The examination is held twice yearly, in May in Glasgow, and October in Edinburgh. The published regulations provide detailed synopses of the subjects of examination. *The curriculum and examina-*

---

* No returns

tion have been adjusted fully to meet the requirements of the regulations of the General Medical Council which came into force on Jan 1st 1924. Candidates applying for Regulations should state date of commencement of curriculum The Registrar for Edinburgh is Mr D L Eadie 49, Lauriston-place, and for Glasgow Mr Walter Hurst 242, St Vincent-street

Royal College of Physicians of Ireland and Royal College of Surgeons in Ireland—Every candidate for the Diploma in Public Health must observe the following rules. 1 A period of not less than two years shall elapse between the attainment by a candidate of a registrable qualification in Medicine, Surgery and Midwifery and his admission to the Final Examination for a Diploma in Public Health 2 The curriculum for a Diploma in Public Health shall extend over a period of not less than 12 calendar months subsequent to the attainment of a registrable qualification 3 Every candidate shall produce evidence of having attended during a period of not less than five months at an institution approved by the Licensing Body granting the Diploma, practical instruction in—(*a*) Bacteriology and Parasitology (including Medical Entomology), especially in their relation to diseases of man, and to those diseases of the lower animals which are transmissible to man: (*b*) Chemistry and Physics in relation to Public Health; (*c*) Meteorology and Climatology in relation to Public Health At least 180 hours must be devoted to Course (*a*), of which not less than 150 hours shall be occupied in practical Laboratory work At least 90 hours must be devoted to Course (*b*), of which not less than 70 hours shall be occupied in practical Laboratory work. At least 10 hours must be devoted to Course (*c*) 4 Evidence of having received, during not less than 80 hours at an institution or from teachers approved by the Licensing Body granting the Diploma, instruction in the following subjects: (*a*) The Principles of Public Health and Sanitation, (*b*) Epidemiology and Vital Statistics; (*c*) Sanitary Law and Administration (including Public Medical Services): (*d*) Sanitary Construction and Planning 5 Evidence that he has attended for three months on the clinical practice of a recognised Hospital for Infectious Diseases 6 Evidence that he has during a period of not less than six months, been engaged in acquiring a practical knowledge of the duties, routine and special, of Public Health Administration under the supervision of a Medical Officer of Health The examination for the Diploma is divided into two parts The examination for Part I includes Bacteriology and Parasitology (with Medical Entomology), Chemistry and Physics and Meteorology and Climatology, in relation to Public Health The examination for Part II includes Hygiene and Sanitation (with Sanitary Construction), Epidemiology and Infectious Diseases Sanitary Law and Vital Statistics, Public Health Administration The examination which is written and oral, includes practical examinations in Infectious Diseases. Food Inspection, Inspection of Premises—dwellings, factories workshops, schools, &c

DENTAL SURGERY.

ANYONE who is on the Medical Register is entitled to practise as a dentist, although he cannot register as such without degree or licence in dentistry, but it is a distinct advantage to take a special dental qualification, otherwise few dental appointments at general or special hospitals or dispensaries are available

THE DENTAL BOARD OF THE UNITED KINGDOM.

Under the Dentists Act 1921, the powers and duties of the General Medical Council under the Dentists Act, 1878 and under the Medical Act, 1886, which related to the keeping of the Dentists Register and the administration of the Dentists Acts were largely transferred to the then newly-constituted Dental Board of the United Kingdom The registration of dental students at the commencement of their dental studies, and the right of erasure of a name from the Dentists Register, remain with the Council, but the duty of inquiring into disciplinary cases rests with the Board, upon whose recommendations the Council acts

The Dental Board consists of a chairman and 12 members The following are the names and sources of appointment of the members Chairman of the Board Rt Hon F. Dyke Acland appointed by the Privy Council Members of the Board. Mr L G Brock C B appointed by the Minister of Health; Mr A Young appointed by the Scottish Board of Health, Mr J. H Stirling, appointed by the Governor-General of Northern Ireland. Sir Holburt Waring M S, F R C S: Sir James Hodsdon, K B E F R C S Edin; Mr T Sinclair C B, F R C S, M P, appointed by the General Medical Council: Mr W. R Ackland, M D S M R C S; Mr W H Dolamore, L D S, M R C S, elected as Direct Representative by the qualified dentists practising in England and Wales; Mr W Guy, L D S F R C S, elected as a Direct Representative by the qualified dentists practising in Scotland, Mr. J J Andrew, L D S, elected as Direct Representative by the qualified dentists practising in Ireland: Mr W. F. Bowen and Mr. F. Butterfield elected as Direct Representatives by registered dentists not being qualified dentists. Treasurers of the Board Sir Holburt Waring and Mr. W H Dolamore Registrar of the Board, Mr N C. King

The offices of the Board are at 44, Hallam-street, London, W 1 adjoining the offices of the General Medical Council.

REGISTRATION OF DENTAL STUDENTS

The following are the General Medical Council's Regulations in regard to the registration of dental students which came into force on Jan 1st, 1923.

The Council recommends that, subject to such exceptions as the Council may from time to time allow, every dental student at the commencement of his studentship should be registered in the manner and under the conditions hereinafter set forth

1. The registration of dental students shall be carried on at the General Medical Council Office in London, in the same manner as that of medical students, and is subject to the same regulations as regards age and preliminary examinations, but in the case of dental students professional study may commence by pupilage with a registered dental practitioner

2 Candidates for a diploma in dental surgery should produce certificates of having been engaged for at least four years in professional studies, and of having received during 24 calendar months instruction in mechanical dentistry (see No. 3 below)

3 It is recommended that instruction in dental mechanics be taken at a recognised dental hospital and school. If any part of such instruction be taken by the candidate as a pupil with a registered dental practitioner, the time required to be devoted to it shall be at least twice the time required for the corresponding instruction taken at a dental school

4. Two years' bona-fide apprenticeship with a registered dental practitioner, after registration as a dental student, may be counted as one of the four years of professional study.

5 The necessary instruction in dental mechanics or any part of it, may be taken by the dental student either before or after his registration as a student When a student can show evidence of regular pupilage in dental mechanics to a registered practitioner, prior to the passing of the prescribed preliminary and scientific examinations, he may be allowed to antedate his registration for a period not exceeding one year prior to the passing of these examinations (see No. 3 above)

EXAMINING AND TEACHING BODIES IN DENTISTRY.

The list of the Examining Bodies in Dentistry which grant diplomas or degrees in this subject and the regulations for obtaining these qualifications

Parasitology (including Medical Entomology); (ii) Chemistry and Physics in relation to Public Health; (iii) Meteorology and Climatology in relation to Public Health; (iv) Higher Chemistry in relation to Public Health; (v) Physics and Geology. A candidate must pass in the subjects marked (i), (ii), and (iii) of Part I. at one examination. Part II. includes the following subjects: (vi) Hygiene and Sanitation (including Sanitary construction); (vii) Epidemiology and Infectious Diseases; (viii) Sanitary Law and Vital Statistics; (ix) Public Health Administration; (x) Applied Hygiene. The examination for Part II. includes practical examinations in Infectious Diseases, Food Inspection, Inspection of Premises, such as dwellings, factories, workshops, schools, and the like. The examination in Applied Hygiene may be on a selected subject professed by the candidate. A candidate must pass in the subjects marked (vi), (vii), (viii), and (ix) of Part II. at one examination. *Diploma in Public Health (D.P.H.).*—Candidates for this Diploma must be legally qualified medical practitioners who are matriculated students of the University. A period of not less than two years must elapse between the attainment by the candidate of a registrable medical qualification, and his admission to the final examination (Part II.) for the Diploma. The candidate must, during a period of not less than 12 calendar months, subsequent to his attainment of a registrable medical qualification, pursue the course of work and instruction prescribed, and pass the prescribed examinations. The examination, which is both written and oral, is divided into two parts, Part I. and Part II., each of which extends over not less than two days. No candidate is admitted to either part of the examination until he has completed the prescribed courses of instruction in the subjects of that part. No candidate is admitted to Part II. until he has passed in all the subjects of Part I., nor until after the lapse of not less than two years from the date of his obtaining a registrable medical qualification, nor unless he presents a certificate showing that his name and qualification have been duly registered in the Medical Register. Part I. includes (i) Bacteriology and Parasitology (including Medical Entomology), (ii) Chemistry and Physics in relation to Public Health, (iii) Meteorology and Climatology in relation to Public Health. A candidate must pass in all the subjects at one examination. Part II. includes (iv) Hygiene and Sanitation (including Sanitary Construction), (v) Epidemiology and Infectious Diseases; (vi) Sanitary Law and Vital Statistics, (vii) Public Health Administration. A candidate must pass in all the subjects at one examination. The examination for Part II. includes practical examinations in Infectious Diseases; Food Inspection, Inspection of Premises, such as dwellings, factories, workshops, schools, and the like.

University of St. Andrews.—The Diploma in Public Health is open to those who hold a registered medical qualification of the United Kingdom. The examination is in two parts: (1) (*a*) Bacteriology and Parasitology, (*b*) Chemistry and Physics; (*c*) Meteorology and Climatology. (2) Public Health and Sanitation, Epidemiology and Vital Statistics, Sanitary Law and Administration, and Sanitary Construction and Planning. Before admission to the first examination the candidate must have held his medical qualification for one year, and before admission to the second examination for two years. Graduates in Medicine of the University of St. Andrews may take part or all of the qualifying classes in any University of the United Kingdom, or in any Indian, Colonial, or Foreign University or medical school recognised by the University Court, but holders of other registered medical qualifications must spend at least eight out of the 12 months' curriculum in St. Andrews University. A complete course is given in the Conjoint Medical School, Dundee. The examination fee for each division is £5 5*s*.

University of Dublin (Trinity College).—The Diploma in Public Health is conferred, after examination, under the following conditions. The candidate must be a registered medical practitioner and have obtained a registrable qualification at least two years before the second part of the examination. The candidate must have completed, subsequently to obtaining a registrable qualification, five months' practical instruction in a chemical and bacteriological laboratory, or laboratories, approved by the University, must have received instruction in the following subjects: the principles of public health and sanitation, epidemiology and vital statistics, sanitary law and administration (including public medical services), sanitary construction and planning, must have studied, practically, outdoor sanitary work for six months under an approved officer of health, and must have attended for three months at a fever hospital where opportunities are afforded for the study of methods of administration. A special prospectus may be obtained by application to the Registrar of the School of Physic, Trinity College, Dublin.

*National University of Ireland.**—At this University there is a Diploma in Public Health, a B.Sc. in Public Health, and a D.Sc. in Public Health.

University of Belfast.—A Diploma in Public Health is given by examination. Every candidate must produce evidence that, after obtaining a registrable qualification, he has during six months received practical instruction in an approved laboratory in which Chemistry, Bacteriology, and the Pathology of the diseases of animals transmissible to man are taught. After obtaining a registrable qualification every candidate must produce evidence that he has attended during three months the practice of a hospital for infectious diseases at which opportunities are afforded for the study of methods of administration. The examination must have extended over not less than four days, one of which shall have been devoted to practical work in a laboratory, and one to practical examination in, and reporting on, subjects which fall within the special outdoor duties of a medical officer of health. The examination will be held in two parts, in March and in June. The first part of the examination will have reference to the general principles of Sanitary Science and the second part to State Medicine and to the applications of Pathology and Sanitary Science. The fee for each part is 2 guineas.

Royal College of Physicians of Edinburgh, Royal College of Surgeons of Edinburgh, Royal Faculty of Physicians and Surgeons of Glasgow.—All candidates for the Diploma in Public Health must have a qualification which has been registered under the Medical Acts. Candidates must have attended not less than four calendar months' practical instruction in Chemistry and Physics (90 hours), Bacteriology and Parasitology (180 hours), and Meteorology and Climatology (60 hours) in a recognised laboratory or laboratories, must have studied outdoor sanitary work for six months under a medical officer of health or other sanitary officer, and must give evidence of attendance for three months at the practice of a Hospital for Infectious Diseases, at which he has received instruction in the methods of administration. The examination consists of two parts and candidates may enter for both at one period or for either separately. The First Part includes (*a*) Laboratory Work (Chemistry and Bacteriology), (*b*) Physics and Meteorology, and the Second Examination embraces (*a*) Report on Premises visited, (*b*) Examination at Fever Hospital, (*c*) Examination at Public Abattoir, (*d*) Written and Oral Examinations on Epidemiology and Endemiology, (*e*) Vital Statistics and Sanitary Law, and (*f*) Practical Sanitation. The fee is 12 guineas for both examinations, or 6 guineas for either of them. A fee of 3 guineas is payable by rejected candidates for either examination. The examination is held twice yearly, in May in Glasgow, and October in Edinburgh. The published regulations provide detailed synopses of the subjects of examination. *The curriculum and examina-*

---

* No returns

An Address
ON THE
PSYCHOSES AND THE PSYCHONEUROSES
CONTRASTED FROM A PSYCHOLOGICAL POINT OF VIEW

(Abridged from a Lecture to the Manchester University Psychological Society.)

By HENRY YELLOWLEES, M.D. Glasg.,
F.R.C.P. Edin., D.P.M.,
MEDICAL SUPERINTENDENT, THE RETREAT, YORK

We are to consider the differences between the psychoses and the psychoneuroses, particularly from a psychological point of view, and this subject is one which has never been, to my knowledge, really seriously tackled. The reasons for this are numerous, and some of them are interesting. To begin with, the question is one of quite unusual difficulty, and secondly, these groups of cases which we are to compare and to contrast—the psychoses on the one hand and the psychoneuroses on the other—have, up till comparatively recent years, been largely neglected by the great majority of scientific workers, and have, indeed, vied with each other for the title of the Cinderella of medical science.

A final reason why the subject has not been so thoroughly opened up as it might and should have been is that between the alienist and the psychologist there is a great gulf fixed, and the opinions which they reciprocally hold of each other are not those calculated to produce an atmosphere favourable for the satisfactory investigation of the matters which lie between them. It has seemed to me that each side is none too capable of seeing the other's point of view and just a trifle depressed at the lack of hopefulness in the outlook from its own, and that the cries of each have a touch of despair as well as defiance.

Preliminary Definition

The first thing we must do is to make clear what we mean by the psychoses. I propose to cut them down for the purpose of this discussion to the big three which are the typical "insanities" and stand out, mysterious, forbidding, and apparently inexplicable among many more comprehensible states of minor importance.

We shall exclude general paralysis of the insane because it has the bodily disease of syphilis as its proved essential causative factor. We shall eliminate the acute confusions and deliria as being demonstrably due to infections; nor are we at the moment concerned with developmental failures resulting in idiocy and imbecility, nor with degenerative changes giving rise to senility and the dementias. Epilepsy also is not our present concern, and we are left, as I say, with the three typical psychoses: the manic-depressive psychosis, paranoia, and dementia præcox. It will be remembered that these are far from being the entire content of psychiatry, and that whenever the psychoses are referred to here I am definitely limiting the phrase to mean these three only. Over against them let us put a representative selection of the typical neuroses and psychoneuroses: for example, anxiety states, neurasthenia, the obsessional states, and hysteria. I shall call these collectively the "neuroses" as shorter and less likely to be confused with "psychoses" than the longer word "psychoneuroses." Now, sufferers from the first-named group are what we call "insane." Those who suffer from the second are not, and we return to the question of why we say this, and to the task of comparing and contrasting them from the psychological point of view.

Pathology

First, as by duty and tradition bound, we turn to look at their pathology, using this word in its meaning of demonstrable morbid histology and anatomy. We are not detained long because we find that neither group has any pathology at all. No one to my knowledge has demonstrated or attempted to demonstrate any constant change in brain or bodily structure to account for a single one of the morbid conditions we have named. We have, it is true, Mott's work upon the changes in the gonad cells in dementia præcox, but beyond his statement that this disorder is accompanied by regressive atrophy of these cells the rest is silence. Disappointed here, we turn to the new psychology for aid, and find a most interesting state of affairs. We find, without for the moment discussing whether it is based on fact or theory, that all the neuroses have a psychopathology which is logical, practical, wonderfully complete, and perfectly intelligible to those who are prepared to try to understand it. When we come to the psychopathology of the psychoses we find that there is one indeed, but it is obscure, abstruse, complicated, thoroughly involved, and leads nowhere. Freud on hysteria is a real joy, Freud on melancholia is a terror, and in addition gives one a headache. One turns from studying the Freudian explanation of any true psychosis with a kind of vicious delight to the passage in which McCurdy blandly remarks: "It is conceivable that Freud and his disciples are as ignorant of psychiatry as their statements imply."

I must digress here to say just one more word about the controversy between alienist and neo-psychologist in this relation.

The new psychologists seem to me to fail firstly because they are, broadly speaking, entirely and gloriously ignorant of clinical psychiatry. They know nothing really worth mentioning about the clinical symptoms, course, management, and treatment of the psychoses. Secondly, they apply their psychopathology, *secundum artem* (which sometimes means by rule of thumb), to every case which comes their way, and do not rest until they have reduced it to a formula which meets with their own entire satisfaction. The attitude of the average alienist is almost too terrible to talk about. Irritated no doubt by the *deus ex machinâ* attitude of the psychologist, he expresses himself with great force and heat, and an almost entire absence of light. All psychology, psychopathology, and psychotherapy are represented to him by the one word "Freud," whom he regards much as our grandfathers regarded a personal devil, only there are sadly few alienists who believe that "the Prince of Darkness is a gentleman." I may add that this attitude is by no means confined to alienists, but is shared by surgeons, obstetricians (strangely enough), X ray specialists, and, indeed, by most who possess the one necessary qualification—namely, an untrammelled ignorance of the entire subject. I sometimes wonder if they regard an open mind and a vacant mind as synonymous terms. The extraordinary thing is that those who tell us most forcibly of the villainies of Freud and those who explain most clearly just where he has failed do so in the very language which he has made part of the current coin of our specialty. We cannot discuss a case without using some of Freud's conceptions and terms, and it is a tragic thing to hear the anti-Freudian alienist describe a case from what he fondly imagines is an anti-Freudian point of view in Freud's very own words and phrases borrowed, or perhaps I should say stolen, for the occasion.

The truth of the matter is simply this, that if you regard the unconscious mind as a myth, and therefore the whole of Freudian psychology as utter and total rubbish, it is quite impossible to get very far in many directions, among them that of our present discussion. A broad view of the psychoses and any investigation of their relation to the neuroses is out of the question if one is too proud, too ignorant, or too bigoted to take the new psychology as even a working hypothesis. That it fails, and fails egregiously will appear in a guide to teaching institutions in dentistry at a later date

In addition to facilities provided by the various Universities, Colleges, and Faculties, a number of dental courses are available In London at the Royal Dental Hospital (School of Dental Surgery), Leicester-square, at University College Hospital Dental School, and at the Dental Departments of Guy's Hospital and of the London Hospital In the provinces at the Birmingham, Manchester, and Newcastle-on-Tyne dental hospitals. In Scotland at the Incorporated Edinburgh Dental Hospital, the Incorporated Glasgow Dental Hospital, and the Dental Department of Glasgow Royal Infirmary In Ireland at the Incorporated Dental Hospital of Ireland, Dublin Dental study may be commenced also at any of the following schools Birmingham Dental Hospital, Bristol Royal Infirmary and General Hospital, Dundee Dental Hospital, Leeds Dental Hospital. Liverpool Dental Hospital, and Sheffield Royal Hospital

PRISON MEDICAL SERVICE

CANDIDATES for the Prison Medical Service are approved by the Secretary of State for the Home Department on the recommendation of the Prison Commissioners Preference is always given to candidates who have experience of lunacy Application for employment may be made on a special form, which can be obtained from the Secretary, Prison Commission, Home Office, London, S W 1 In the smaller prisons the medical officership is part-time, and is usually filled by practitioners in the locality, preference being given to those who have special experience of lunacy In the large prisons the medical staff must devote their whole time to the Service In the case of whole-time service, the appointment is in the first instance to the post of Medical Officer Class II, and from the seniors of this rank the Medical Officers, Class I are selected as vacancies occur The pay of the whole-time prison medical staff is as follows Medical Officer, Class II, £350, rising by annual increments of £20 to £600, making the pay at present with bonus £504 14*s* to £801 11*s*, Medical Officer, Class I £650, rising by annual increments of £25 to £800, plus bonus, making the pay £864 to £1023 9*s* Unfurnished quarters are provided or an allowance in lieu is made Study leave is granted annually to two of the whole-time Medical Officers There are 12 full-time medical officers of Class I and 15 Class II, and 23 part-time medical officers The number of vacancies is never large and promotion is slow In the case of a part-time medical officer, the population of the prison is the basis of fixing the salary unless there are some special features justifying special consideration

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED AUGUST 14TH, 1926

Notifications —The following cases of infectious disease were notified during the week —Small-pox, 74 (last week 60), scarlet fever, 1170, diphtheria, 799, enteric fever, 73, pneumonia, 396, puerperal fever, 40, cerebro-spinal fever, 8, acute poliomyelitis, 37, acute polio-encephalitis, 3 encephalitis lethargica, 42, relapsing fever 1, continued fever 1, dysentery, 9, ophthalmia neonatorum, 113 There were no cases of cholera, plague, or typhus fever notified during the week

Deaths —In the aggregate of great towns, including London, there were no deaths from small-pox, 1 (0) from enteric fever, 9 (0) from measles, 6 (1) from scarlet fever, 20 (0) from whooping-cough, 23 (8) from diphtheria, 85 (17) from diarrhoea and enteritis under 2 years of age, and 18 (3) from influenza The returns for diarrhoea and enteritis show a small rise for the Great Towns and a drop for London, compared with the figures of the previous week The figures in parentheses are those for London itself

MEDICAL DIARY

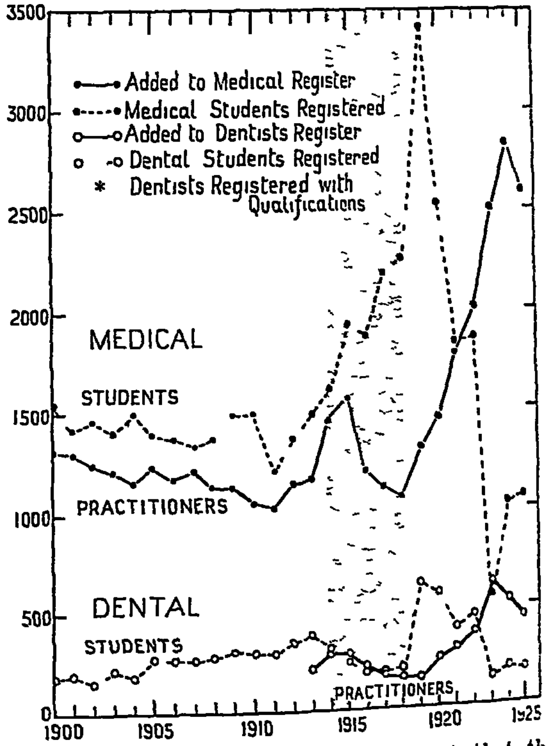
POST-GRADUATE HOSTEL Imperial Hotel Russell sq, W C

WEDNESDAY Sept 1st —9 P M Dr L R Yealland will open a discussion on Seizures

FRIDAY Sept 3rd —9 P M Dr A L Gregg will open a discussion on the Sigmoidoscope in Diagnosis All medical practitioners cordially invited

THE PORTAL OF MEDICINE

THE graph here given shows the numbers of students and graduates entering the medical and dental professions in each year from 1900 to 1925 The stippled band represents the period of hostilities, 1914–1918



The asterisk calls attention to the fact that the curve of dental practitioners includes only those who registered with qualifications The total number of dental entries, including those registered under the Dentists Act, 1921, is 734 for 1924 and 524 for 1925

THE Therapeutic Substances Act, 1925, provides that the Regulations to be made under the Act shall be framed by a Joint Committee consisting of the Minister of Health, the Secretary for Scotland, and the Minister of Home Affairs for Northern Ireland It is provided under Section 4 (2) that for the purpose of assisting the Joint Committee in framing the Regulations there shall be an Advisory Committee The Advisory Committee has now been constituted as follows Sir George Newman, K C B, M D (the Ministry of Health) chairman, Mr John Jeffrey (Scottish Board of Health), Dr Thomas Houston (Ministry of Home Affairs for Northern Ireland), Dr H H Dale (Medical Research Council), Sir Nestor Tirard (General Medical Council), Dr C O Hawthorne (British Medical Association), Dr J H Burn (Pharmaceutical Society of Great Britain), Dr J F Tocher, F I C (Institute of Chemistry of Great Britain and Ireland)

A preliminary prospectus has been issued of a Universal Smoke Abatement Exhibition to be held in Birmingham from Sept 6th to 18th

---

FACTORY GIRLS COUNTRY HOLIDAY FUND —An urgent appeal signed by Lady Sandwich, the Bishop of Kensington Sir Thomas Barlow Dame Mary Scharlieb, and others has been issued on behalf of the Factory Girls' Country Holiday Fund, which sends away to the country women and girls of the crowded and airless districts of London for a week or a fortnight Many of these are the main support of their families Subscriptions and donations should be sent either to the Chairman, Mr J F Green, 42, Upper Mall, Hammersmith, W 6 or to the Secretary, 75, Lamb's Conduit-street, W C 1 knows that he is ill, whereas the second one does not· Let us pursue this question of insight a little further Every sufferer from a neurosis has got insight into his condition He knows that he is ill and also that it is his nervous system which is at fault The neurasthenic knows that he has neurasthenia and can be got to discuss his case with a remarkable detachment Even the hypochondriac realises that his illness does not lie in the various organs of his body with which he is concerned, but in his preoccupation with them The antics of the obsessional patient cannot appear more absurd to others than they do to himself and the hysteric, save when he is actually in a hysterical fugue, has a very much clearer realisation of his case and everything connected with it than we are apt to give him credit for An additional proof of the presence of insight in these conditions is, of course, their amenability to psychotherapy All methods of psychotherapy demand a certain degree of insight into his own condition on the patient's part, and without this no psychotherapy is possible.

INSIGHT.

Now, what of insight in the psychoses? In dementia præcox, as in paranoia, the entire absence of *insight is one of the most striking features* The patient has absolutely none The only psychosis in connexion with which the question is even arguable is manic-depressive insanity The manic phase we can dismiss at once Anyone who has to do with an elated patient knows that complete loss of insight is one of the earliest symptoms of elation We are left with melancholia, that most elusive and baffling condition of all Practically every book and every teacher that I have known has insisted that the melancholic patient has invariably a well-nigh complete insight into his condition It is so tempting The patient preserves his memory, his intelligence, his modesty, and his dignity. He retains as a rule what he has of sensitiveness and refinement It seems, and is, an outrage to utter the word "lunatic" in connexion with him, and his friends have the most extreme difficulty in realising that he is mentally ill at all You would, in fact, need to have a pretty extensive acquaintance with melancholics to realise that it takes a certain amount of courage to say what I tell you now—namely, that, in spite of all this, I do not believe they have any insight worth talking about in the proper sense of the term The melancholic will tell you how long he has been ill, but if asked whether it is an illness or a wickedness, he will, nine times out of ten, plump unhesitatingly for the latter He will discuss his case with a brave effort at detachment, if his case is sufficiently mild, but, though he has recovered from six previous attacks, you will never get him to believe that recovery from this one is even a possibility let alone a moral certainty He may possibly admit to being ill, but if so, he regards his illness as the result of his having failed in some duty, given way to some temptation, lost his power to pray, and so on, instead of regarding these ideas as the *consequences* of his illness No one who so persistently and inevitably puts the cart before the horse as the melancholic does on every possible occasion can fairly be regarded as having insight into his condition And if this is true of the kind of case I have been describing, much more is it true if the attack is in the least a serious or severe one That man has surely no insight who can hold with a grim certainty that he is damned for ever, who can quietly wait and plot and plan for an opportunity to end an intolerable existence, who can believe that death is the only solution for the mass of perplexities, miseries, and hopelessness which surrounds him, and who regards the responsibility for a lost world as being upon his shoulders—all because he did not go to a certain doctor or post a certain letter The melancholic has no insight, and our touchstone holds good In spite of all kinds of exceptions, qualifications, and modifications I know of no better and indeed of no other, means to judge whether we are dealing with a psychosis or a neurosis, than to apply this test of insight

But, with that point gained, are we really much further forward? Let us see just how we stand. The neuroses arise from external causes and the patient retains his insight The psychoses arise from some cause inherent in the patient himself, and are characterised by a loss of insight That sounds well, and it could be worked out into an extremely neat and comprehensive scheme, provided that one ignored one or two rather troublesome difficulties, the chief of which prompts the question: If that is so, why does manic-depressive insanity recover? As a matter of fact, this difficulty seems greater than it really is. All that it does is to force us to be more vague than we would like to be as to the precise nature of this inherent cause, and to give us more sympathy with those who use words to conceal ignorance It is easy enough to postulate some biological defect which, as it were, foreordains a patient to paranoia or dementia præcox, in connexion with which last, indeed, Mott speaks of "an inherent defect in the fertilised ovum" as the beginning of all the trouble, but it is a different and a harder thing to postulate any parallel defect or abnormality which will produce periodic attacks of mania or melancholia at irregular intervals, the recurrences being, very possibly, quite unconnected with external stresses and strains One easy way out is to exclude manic-depressive insanity from the psychoses altogether, but as by every other imaginable test it belongs to them, this cannot fairly be done. Or one might attempt to tuck it away among the, so to speak, accidental psychoses, such as the various infections and confusional states, but there are also many objections to this Efforts have been made for years to demonstrate an infective origin without success, and also we have to deal with the fact that the manic-depressive psychosis or the liability to it is quite definitely inherited though admittedly not so obviously and inevitably as dementia præcox. We shall, therefore, have to stick to our ground and regard it as a constitutional psychosis Finally, we can go on the very opposite tack and throw doubt upon the genuineness of the recoveries in manic-depressive insanity, and point out that even the "diehards" admit that a large proportion of the cases have what they call a "dementia præcox colouring," and that a slight but progressive deterioration may be observed after the so-called recovery from each attack We can also make ingenious play with the tendency to recurrence, and try to correlate this with developmental epochs in the life of the individual Whatever we do, the nasty little snag remains as an obstacle to a pretty scheme

DIFFERENTIATION

I am now going to make a final attempt at differentiation from as purely a psychological point of view as I can, although, from what I have said, the limitations of that view in connexion with the psychoses ought to be obvious What does this symptom of loss of insight really amount to? Surely from a psychological point of view insight is the supreme indication of effective hold on reality. I have insight into my state of mind That is to say, I can look at it with reasonable detachment and see it as it really is In other words I am in touch with reality The reverse is the case, whatever the appearance may be, when I have no insight Now, assuming for the moment that the unconscious mind is not quite the myth which many authorities whom I might quote would have us believe—in fact, accepting the Freudian psychology for the time being—it will be remembered that it is the conscious mind which works under the reality principle and the unconscious mind which works in a primitive kind of way under the pleasure-pain principle In short, the conscious mind is in direct touch with reality and the unconscious mind is not I should say here that the main idea of what follows is borrowed from McCurdy, and no doubt marred in the borrowing We know, of course, that although the unconscious mind is a highly dynamic in many respects, is beside the point Without it, we have nothing whatever to go on and need not begin

I ask you now to return with me to consider the *course* of these two groups of illnesses Sufferers from the neuroses, broadly speaking, respond to treatment and recover We need not consider for the moment what kind of material they were to start with, and I am not concerned to deny that many of them may be very C 3 persons after recovery in some cases The immediate point is that they do recover

What about the psychoses? Again, broadly speaking (because associated with every group we always find a few cases which are like nothing in heaven or earth, and conform to no rules but their own), we find that dementia præcox does not recover, that paranoia does not recover, and that the manic-depressive psychosis recovers indeed, and that perfectly, as far as any given attack is concerned, but shows a remarkable tendency to periodic recurrence That is all we need say about the course of these illnesses, because it is intimately bound up with the question of treatment which we shall now consider

TREATMENT

I must first remind you of the varying meanings which the word "treatment" may have If we use it in as limited a sense as possible, and make it mean direct curative treatment, we can give such instances as the use of quinine in malaria, of salvarsan in active syphilis, and a few, a very few, other drugs, which are what we call specifics for certain conditions They will *cure* them Broaden the meaning of the word just a little and consider the treatment of, say, pneumonia There is no direct curative treatment for pneumonia That is to say, so far as we know, no power on earth will hasten the crisis or delay it from coming when it will come, somewhere about the seventh to the ninth day I need not tell you, of course, that the way in which we treat the patient is frequently the determining factor in whether or not his strength will hold out until the crisis comes, but we are treating his symptoms in the hope that he will be able to stand the strain until his pneumonia has treated itself. Going further still, we see the same principle almost more clearly in cases of, say, valvular heart disease Here we can relieve dyspnœa, cyanosis, and pain, time and again, but we can never correct the faulty mechanical action of the pump, and it will defeat us in the end Finally, we have the treatment, so-called—and properly so-called—of such a condition as inoperable cancer, where the battle is a losing one from the start, and all we can do is to keep the patient as comfortable as we can until his brief hour upon the stage is over, and see to it, if we can, that the curtain falls quietly

Do not forget that all these things are treatment in varying senses of the word In which sense can we claim that there is treatment for the illnesses we are considering?

In the strict and narrow sense of direct cure there is no treatment which will cure a psychosis any more than there is treatment which will "cure" a pneumonia before it has run its course When we turn to the neuroses we find the astonishing fact that there *is* direct curative treatment for them—treatment without which, broadly speaking, they will not get well, and with which they are definitely curable, whatever their duration or severity Further, the treatment is practically always psychotherapeutic, though I am not concerned to argue that it is invariably so, nor do I give *credit* to any one method of treatment more than another I do not even deny that in some cases the cure may be but temporary, or that some few cases may be apparently incurable I am only anxious to emphasise the undoubted clinical fact that cures and responses to treatment occur with a promptitude and definiteness, and to an extent, to which the true psychoses can show no parallel

CAUSATION

With these outlined points of difference in our mind we shall now have to leave clinical fact and go more into theory, not to say speculation Let us look at the causation of these conditions As regards the neuroses is it not true that in the last resort the causes lie in upbringing, environment, and the effects of external circumstance? Analysis and psychopathology surely make this plain They dissect out the devious paths by which the particular neurosis in question became established—the unwise teaching, the one-sided upbringing, the impossible home environment, followed by the repressions, the inadequate sublimations, the regressions—and we are left with the feeling that if only the unfortunate patient had got into the right hands early enough he need never have become a patient at all To put the matter in a word, neurotics, generally speaking, are made, not born I believe it to be far otherwise with the psychoses, the causes of which are more deeply and mysteriously biological Psychotics are born, not made We can—and unfortunately we often do—create neurotics, but the longer I study psychiatry the more surely do I feel that the sufferers from the typical psychoses we are discussing have been ordained to them, as it were, from the foundation of the world Psychopathology may explain their superstructure and elucidate their *content* with greater or less success, but in any case it leaves untouched that deeper *something* which is their essential foundation Hence we are drawn to the conclusion—and it is one of the most far-reaching importance—that in spite of all superficial resemblances in symptoms, mechanisms, or anything else, there is, in fact, a great gulf fixed between the two Many a man can say—as I can say myself—that I can quite well imagine circumstances in which I might become neurasthenic, or hysteric, or obsessional, but I *know* that I shall never become insane.

What this inherent something in the potential psychotic is, how *precisely* it acts, and how it comes to be there at all are questions to which we have, frankly, no thoroughly satisfactory answer, though of course there are those for whose modest requirements the solemn phrase "hereditary predisposition" goes deep enough It is possible, indeed, that this may be all we may ever be able to say, but it is at least worth while to offer a tentative suggestion or two as to what that phrase may possibly imply

If it be true that there is this very distinct cleavage in ætiology between the psychoses and the neuroses, it should surely be reflected in some way or other in their respective symptoms There should surely be something common to the insanities which is not found in the neuroses, or vice versa, something running through all the varieties and cases of one or other of the groups which might give us some lead as to how to study the precise nature of the essential difference between them

We say in our breezy way that people suffering from the psychoses are mad, and people who are suffering from the neuroses are sane, and that is all about it When you come to think about the subject carefully, however, you will find that there are few harder tasks than to put into words any kind of general characteristic which divides the sane from the insane On the face of it, an insane person suggests *to us* someone whose conduct in one respect or other is grossly incompatible with the demands of society, but this suggestion is, in fact, unfair to *both* sides, quite apart from the few doubtful cases which exist on every borderline A very large proportion of the demonstrably insane can conform to society's rules with considerably more apparent success than many a neurotic.

BODILY AND MENTAL ILLNESS CONTRASTED

We shall perhaps arrive most readily at the touchstone for which we are seeking by *contrasting* bodily with mental disease What is the most striking difference, over and above the difference of detailed symptoms—the most striking psychological difference—between the man with acute bronchitis and the man in acute mania? Surely it is that the first man

TABLE I.

Case	Sex and age	Material obtained from—	Organisms found	Hæmo lysis	Treatment
1 W R	F 10	S E	Staph	+	Ung hydrarg oxidi flav 1 per cent
2 M M.	F 10	S E	Strep Staph	+ +	Acriflav 1/1000 et glyc , ung hyd ox flav 1 per cent
3 L M	M 10	Vesicle	Strep Staph	+ +	” ”
4 E. S.	F 11	Vesicle S E S E	Strep Staph Strep Staph Strep Staph Diph	+ + + + + + No	” ”
5 S W	M 10	S E	Strep	+	Ung hyd ox flav 1 per cent
6 S J	M 11	S E E beneath scab (ear)	Staph Strep Staph	+ + +	” ”
7 G A.	M 9	S E	Staph	+	” ”
8 M F	F 9	S E	Strep Staph Diph	+ + No	, ”
9 M E	F 6	S E	Strep Staph	+ +	Emuls acriflav 1/1000, ung hyd ox flav 1 per cent
10 G T	M 14	S E	Staph	+	Ung hyd ox flav 1 per cent ung bismuth
11 J M	M 7	S E	Strep Staph	+ +	Emuls acriflav 1/1000, ung hyd ox flav 1 per cent
12 N C	M 6	S E	Strep	+	Ung hyd ox. flav 1 per cent
13 A. J	M 13	S E	Strep Staph	+ +	Emuls acriflav 1/1000 ung hyd ox flav 1 per cent
14 E K	F 10	S E	Strep Staph	+ +	Ung hyd ox flav 1 per cent
15 H B	M 6	S E	Strep Staph	+ +	Emuls acriflav 1/1000
16 J R	M 10	S E Vesicle	Strep Staph Strep	No ” ”	Emuls acriflav 1/1000, ung hyd ox flav 1 per cent
17 B. C.	M 5	S E	Strep Staph	” ”	” ,
18 D L	M 10	S E	Strep Staph	” ”	” ”
19 J M	F 11	Vesicle	Strep Staph	” ”	” ”
20 G N	F 8	S E	Staph	”	” ”
21 J C	M 8	S E	Strep Staph	” ”	” ”
22 E W	F 11	S E	Strep Staph	” ,	Ung bismuth ung hyd ox. flav 1 %
23 R B	M	Vesicle S E	Strep Staph Strep Staph	, ” ” ,	Ung hyd ox flav 1 per cent ung bismuth
24 C M	M 9	S E	Staph	”	Emuls acriflav 1/1000, ung hyd. ox flav 1 per cent
25 E T	F	S scab (ear crack)	Staph	”	Ung hyd ox flav 1 per cent
26 M C	F 8	Vesicle	Strep Staph	+ +	Acriflav et ol ricini
27 A. F	M 10	”	Strep Staph.	+ +	Ung hyd ox. flav 1 per cent
28 E W	F 11	”	Strep	+	Emuls acriflav 1/1000
29 T S	M 7	,	Strep	+	Emuls acriflav 1/1000, ung hyd ox flav 1 per cent
30 D G	M 8	,	Strep Staph	+ +	” ”
31 K S	F 7	”	Strep Staph	+ +	Emuls acriflav 1/1000
32 M W *	F 14	”	Strep	+	Emuls acriflav 1/1000, ung hyd ox flav 1 per cent
33 W G	F 5	”	Strep	+	Emuls acriflav 1/1000, ung hyd ammon 1 per cent
34 E D	F 11	”	Strep	+	” ”
35 P C	F 8	”	Strep Staph	+ +	Acriflav et ol. ricini ung hyd ammon 1 per cent
36 A. W †	F 12	S E.	Staph	+	Emuls acriflav 1/1000, ung hyd ox flav 1 %
37 R B	M 9	S E	Strep Staph.	+ +	Emuls acriflav 1/1000
38 J K	M 11	Vesicle	Strep Staph.	No ”	Emuls acriflav 1/1000, ung hyd ox. flav et zinci
39 W F	M 9	”	Staph	”	Emuls acriflav 1/1000

TABLE I (*continued*)

Case	Sex and age	Material obtained from—	Organisms found	Hæmo lysis	Treatment
40 D A	F 9	Vesicle	Strep	No	Emuls acriflav 1/1000.
41 E M	F 9	”	Staph	+	Emuls acriflav 1/1000, ung hyd ox. flav 1 per cent
42 B B	F 13	” ”	Strep Staph	No +	Emuls acriflav 1/1000
43 J D	M 5	”	Staph	+	Emuls acriflav 1/1000, ung hyd. ox flav et zinci
44 B F ‡	F 9	”	Staph	+	Lotio acriflav
45 F F ‖	F 7	Bulla	Staph	+	Emuls acriflav 1/1000
46 J B	F 13	S E	Strep Staph	No +	” ”
47 J R	M 13	Vesicle S E	Strep Strep Staph	No ” +	” ,
48 M S	F 12	Vesicle	Staph	+	” ”
49 H H	M 9	”	Staph	+	Emuls acriflav 1/1000, ung hyd ox flav 1 per cent
50 W K	M 5	S E	Strep	No	Emuls acriflav 1/1000
51 R C	M 12	S E	Staph	+	” ”
52 A B	F 13	Vesicle S E	Staph Staph	+ +	” ,
53 L P	M 10	S E.	Staph	+	” ,
54 B M.	F 8	S E S E	Strep Staph Staph.	No + +	” ”
55 W E	M 9	Vesicle	Strep	No	” ”
56 E W	F 13	Vesicle S E	Diph Staph Diph	” + No	” ”

* A sister of Case 36 † Sister of Case 32
‡ Sister of Case 45 ‖ Sister of Case 44

The term vesicle is retained throughout whatever its contents—i e , serous, sero purulent, or purulent The subcrust exudate (S E) is the exudate found after complete removal of the crusts Staph. = Staphylococcus Strep = Streptococcus Diph. = Diphtheroid. Glyc = Glycerine

TABLE II —*Analysis of Cases*

Organisms isolated	Material obtained from—		Total.
	Vesicle	Subcrust exudate	
Pure strep	10	3	13
Pure staph	9	12	21
Mixed strep and staphy	10	18	28
Pure diph	1	—	1
Mixed strep , staph , and diph	—	2	2
Mixed staph and diph	—	1	1
Totals	30	36	66

Total number of cases	56
Total number of lesions examined	66

Strep found	43 times (in pure culture 13 times)
Staph ”	52 ” (” ” 21 ,)
Diphtheroid found	3 , (” ” once)

In the vesicles pure streptococci, pure staphylococci, and mixed streptococci and staphylococci were found equally often , but in the exudate beneath the crusts the proportion of streptococci to staphylococci was 2 3 In four instances, not recorded above, the cultures from vesicles were sterile (two of these were from Cases 51 and 53)

It is worthy of note that on comparison of the cases (Nos 4, 16, 23, 47, 52, 56) where both vesicle and subcrust exudate from the same case were examined on the same day, it will be seen that in no single instance were staphylococci found in a vesicle when streptococci and staphylococci were present in the subcrust exudate In Cases Nos 41. 42, 44, 45, 46, 47, 51, 54, the skin was tested for the presence of organisms In Cases 44, 45, the cultures were sterile. In the other thing, its methods are so totally opposed to the world of reality that for practical purposes it can of itself do nothing real, obvious, and apparent, except *via* the conscious mind, and we know that its function is to activate, bully, persuade, urge, or humbug the conscious mind into carrying its desires into practical effect Can you imagine what the state of things would be if the unconscious mind in some strange and wonderful way threw off the shackles of the conscious more or less completely, not for an hour or two, but for days, months, or years at a time ? Life would surely correspond with greater or less completeness to a dream, a fairy tale, or a hysterical fugue, to name fleeting or artificially produced states which give a vague idea of what one is after.

Imagine an electric current passing up a wire to activate a number of engines, lamps, and so forth, and returning, of course, by another wire Now this current can only manifest itself against resistance, and the only evidence that it is doing any work at all is to be seen in the glow of the lamps and the activity of the engines A hundred and one things may happen among these lamps and engines which will be abnormal, which will need attention, but which cannot possibly be said to impair the integrity of the system either seriously or permanently The current may vary in strength, loose connexions may spark or flicker, the detailed machinery of the engines may require adjustment, the filament of a lamp may break or burn out, but none of these are beyond repair, and we know from abundant other evidence that the current is still there But suppose that the lead and return wires come into contact and form a short circuit, cutting out the entire collection of machinery which will remain in darkness and silence For all practical purposes nothing seems to be happening. You would be inclined to assume that there is no current there at all, but there is; there is the very same current, only it is not working against any resistance It has become detached from the material which it can activate and make to work, and glow, and live I cannot push that analogy further and I cannot completely connect it with what I have already said, nor with all I think It is the best I can do, however, on this very mysterious matter

In some way which we may not elucidate clearly for many and many a year, I believe that the flickering lamps, the variable current, the loose connexions, are the neuroses, with the light and the movement (that is to say, the supremacy of the conscious mind, the hold on reality), impaired, but present, while the short-circuited system corresponds to the psychoses The machine cannot work, the design is faulty from the very laying of the cables , the current, indeed, is running, but because of the very absence of resistance it gives no evidence of its activity. By throwing off all resistance, by freeing itself from the workaday channels of self-expression, it has only succeeded (as, by the way, many a modern poet and artist has done) in robbing itself of any intelligible means of self-expression at all The work it does is totally unsuited for the needs of any electrical machine, it is, in fact, wasting itself in ways past finding out

CONCLUSION.

The subject under discussion bears directly upon a matter about which we are hearing a great deal of rather wild and woolly talk nowadays—namely, the early treatment of insanity, or rather the treatment of " incipient insanity " The matter is one of immense importance, but if anything has emerged from what I have been saying, it is surely this that whether or no the road from sanity to insanity be a long and slow one, it certainly does not pass through a neurosis Whatever the borderline case about which so much is written may be, it is not, in one case in ten thousand, a person who is wavering between a neurosis and a psychosis

---

HEXHAM WAR MEMORIAL HOSPITAL—An open-air children's ward has been added to this institution in memory of the late Rev J E McVitie, who was one of its most devoted workers.

AN INVESTIGATION INTO THE ÆTIOLOGY OF IMPETIGO CONTAGIOSA

(56 CASES) WITH NOTES ON TREATMENT (263 CASES)

BY A R BALMAIN, M B , B S LOND ,
D P H.OXF ,

LATE ASSISTANT MEDICAL OFFICER, COUNTY BOROUGH
OF BIRKENHEAD

THIS investigation was undertaken (1) to ascertain the types of organisms usually found in the lesions of impetigo contagiosa , and (2) to discover a remedy which would be antiseptic ; be suitable to remove the crusts , and would heal the lesions of this disease

Historical Summary

Tilbury Fox [1] described this disease in 1864 Crocker [2] (1881) demonstrated that the disease was due to the presence of cocci Two years later Unna stated that it was caused by short-chained cocci Sabouraud [3] (1901) stated that the impetigo of Tilbury Fox was due to the streptococcus, and that secondary infection occurred by the *Staphylococcus pyogenes* Dubreuilh and Brandeis[4] were not able to confirm the dictum of Sabouraud that all types beginning with a vesicle are due to streptococci In eight cases streptococci and staphylococci were found equally often They stated that the clinical aspect of the lesion gives no indication of the bacteriological content

Farley and Knowles[5] in 30 cases found streptococci in 24 cases (10 cases in pure culture), staphylococci 22 times in 16 cases (with other organisms) They consider the streptococcus to be the cause of the disease Smith and Burkey [6] in nine cases found streptococci (pure) in six cases, staphylococci (pure) in three cases They mention the possibility of the action of an unknown virus, and are inconclusive as to the primary cause

The history of the disease appears to leave serious doubt as to the primary cause of impetigo contagiosa

Ætiology

Material —The material for laboratory investigation was obtained from children attending the school clinic for treatment who were suffering from typical clinical lesions of impetigo contagiosa

As all cases (with one exception) came for treatment with the crusting stage already present, it was considered advisable not only to examine vesicles, but also the exudate beneath the crusts, as this investigation was undertaken primarily to deal with the *treatment* of the condition.

Method —Vesicles, after swabbing with ether, were incised with a sharp platinum spud, and a small platinum loop was inoculated Both spud and loop were at once stroked across blood-agar plates In three instances sterile capillary tubes were used The exudate from beneath the crusts was obtained by lifting off the crust with sterile forceps, taking a loopful from the centre of the exudate, and then stroking a blood-agar plate The sterility of these methods was confirmed in the experiments described in Table III

Media and Stains —The medium used was blood agar poured into plates The nutrient agar was lemco peptone salt agar Subcultures were made in all cases where necessary to obtain pure cultures on blood agar or Löffler's blood serum. Stains used for smears were Gram and borax methylene-blue It will be noticed in Table I that hæmolysis was variable Too much emphasis should not be laid on this fact as different blood samples were used in the preparation of successive batches No attempt was made to differentiate the types of streptococci (the two types usually found are stated by other writers to be *Streptococcus pyogenes* and *Streptococcus anginosus*) is a troublesome procedure if used at home often improperly made, and will tend to spread the disease Norman Walker[7] Olive oil is undoubtedly useful Hot water spreads the disease An excellent idea is the use of kerosene, advocated by Whitfield[8] Unfortunately in children there is the danger of fire MacKenna[9] states that it is necessary to produce desiccation or breaking up the crusts and advises the use of a lotion of calamine and sulphur The one method which is quite futile is the application of ointment on the top of the crusts, the cases drag on week after week, and in the end recourse is usually made to that barbarous method, mechanical removal.

The aim of this investigation has been to find a preparation which will remove the ordinary crusts within 24–48 hours, and be an efficient antiseptic against the organisms found in the lesions The following methods were tried in sequence. (1) Ointments (unguentum hydrargyri oxidi flavi 1 per cent and unguentum hydrargyri ammoniati); these are useless (2) Acriflavine 1/1000 with glycerine 50 per cent caused increase in the exudation (3) Acriflavine 1/1000 in castor oil, this softens the crusts, but is slow in action and will not heal the lesion (4) Acriflavine 1/1000 in paraffin emulsion, effective and antiseptic

In the preliminary use of this emulsion it was made up according to Martindale's formula, but, finally the emulsion, made according to Stowell's formula* was chosen[10] This contains —

Acriflavin. hydrochlorid	0 1
Liquid paraffin .	76
White wax	4
Water	20

Action of Acriflavine 1/1000 in Paraffin Emulsion — The paraffin causes breaking up of the crusts which come away on the dressing without force, in 24–48 hours in most cases In others a further application is required (in dealing with old black crusts a preliminary starch poultice is indicated)

The properties of acriflavine, which is diaminomethylacridine chloride, as an efficient antiseptic are well known (Browning, Kennaway and Thornton)[11] It is 20 times more powerful than mercuric chloride, and acts well in the presence of serum (an important factor in this disease) Gray[12] has recommended the use of lotio acriflavini 1/1000 in the bullous type of the disease

Method of Use —Lint was well soaked in the acriflavine emulsion, and bandaged or strapped over the affected area (any vesicles present were first opened)

The next problem was the after-treatment of the lesions In my opinion the best and quickest results are obtained by continuing the dressings with acriflavine emulsion Where this is done, the lesion heals rapidly, cases have been cured in two to three days The worst cases, of course, take longer Trials of various ointments have been made, including hydrarg ammoniat 1 per cent, 2 per cent, and 3 per cent, hydrarg ox flav ½ per cent., 1 per cent, and 2 per cent (with and without zinc oxid), made up with a vaseline or soft paraffin base Compared to the acriflavine emulsion dressing, the use of ointments seems to me to be unsatisfactory

Cases (Treatment of cases since the commencement of the investigation in May, 1925)

Total* number of cases treated with acriflavine 1/1000 in paraffin emulsion	201
Total number of cases treated with other acriflavine compounds	30
Total number of cases treated with other methods ointments, &c	32
Total by all methods	263

* Some of these cases were ordered ointment after they had been dressed twice with acriflavine emulsion.

Conclusions

1 In a series of 56 cases examined streptococci were found 43 times (13 times in pure culture); staphylococci were found 52 times (21 times in pure culture), diphtheroids were found three times (once in pure culture) 2 Vesicles, whether serous or purulent, and the exudate beneath the crusts may contain the streptococcus 3 The majority of cases are infected with streptococcus plus staphylococcus 4 Human experiments prove that the streptococcus will produce typical lesions of impetigo contagiosa 5 It is considered that the most suitable treatment for impetigo contagiosa, both for removal of the crusts and the healing of the lesion, is with acriflavine 1/1000 in paraffin emulsion.

I should like to acknowledge the great debt I owe to my colleague, Dr H. Mason Leete, for his supervision and suggestions, especially with regard to the technique of obtaining material from cases, skin tests, human experiments, media making, and bacteriological controls His kind help and advice have made this research possible Also to thank Dr D Morley Mathieson (medical officer of health, Birkenhead) for his kind permission to undertake the work.

References

1 Fox, W Tilbury Brit Med Jour 1864, i, 78, 467, &c.
2 Crocker, H R THE LANCET, 1881, i., 82
3 Sabouraud, R. Etude Clin. et Bact. de l'Impetigo, 1900, Ann. de Derm. et de Syph., i, 62, 320.
4 Dubreuilh, W A., and Brandes, R V Ann. de Derm et de Syph, June, 1910, p 323
5 Farley, D L, and Knowles, F. C Arch. Derm. and Syph, June, 1921, p 753
6 Smith, D T, and Burky, E. L. Johns Hopkins Hosp Bull., March, 1924 p 78
7 Walker, Norman Introduction to Dermatology, seventh ed 1924
8 Whitfield, A. Handbook of Skin Diseases, second ed., 1921
9 MacKenna, R. W Diseases of the Skin, 1923
10 Stowell, T. E A. Brit Med. Jour, 1/19, p 244
11 Browning, C H, Gulbransen, R., Kennaway, E. L., and Thornton, A. L. H D Ibid., 1/17, p 73
12 Gray, A. M. H Practitioner, July, 1922, p 74

AN OPERATION FOR CREATING AN ABDOMINAL "SHELF" IN CERTAIN CASES OF VISCEROPTOSIS IN WOMEN.

BY VICTOR BONNEY, M S, M D, B Sc LOND, F R C S. ENG,
SURGEON, CHELSEA HOSPITAL FOR WOMEN, ASSISTANT GYNÆCOLOGICAL SURGEON, MIDDLESEX HOSPITAL.

THAT visceroptosis is far commoner in women than in men is due to several causes The whole substance of the abdominal parietes is everywhere much less strong and resistant in the female than in the male, and particularly in that portion which bounds the inferior limits of the peritoneal cavity—namely, the pelvic floor and the other tissues which close in the pelvic outlet This weakness in the woman as compared with man is related to the function of child-bearing and childbirth, which would be interfered with if the abdominal cavity were bounded by structures of any considerable rigidity. Nature, however, in her concern to secure the best possible conditions for the growth and delivery of the child has, as regards the mother, "cut it so fine" that more or less laxity often remains after the labour, and the woman suffers permanently from some variety of visceral displacement The elasticity of the tissues varies immensely in different women, and in different parts of the same woman In one, for instance, a single pregnancy will leave the abdominal wall like crinkled paper, whilst in another a dozen will scarcely leave a mark. Some fortunate persons, but very few, are made of first-class material throughout, others are mostly made of shoddy, almost all have some shoddy somewhere in their make-up.

In addition to pregnancy and childbirth women are subject to conditions of malnutrition, with consequent tissue weakness, almost peculiar to their sex, the causation of which is at present obscure. Such cases all types (aureus, albus and citreus) of *Staphylococcus pyogenes* were found; the streptococcus was absent The method used was to scarify lightly with the platinum spud a clear area of skin on the cheek, place a drop of sterile saline on the area, and inoculate the culture medium with the platinum loop or spud

---

* Originally produced by Mr Humphreys, chemist, of Norwich. It is a stable emulsion

Other Factors —Of other factors in the ætiology, sex and age of children appear to have no bearing on the disease (in one family the mother was infected on the face and breasts from the baby, and then the two elder children contracted it) Both clean and dirty children contracted it by contact; others by a dirty abrasion, and some following scratching in scabies or with nits in the scalp In 100 consecutive cases malnutrition or anæmia was recorded as present in 25 instances Otorrhœa was present in Cases 16 and 56

Experiments on Adult Skin

The experiments were performed on the writer's forearms, with the exception of Nos 5 and 6, in which Dr. H Mason Leete was inoculated Seven of these experiments were with exudates direct from other lesions, the other five were inoculations with living subcultures on blood-agar plates taken from actual cases of impetigo contagiosa (Table III)

Skin Tests —These were made in six instances from the skin of the forearm, one culture showed the presence of *Staphylococcus citreus*, the others showed no growth

Expt 2 —Twenty colonies were inoculated The lesions resembled typical impetigo contagiosa. The formation of the crusting stage was watched and the crusts were seen to be due to the drying up of the exudated serum The direct smears from the bulla showed many leucocytes, diplococci, streptococcal chains (four elements)

Expts 1, 3, 4, 5, 6, 9, 12 —It is suggested that the dosage of organisms inoculated was insufficient to overcome the skin resistance

Table III —Experiments

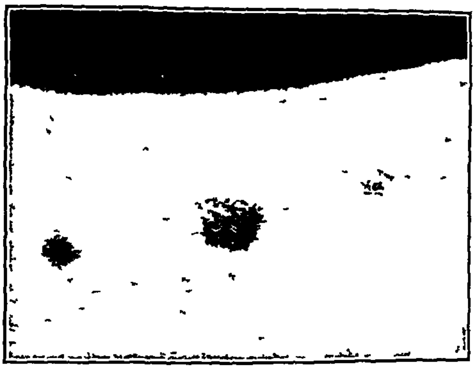
No	Date in 1925	Organisms inoculated	Lesion produced.	Time	Organisms recovered	Method of inoculation
1	30/9	Exudate from Case 41 (staph)	Slight erythema Fading	24 hours 48 "	Nil	Direct rubbing, small area
2	24/10	Strep from Case 47 vesicle, second sub	Vesicle Turbid bulla Crusts Clinical lesions of impetigo contagiosa	24 " 48 " 50 "	Strep in pure culture	Sc Massive dose, area ½ inch.
3	26/10	Exudate from Expt 2 bulla	Slight erythema	24 "	Nil	Light sc
4	26/10	" "	Nil	24 "	Nil	Rubbing
5	26/10	" "	Nil	24 "	Nil	Light sc
6	26/10	" "	Nil	24 "	Nil	Rubbing
7	30/10	Staph from Case 48 vesicle, first sub	Turbid vesicle Purulent bulla " " "Healing" No crust formation	24 " 48 " 56 " 80 "	Staph pyog aureus in pure culture	Sc. Massive dose, area ¼ inch
8	30/10	Staph from Case 48 vesicle	Erythema Fading	24 " 48 "	Nil.	Sc Mod dose
9	2/11	Exudate from Expt 7 bulla	Erythema " Fading	24 " 48 " 56 "	Nil	Sc.
10*a*	26/11	Strep from Case 55 vesicle, first sub plus staph from Case 52 vesicle, second sub	Turbid vesicle and erythema Bulla. Crusts	24 " 48 "	Strep and Staph pyog aureus	Sc Dose (approx) strep 1, staph 4 Area ¼ inch
10*b*	2/12	—	Exudate.	5 days	Strep and Staph pyog aureus	—
11	26/11	Staph from Case 52 vesicle, second sub	Erythema Fading	24 hours 48 "	Nil	Sc Small area
12	28/11	Exudate from Expt 10*a* bulla	Nil.	—	Nil	*Light sc*

Sc. = Scarification

Expt 7 —A loopful of culture from a blood-agar plate was inoculated Although a purulent bulla was formed with surrounding erythema, on removal of the roof of the lesion and evacuation of the exudate no crust formation occurred, but the lesion commenced to dry up immediately (compare Expt 2)

Expts 8 and 11 —The skin resistance was too great for the organisms

Expt 10 —The inoculation was approximately four times as heavy with staphylococci as with streptococci. A typical lesion of impetigo contagiosa was produced, crust formation occurred The direct smear from the vesicle (which was turbid) showed leucocytes, many diplococci, some streptococci (with four elements), and a few staphylococci The subcultures showed a mixed streptococcal and staphylococcal infection The organisms were isolated on second subculture Five days after the inoculation, cultures from the exudate showed mixed streptococci and staphylococci (an interesting point was that the streptococci grew well on a plain agar plate)



Writer's forearm Experiment No 7 Turbid vesicles coalescing to form a purulent bulla after 48 hours, resulting from inoculation with staphylococci.

Inferences Drawn from these Experiments

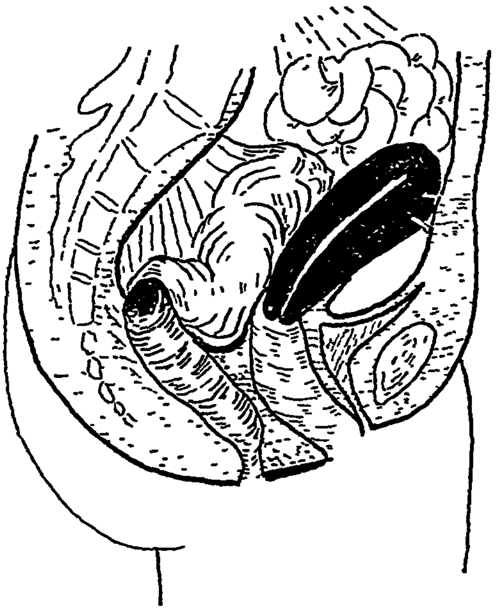
(1) The streptococcus will produce, in the adult, lesions identical with those of impetigo contagiosa (2) Crust formation is due to drying of the exuded serum Staphylococci are not necessary for the formation of crusts (3) The normal adult human epidermis may be resistant to infection with *Staphylococcus pyogenes* (unless a very massive infection) (4) The inoculation of streptococci plus staphylococci cultured from cases of impetigo contagiosa leads to the following result (*a*) formation of a *true* impetigo lesion, (*b*) symbiotic growth of both organisms in the lesion

Treatment

The treatment of impetigo contagiosa resolves itself into two parts (1) before and (2) after removal of the crusts

The methods which have been advocated in the past for the removal of the crusts are the starch poultice, olive oil, hot water, kerosene, desiccation with lotions, ointments, mechanical removal with forceps *The starch poultice is very effective, but it* cavity, and then, still keeping the forceps subperitoneal, inwards under the peritoneum just in front of the ligament, until the forceps point reaches the situation where the pleating suture has been tied. The forceps point is then thrust through the peritoneum, the long ends of the pleating suture are seized, and the forceps are withdrawn the way they came, bringing the ends of the suture with them.

FIG 3



Showing how the "shelf" alters the position of the intestines

Traction on these sutures pulls the pleated part of the round ligaments against the abdominal wall to which they are subsequently fixed by passing the two ends of each suture through the aponeurosis on either side and tying them there This is the method of round-ligament shortening that I now employ, as it effects a stronger suspension of the uterus than the older method in which merely loops of the ligaments were employed. The method leaves no gap through which intestine might make its way between the attached part of the ligaments and the lateral abdominal wall The uterus itself has now to be attached, and this is effected by passing two silk sutures through the upper part of its anterior wall, which also pass through the aponeurosis and peritoneum on either side of the wound Before, however, tying these sutures, it is necessary to pass a mattress suture lateral to them on either side, which, taking off from the uterus in the interval between the ventrofixing sutures and the pleated ligament, perforates the peritoneum and aponeurosis some half an inch outside their cut edges, and is tied there The object of these sutures is to close the gap, which would otherwise exist, between the points where the uterus is ventrofixed and the round ligaments are attached The wound is then closed in the usual way.

The technique described results in the formation by the uterus and broad ligaments of a partition running transversely across the abdominal cavity, entirely separating it from the utero-vesical space (Fig 2) This partition in the standing posture forms a shelf on which the intestines rest Moreover, the front portion of the abdominal cavity is shortened by some three inches, so that the drag on the mesenteries is diminished by that amount, whilst the intestinal pressure is directed downwards and backwards into an opened Douglas's pouch (Fig 3) I have been performing this operation for some years with successful results, and all the patients on whom I have carried it out have been materially benefited by it I therefore commend it to other surgeons as worthy of a trial Care should be taken to fix the uterus sufficiently high to give the bladder ample room, and silk should be used for the main fixation sutures

I have no actual experience of the effect of the operation on subsequent pregnancy, as none of my patients have conceived, most of them having been of an age when pregnancy was unlikely. Judging, however, from the fact that neither ventrofixation, when properly performed, nor round-ligament shortening have any ill-effect on pregnancy or labour, I believe that this operation, which combines the effect of the two will be equally harmless In a good many of the patients of the type under discussion the visceroptosis is entirely due to repeated child-bearing, and in such it is proper to tie the tubes and prevent further pregnancy.

There are certain variations in the technique of the operation applicable to special cases which should be mentioned The combination of symptoms of enteroptosis with menorrhagia either due to fibroids or uterine fibrosis is not uncommon. In such cases, if we cure the menorrhagia by hysterectomy, we make the enteroptosis worse, for a new space of considerable dimensions is created, into which the intestines, already prolapsed, will prolapse further. It is not, however, necessary, as a rule, to remove the uterus. In the case of fibroids the tumours should be enucleated and the sutured uterus used to make the "shelf" in the manner described. This is the more desirable because after myomectomy suture of the uterus to the abdominal wall along the line of the incision in the uterus (which should be on its anterior wall) is good technique, as it safeguards against oozing from the uterine wound When the bleeding is due to fibrosis there are no discrete tumours to enucleate, but even here removal of the organ can be avoided, for through an incision in its anterior wall all the endometrium can be excised, and when the uterus is sutured it becomes a solid column of muscle without any cavity left to bleed from, and this solid column can be ventrofixed to form the centre part of the shelf.

When the cæcum is markedly prolapsed I suture its caput to the back of the right broad ligament which forms the right-hand portion of the shelf, so as to prevent this portion of the bowel sinking into the pelvis. Similarly the pelvic colon can be sutured to the back of the left broad ligament, if there seems any advantage in so doing

HAY FEVER

BY F G. CHANDLER, M D CAMB., F.R C P LOND.,
PHYSICIAN WITH CHARGE OF OUT-PATIENTS, CHARING CROSS HOSPITAL PHYSICIAN, CITY OF LONDON HOSPITAL FOR DISEASES OF THE HEART AND LUNGS

IT is a curious fact that although many hay fever subjects may react most strongly to the pollen of *Phleum pratense* (Timothy grass)—that is to say out of those limited numbers of pollens usually employed—their hay fever will begin many weeks, often two months, before the Timothy grass comes into flower. Moreover, in many parts of the country this grass is comparatively rare One may walk for miles without seeing a single specimen It is clear, therefore, that hay fever is not caused by Timothy grass pollen Freeman,[1] however, denies to the toxin any specificity Any pollen, he says, may produce the same reaction, but in a lesser degree A mixed antigen, therefore, is not necessary, and an attempt to produce a specific antigen is in vain; and for treatment all that is necessary is a Timothy grass pollen antigen I doubt if this hypothesis is tenable. It is true that most hay fever subjects will react to Timothy grass, and that the reaction to this pollen is frequently the most marked Nevertheless, if tests are made of various pollens (and I think the dermal method is by far the best method of making the test),[2] it will be found that a marked reaction is aroused by some grasses and none by others For example, a certain case (D F) tested by the following grasses gave the following results —

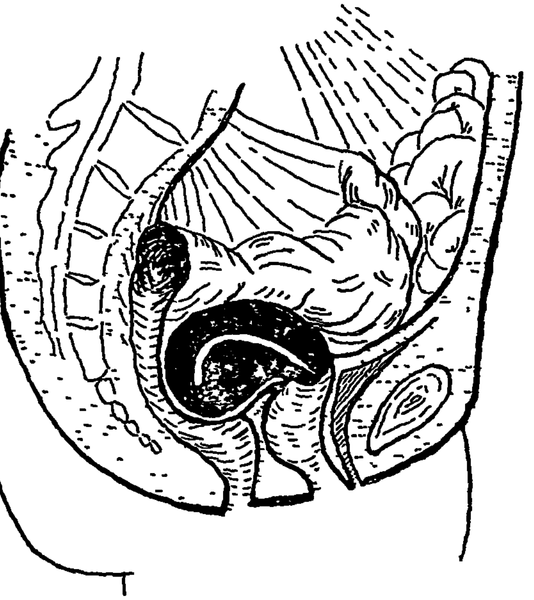
---

[1] Freeman J THE LANCET 1911 ii 814
[2] Chandler, F G THE LANCET, 1925, i, 1177

patients present a characteristic picture, being thin and angular in appearance, with pigmented, harsh-looking skins and bluish-red cold hands They look as though "their food didn't nourish them," to use a popular lay phrase. Many of these women have visceroptosis, although they have never borne children

There is much variation as to which organ or group of organs takes part in a visceroptosis. In some cases the kidneys, transverse colon, and stomach are more particularly affected, in others it is the uterus, vagina, and pelvic colon and cæcum, whilst in others again all the organs lying in the abdomino-pelvic cavity droop It is with the last two of these groups that this paper is concerned, because in both of them retroversion of the uterus is usually present, and often some variety of prolapse as well, and as a result the symptoms are chiefly pelvic or lower abdominal, and the gynæcologist sees a large proportion of these patients The symptoms complained of are a sense of weakness preventing any prolonged exertion, backache, and pain referred to the lateral parts of the lower abdomen, in the region of the appendix and cæcum on the right side, and the point where the colon crosses the pelvic brim on the left side This pain, which is evoked by standing and exertion, and which disappears with recumbency, is probably due to drag on the ovario-pelvic ligaments. When the supporting apparatus of the vagina (the cardinal ligaments and levator diaphragm) partakes in the ptosis, the symptoms of prolapse are also present—namely, bearing-down pain and a sense of something falling In addition, there is present in most cases more or less evidence of intestinal toxæmia, secondary to intestinal stasis, indigestion, flatulence, obstinate constipation, and general ill-being In a paper by myself and Moreland McCrea, published in THE LANCET of Nov 10th, 1923, we pointed out that retroversion tended to produce constipation, chiefly because the backwardly-lying uterus interfered with the natural function of Douglas's pouch We showed that this extension downwards of the peritoneal cavity plays an important part in the mechanism of defæcation because it permits pressure to be brought to bear on the upper rectum by the intestinal coils forced into the pouch during the act of straining. All conditions which obliterate or fill up Douglas's pouch are accompanied by constipation, excepting those (such as acute inflammatory masses) which actively irritate the bowel When the retroverted uterus is large enough it hampers free passage through the bowel by sheer pressure, but the chief ill-effect of this displacement arises from the fact that when Douglas's pouch is filled up by the uterus the intestinal coils during straining or any act that raises the intraperitoneal pressure are forced forwards above and in front of the uterus, and their compressional effect is exercised not as it should be, on the rectum, but on the bladder, and through it on the anterior vaginal wall Such a change in the direction of the compressional force tends to cystocele

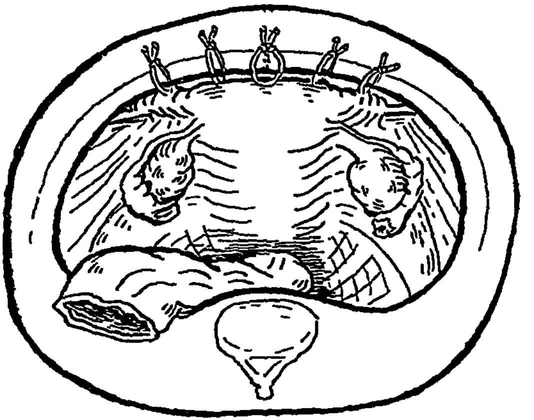
FIG 1



Showing the position taken up by the intestines when the uterus is retroverted

A further effect is that the absence of the uterus from its normal position leaves a considerable free space between it and the bladder into which the pelvic colon prolapses forwards, with the result that the meso-colon becomes elongated, whilst the lower coils of the small intestine descend into it, with a corresponding elongation of the mesentery, and these elongations are enhanced by the chronic distension of the intestine which accompanies the stasis (Fig 1) A large proportion of the cases of the type I have described come up for treatment and are operated on primarily on account of the genital displacements I thus came to notice that operative rectification of a retroverted uterus, either by ventrofixation or round-ligament shortening, was frequently followed, not only by disappearance of the symptoms strictly due to the retroversion, but also by great improvement in the symptoms ascribable to the intestinal ptosis The reason for this, I believe, is not only that the operation restores the normal defæcatory mechanism and sometimes removes a hampering pressure from the lower bowel, but also because the replacement of the uterus shortens the abdominal cavity in its lower and front part, so that the intestines cannot fall so far in that direction, because the uterus and broad ligaments occupy the space where they would fall I therefore began in selected cases to fix the uterus and broad ligaments in such a way as to form a complete barrier across the front part of the lower abdomen, completely cutting off the utero-vesical pouch from the general peritoneal cavity The operation is in effect a combination of the operations of direct ventrofixation and round-ligament shortening, and is carried out as follows

FIG. 2.



Showing the "shelf" and the sutures that hold it in position

Technique of the Operation

The abdomen having been opened the round ligaments are pulled up and a puckering suture is run along each, starting about an inch from the point where the ligament leaves the abdominal cavity and ending at the attachment of the ligament to the uterus This suture, when tied, pleats the part of the ligament sutured, so that it forms a solid excrescence, attached to the side of the uterus, which is presently used to suspend that organ The suture should be passed through the ligament itself, not merely through the peritoneum covering it, and the tied ends are left long Starting from the edge of the wound, the round ligament forceps are passed outwards between the abdominal aponeurosis and the rectus muscle until their point reache the spot where the round ligament leaves the abdomina is clamped and the two placed in position for anastomosis Not infrequently the first inch or more of the jejunum is attached to the under surface of the mesocolon by a membrane triangular in shape and varying in breadth, and this must be divided before putting on the clamp

It is very important that the edges of the opening in the mesocolon should be sutured to the stomach wall after the anastomosis is completed, because, apart from anything else, when the clamps are removed the stomach readjusts itself and recedes into the lesser sac, and if its lowest part lies to the right of the midcolic artery it will drag a part of the bowel lying just distal to the anastomosis with it, and kinking will ensue owing to its being slung over the right edge of the mesocolic opening in which runs the artery

Advantages of the Method

The advantages of this method are · (1) That there is a vertical or slightly oblique opening in the posterior wall of the stomach extending right into the great curvature at its most dependent part (2) That there is very little disturbance of the normal anatomical relationship of stomach and proximal jejunum, the factor of relationship being an extremely important one in any operation (3) That the anastomosis is, for all practical purposes a natural no-loop one. (4) That the incision is placed between the large vessels which run upwards for a variable distance on the posterior surface of the stomach If any of these should, however, be cut, the hæmostatic stitches whose direction is necessarily at right angles to them, are very efficient in checking hæmorrhage (5) That in the matter of drainage an incision into the lowest part of the stomach is more effective than one placed elsewhere. (6) That no matter what shape or form the stomach may assume during contraction, the food must in its passage onwards reach that opening (7) That there is never any regurgitant vomiting, immediate or remote

I am well aware of the fact that many surgeons use a vertical incision into the stomach, but what I have tried to emphasise is that there are several very important factors which have a distinct bearing on the length, direction, and position of that incision

There is another incision commonly used—the transverse or oblique This lies horizontally between the two curvatures of the stomach and must inevitably involve a certain amount of kinking of the jejunum both at its commencement and at the stoma in a no-loop, and at the stoma alone in a short-loop operation The nearer the greater curvature this incision is placed, the greater the danger from hæmorrhage The anatomical relations of the parts are unnecessarily disturbed The stoma does not under any circumstances lie at the most dependent part of the stomach Even when the stomach is full there is a quantity of food which will pass on towards the pylorus without ever having the opportunity of coming into contact with the opening, and this is the portion of food which passes below the level of the stoma and makes its way out through the pylorus

I have on many occasions observed this on the X ray screen, and in order to lessen this possibility and increase the facilities for drainage I devised an operation [1] which I have since given up in favour of the method dealt with in this note Believing, as I do that drainage is of prime importance I feel quite sure that this method is the most suitable and satisfactory from every point of view, and that no other is so efficient

---

[1] Practitioner, January, 1920

A New Perthshire Cottage Hospital —The Duchess of Atholl, M P , has opened a cottage hospital which has been given to the town of Auchterarder and the neighbouring villages by Mr Andrew T Reid of Auchterarder House, as a memorial to his father and mother Mr Reid has also provided an endowment which will provide an annual income approaching £1000

THE CARDIAC CIRCULATION AND DISEASE

By GEOFFREY BOURNE, M D Lond,
CHIEF ASSISTANT, CARDIOLOGICAL DEPARTMENT,
ST BARTHOLOMEW'S HOSPITAL, PHYSICIAN,
EAST LONDON HOSPITAL FOR CHILDREN,
SHADWELL.

A primary consideration in attempting to assess the result of any diseased process is an estimation of the degree to which repair is possible No single factor is more concerned in this than is adequacy of circulation Absence or deficiency of oxygen or food will prevent recovery when all active toxæmia or infection has ceased It is not enough to regard the larger vascular supply for the smallest arterioles and capillaries are the only intimate intermediaries between the lymphatics and parenchyma of the organ and its food sources

The object of this paper is to analyse the dependence between cardiac function and cardiac circulation The conclusions in it are manifestly incapable of experimental proof in the human subject but some of them are necessarily true upon logical and physiological grounds alone Almost without exception the causes of heart failure are primarily poisons Some, like that of diphtheria, are exotoxins and produced away from the heart; others, like that of syphilis and possibly also of rheumatism arise from a local infection When the poisons themselves have been neutralised or have ceased, recovery should occur provided the blood-supply to the parenchyma is efficient An anatomical examination of the vascular system of the heart is incapable of suggesting, as does the portal or pulmonary, its essential variations from the normal It has arteries capillaries, and veins as has any other organ, but differs from all others in its rhythmic motility

Physiologically, it is an easy matter to measure the outflow from the coronary sinus, to deduce from it the amount of the coronary flow and to measure the volumetric changes produced in this by a number of different factors A measurement of the flow as it occurs in the lumen of the coronary arteries during systole and diastole and the relation of this to the various phases of the cardiac cycle, is a different matter, for allowance must be made for the effect of the peripheral pressure exerted upon the terminal distributions deep in the substance of the contracting muscle The vessels must, therefore be thought of anatomically in reference to this effect upon them of cardiac function Contraction of the heart will completely empty the capillaries and veins and will prevent the entrance into the substance of the organ of arterial blood during systole, for the systolic arterial blood pressure, at any rate in the all-important left ventricle must be equalled by the systolic muscular force, and peripheral arterial pressure decreases with the diminution in the size of the lumen

Tracings of intra-coronary pressure taken physiologically show a systolic rise that is maintained also to some degree during diastole, but such tracings are apt to give a false mental picture Similar tracings of the systemic circulation taken from the radial pulse are accompanied by a concomitant onrush of arterial blood through the organs, and an unreflecting examination of coronary tracings by analogy accepts a similar result in reference to the heart Reflection will show that both are pressure readings and that the coronary systolic period is accompanied by no corresponding flow through the contracted heart muscle The surface arteries only are filled with blood at the systolic pressure, but this blood is for the moment relatively stationary and prevented by muscle contraction from entering the vessels in the substance of the organ This preliminary filling of the surface vessels can have no relation to the nutritive flow through the substance of the heart, and in the argument it is therefore disregarded, attention being confined to the latter essential process Thus, the individual heart muscle-fibres receive through their nutrient

Table showing Reaction to Certain Grasses

—	Grasses	—	Wheal (cm)	Red zone (cm)
1	Mixed grass pollen (Duncan, Flockhart)	+ + +	2 ×1	5 ×3
2	Foxtail grass (*Alopecurus*)	0	0	0
3	Rye grass (*Lolium*)	+	0 6 ×0 6	2 5 ×2 5
4	Meadow grass (*Poa*)	0	0	0
5	Yorkshire fog grass (*Holcus*)	+ + +	1 ×1	3 ×5
6	Cock's foot grass (*Dactylis*)	0	0	0
7	Timothy grass (*Phleum*)	+ + +	2 ×2 2	7 ×4

Again in a case (W W B) I found no reaction to Timothy grass, but a marked reaction to *Lolium* and *Holcus*

There would appear, therefore, to be several pollen toxins and not one pollen toxin. If this is so it would seem reasonable to attempt to make a more specific antigen and not to use Timothy grass pollen as a more or less non-specific desensitiser This I have been doing in my own practice for the last year or two with apparently good results

What is the Exciting Cause ?

Seeing that Timothy grass pollen is not responsible for the onset of hay fever, it is a matter of great interest to know what is the exciting cause Now it is the anemophilous plants alone that are likely to cause this disorder Of these the most important are certain trees, the flowering trees and the catkin trees (*Amentaceæ*), sedges, rushes, and grasses I have tested several tree pollens but have seldom obtained a reaction Most of the sedges and rushes come into full flower after the beginning of the hay fever season Of the grasses the most common early flowering grass is *Anthoxanthum odoratum* (sweet-scented vernal grass), whole acres of which may be seen fully out in May This spring I have collected the pollen of this grass, and with it suspended in 14 per cent alcohol I have obtained very marked and intense dermal reactions, so great as to leave little doubt that this is one great cause at least of hay fever, if not the chief cause

Of those cases that I have been able to test up to now very marked reactions have been obtained, e g

Case	Wheal (cm)	Red zone (cm)
D F	2 ×2	4 ×4
H C	2 ×1 5	5 ×3
G H B	1 75 ×1	4 ×4
E R	4 ×3	6 ×5
F M	1 5 ×1	3 ×3
C G	2 ×1 5	4 ×4

Theoretically, we ought to be able to desensitise pollen-sensitive subjects Sometimes we seem to succeed, at others to fail I believe that frequent injections are necessary, at least three injections a week, immediately before and during May, and then at perhaps longer intervals for the rest of the hay fever season I would suggest that Anthoxanthum pollen should be added to the usual group of test pollens, and that this should form a constituent of all stock hay fever vaccines If a pretty name is required, Anthoxanthene might meet the demand The pollen may be collected by taking the heads, just before the anthers are due to emerge from the glumes, and grinding them up with 14 per cent alcohol and straining off all coarse particles; or the grass may be collected just before flowering, placed in water, protected from draught, and the pollen allowed to fall upon paper In sheltered positions it is possible to collect the pollen from the grass where it grows direct; but usually all the pollen grains are blown from the anthers the very moment they ripen

I suggest that a method of scientific standardisation of the solutions of the pollen would be to count the grains, as leucocytes are counted, and subsequently to dilute and treat as may be needed

Anthoxanthum pollen solutions may now be obtained from Messrs Duncan and Flockhart

SOME ANATOMICAL AND MECHANICAL FACTORS TO BE CONSIDERED IN THE OPERATION OF POSTERIOR GASTRO-JEJUNOSTOMY

By DONALD MacLEOD, F R C S Edin ,
HON SURGEON, LEIGH INFIRMARY, LATE R S O , NORFOLK AND NORWICH HOSPITAL

Posterior gastro-jejunostomy is admittedly the operation of choice in the treatment of duodenal ulcer, but the method varies and the function is still in dispute There are two schools, one of which believes that the physiological effect is the predominant factor, the other that drainage of the stomach is the mainly important one I believe that this operation is essentially one of drainage, and where no-loop gastro-enterostomy is used as a drainage operation there are definite indications for the length, direction, and position of the incision into the stomach In view of differences in the technique adopted by different surgeons it may be worth while to review these indications

In a large series of observations made during operations and at other times in the anatomical department of the Victoria University, Manchester, it was found that the position of entry of the jejunum into the general peritoneal cavity—that is, that part of the jejunum which lies below the duodeno-jejunal flexure as it passes either through the transverse mesocolon or immediately between it and the posterior abdominal wall—is constant in position regarding its level, and lies either in front of or to the left side of the third lumbar vertebra In some cases of general visceroptosis it was placed as low as the lower border of the fourth, but it was always well above the level of the greater curvature The position of the lowest part of the stomach is not constant, but lies somewhere on the greater curvature, between two points, one of which lies one inch and a half from the pylorus and the other two inches to the left of the middle line No matter how atonic or hypertonic the stomach, this never varies What appears on mere inspection to be the lowest part of the stomach is not necessarily so, as the position of the pylorus may vary according as the patient is supine or erect The most dependent part of the stomach can be found by pulling the wound edges apart and applying gentle and even traction downwards on the greater curvature itself, or on the transverse colon from left to right or vice versa In the great majority of cases this lies to the left of the midcolic artery, but in a few it is placed to the right

The subjacent proximal jejunum—that is, that portion of the jejunum extending from its point of entry to the point where it is crossed by the greater curvature—runs sharply downwards, in most cases across or just to the right of the most dependent part of the stomach, and in a lesser number of cases slightly obliquely to the left

The length of that portion of the posterior stomach wall lying in relation to this part of the jejunum varies, of course, according to whether the commencement of the jejunum lies nearer the greater or lesser curvature, but in every case there is ample for a no-loop anastomosis with a satisfactorily large stoma

We have here, then, a most tempting method for our anastomosis, and that is to open into the lesser sac through the transverse mesocolon to the left of the middle line, and stretch this opening in all directions—particularly upwards and backwards to the commencement of the jejunum, and downwards as far as the arch of the left branch of the midcolic artery We then note the point on the posterior wall of the stomach which lies in relation to the jejunal entry, and apply our clamp to that part of the stomach lying between this point and its lowest part, the stomach, of course, having been pulled out through the meso-colic opening An equal length of proximal jejunum possibly be influenced by loss of aortic elasticity. Tachycardia above an unknown rate must inevitably impair the cardiac circulation, though this might be to some extent compensated by a raised diastolic pressure. In assessing any cardiac or cardiovascular lesion it is logical to consider separately its possible effect upon the cardiac circulation.

In attempting to devise fresh methods of therapy in cardiac failure or disease the virtues of bradycardia as a definite end to be sought should be borne in mind.

Note.—Since completing the above paper the writer has had the privilege of personal communication with Dr. G. V. Anrep, who has devised an electrical method of measuring coronary flow. A chart indicating the time relations between the systoles of auricle and ventricle with the flow of blood in the coronary arteries and coronary sinus is appended, thanks to his kindness. Dr. Anrep's work is in process of publication and confirms in the main the conclusions reached above.

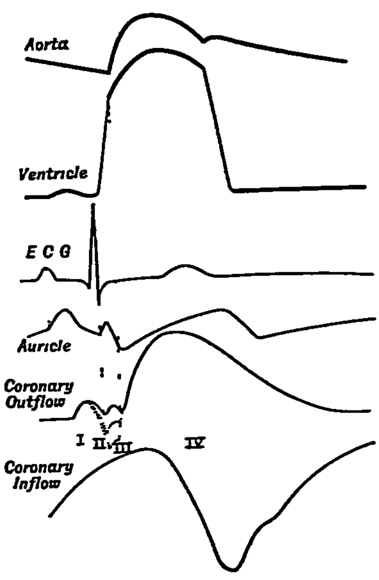


Chart showing time relations between (from top downwards) (1) aortic pressure, (2) left intraventricular pressure, (3) electrocardiogram, (4) intra-auricular pressure, (5) outflow of blood from the coronary sinus, (6) inflow of blood into the coronary arteries. Readings 5 and 6 refer to the ebb and flow of blood in and into the coronary vessels, and the argument in the text refers to the conditions in the smallest vessels in the substance of the muscle. It is suggested that the continued flow of blood into the coronary arteries (not necessarily into the cardiac substance) during the early part of systole may be due to two factors: (1) the distension of the epicardial vessels, (2) the fact that the right intraventricular pressure is less, normally, than is the left, so that the effect of this latter—as manifested by the systolic intra aortic pressure—may be to force some blood into the right ventricular substance against the resistance of the former. The argument as regards the ultimate vessels of the left ventricle—and possibly as regards those of the right—remains unaffected.

LIVERPOOL OPEN-AIR HOSPITAL FOR CHILDREN.—This hospital at Leasowe, in Cheshire, is maintained by grants from the Liverpool Corporation, the Ministry of Health, the Board of Education, and various local authorities. The report of the senior medical officer, Dr. T. Hartley Martin, shows that last year 82.8 per cent. of all cases treated were discharged "disease quiescent"; 26 of the total of 213 discharged were found, after a short stay, to be non tuberculous. Six patients were discharged as unimproved; one of them, a case of tuberculous osteitis, had been in the hospital for 1531 days. Several out-patient clinics have been established, and Leasowe claims to have been the first hospital in the country where after-care work formed part of the original scheme. All the children who are able to benefit receive three and half hours instruction daily.

Clinical and Laboratory Notes.

TWO CASES OF SPLENECTOMY IN PURPURA HÆMORRHAGICA

BY A. W. FALCONER, C.B.E., D.S.O., M.D. ABERD., M.R.C.P. LOND.,
PROFESSOR OF MEDICINE, UNIVERSITY OF CAPE TOWN,
AND
A. R. MCLACHLAN, F.R.C.S. ENG.,
LECTURER IN CLINICAL SURGERY AT THE UNIVERSITY

Kaznelson[1] first published a case of splenectomy in purpura hæmorrhagica in 1916, but it was not until Brill and Rosenthal's paper in 1923 that general attention was called to the operation. Since then many cases have been published. In the great majority of cases of typical purpura hæmorrhagica the results have been very satisfactory. In the more atypical cases the results have been frequently disappointing.

Clinical Records.

The following two cases have been under our charge.

CASE 1.—J. S., female aged 10. Up to the beginning of December, 1923, the child had been perfectly well. She then developed purpuric spots over the thighs and legs. A fortnight later she began to suffer from epistaxis. On Dec. 23rd she was seen by Dr. S. E. Kark. She was running a temperature up to 103° F. There were numerous subcutaneous ecchymoses and petechiæ over the body. Both elbow-joints were painful, fusiform in shape, and the skin over them discoloured. A blood film examined at the Government Pathological Laboratory, Cape Town, reported a secondary anæmia with a normal differential leucocyte count. She was treated with injections of thrombin and calcium lactate by mouth without effect. From Dec. 25th she had an intravenous injection of afenil every second day for six injections. During this period the temperature became normal and the bleeding stopped, but a week later all the symptoms recurred. She then had a whole blood transfusion. Following the transfusion she improved, but three days later she had a very severe attack of epistaxis. The posterior nares were plugged and the septum cauterised. A few days later a profuse hæmaturia occurred. On March 10th she was seen by one of us (A. W. F.) in consultation with Dr. L. F. McDowell. The child was extremely ill, profoundly anæmic, and was running an irregular temperature up to 103°. There were numerous purpuric spots all over the body, epistaxis was continuing in spite of plugging of the nose. There was constant oozing of the gums and an intermittent hæmaturia. The spleen was just palpable. A blood-clot which had stood from the night before showed no attempt at retraction. The bleeding time was much prolonged. A blood film showed intense anæmia with anisocytosis and polychromatophilia, and an occasional normoblast. Blood platelets were much reduced, only an occasional isolated large platelet being found. There were no abnormal white cells.

As bleeding was still continuing freely and the condition of the child seemed critical a blood transfusion followed by splenectomy was advised. On March 11th, 1924, Dr. McLachlan removed the spleen, preceded by a transfusion of 300 c.cm. of citrated blood. For 24 hours the condition of the child was critical, but no further bleeding occurred after the operation. A moderate pyrexia continued for a week, but the temperature then became and remained normal and the child rapidly became convalescent.

Macroscopic description of the spleen.—Weight, 272 g.; measurement 14 × 9 × 3 cm. The surface was smooth and somewhat soft in consistence. Stroma had a reddish appearance, the Malpighian bodies standing out as white dots.

Microscopic description of the spleen (Prof. B. F. Ryrie): The capsule is of normal thickness and the coarse stroma of the organ is not increased. Arteries and arterioles are normal in appearance. The Malpighian bodies are of normal frequency but stand out very prominently on account of their structure. Each shows a relatively large pale centre in which the cells are large and show faintly staining cytoplasm. The nuclei of these cells vary, are large, irregular in shape, and show much karyolysis and karyorrhexis. Frequently these central cells tend to diminish in numbers, arterioles and capillaries no blood whatever during systole. Their intimate supply of oxygen and food is contingent upon diastole and is limited entirely to that part of the cardiac cycle. The effect of systole is to wring out from the organ its waste products and to prepare it for its next diastolic supply.

The cardiac circulation is thus the antithesis of the systemic; it is inverted in point of time. The term "cardiac circulation" should be restricted, functionally speaking, to this diastolic supply of oxygen and food and systolic elimination of waste products. It is in this sense that it is used hereafter.

Factors Influencing the Cardiac Circulation

The systolic ebb in the cardiac circulation, during which blood leaves the heart, is produced by the forces of muscular contraction. The resistance opposed to this in the cardio-venous system is probably so small as to be of no material consequence, even to a weakly beating heart. It is the diastolic flow to the muscle-fibres that is dependent upon certain definite circulatory factors. Chief among these are the length of diastole, the intra-aortic diastolic pressure, and the lumen of the cardiac arteries. The intrathoracic negative pressure may act as a minor influence during inspiration.

The Length of Diastole.—The length of ventricular systole is fixed within variable limits, measuring it by the corresponding electrical complex, at about 0.43 of a second. It follows, therefore, that the length of diastole is in inverse ratio to the heart-rate. The slower the rate the more likely is the maximum supply of food and oxygen to reach every muscle-fibre during each cycle. Bradycardia, apart from the question of rest, should theoretically, therefore, be actively sought in the therapeutics of cardiac disease. Tachycardia on the contrary is likely to interfere, by diastolic shortening, with the blood-supply to the heart muscle. There is probably a critical rate above which starvation and anoxæmia of the muscle begins.

Apart from digitalis, the slowing action of which is mainly that of increasing heart-block in auricular fibrillation, there is no drug in clinical use actively capable of slowing heart-rate. Such an agency would be of great therapeutic value. In auricular fibrillation the irregular ventricular rapidity must result in a considerable variation in the cardiac blood-supply, for many of the auricular impulses reach the ventricle nearly empty of blood and thus incapable of raising the aortic valves and of producing a diastolic tension at all. The irregularity, apart from the inadequacy, of food-supply may be in some degree deleterious.

The diastolic flow of blood to the heart, apart from the length of diastole, is affected as regards its sufficiency by the amount of muscle to be supplied. Where great and progressive hypertrophy occurs, seeing that diastolic pressure remains fairly constant, there may come a point where even at a normal rate the blood-supply to the muscle becomes inadequate. Before this point is reached there will have been a gradual diminution in the heart-rate above which the diastolic flow is insufficient. More briefly, tachycardia becomes uneconomic to a greatly hypertrophied heart at progressively lower rates and in proportion to the degree of hypertrophy.

It is not without significance that pathological tachycardia as a rule accompanies a lowered systolic and diastolic blood pressure and that the largest hearts are to be found in aortic regurgitation where the diastolic pressure is also low. The tachycardia of a failing heart may be as much a factor in further failure as excessive hypertrophy may be in a heavily burdened organ. The coronary arteries as a rule enlarge to some extent with the enlarging heart, but not infrequently their lumen shares in the disease, syphilis or arterio-sclerosis, to which indirectly the enlargement is due.

The Intra-aortic Diastolic Pressure

By the diastolic pressure is here meant the whole of that period of intra-aortic tension that begins with the closure of the aortic valves. This intra-aortic diastolic tension is the chief factor determining the blood-supply to the heart muscle. The pressure must not only be of a certain degree, it requires to be exerted for a certain length of time to produce an adequate coronary flow. It is dependent upon five main factors: competence of the aortic valve, systolic output per beat, elasticity of the aortic wall, continuance of tone in the peripheral arteries, arterioles, and perhaps capillaries, and the systolic blood pressure. Inadequacy of any one of these five will influence either the height or the duration of the diastolic tension.

Incompetence of the aortic valve produces a lowering of the pressure at the beginning of diastole and a more rapid fall of pressure after it. Each of these changes becomes progressively more marked with the advance of the lesion, and each of them has a direct effect upon the diastolic flow of blood to the heart muscle-fibres. This is probably the chief reason for the fact that aortic regurgitation has a more serious prognostic significance than any other valvular lesion. Moreover, the various factors concerned interact to their mutual increase; the diastolic flow of blood is delivered at a lower pressure and for a shorter period to a larger mass of diseased muscle, very often through narrowed and rigid vessels.

The elasticity of the aortic wall is its main function in health. The organ is a conserver of power no less than of blood, and by its elastic recoil upon the contained mass it completes the systemic work begun by systole and accomplishes the transference to the heart muscle of oxygen and food. As the lesser vessels branch from the main trunk and become a network of finer and still finer twigs, the elastic tissue is replaced by muscle-fibres that sustain the hydraulic load at the desired pressure. There is thus no hard-and-fast line to be drawn between the two functions, elastic and muscular, in respect of their effect upon the diastolic blood-supply to the heart; inadequacy of either will provoke changes in both systolic and diastolic pressure. Nor is it possible in the human subject to prove the effects upon the coronary flow of the loss of elastic aortic recoil due to syphilitic aortitis, or of severe atheroma, or of the more diffuse forms of arterio-sclerosis. It is hardly likely that the effect in either case is entirely negligible. Arguing upon first principles it would seem that the aortic rigidity would impair and that the peripheral arterio-sclerosis, by raising the diastolic tension, might actually increase the cardiac circulation and, therefore, efficiency. Incidentally, the effect of a hot Nauheim bath is to slow the rate and to raise the peripheral blood pressure, both of which measures are to the advantage of the circulation through the heart muscle.

The systolic, and to a lesser extent the diastolic, blood pressure often falls with a pathological increase of the heart-rate, which in its turn frequently varies with the cardiac efficiency. Tachycardia is the first confession of a failing heart. To recover from failure and from the cellular poisons causing it, requires the oxygen, food, and rest which are to some extent denied by the increased rate, if this increase is above a certain point. The vicious circle set up can best be broken by a reduction in rate. The effect of coronary disease upon the cardiac blood-supply needs no elaboration. It should be remembered that the flow through the cardiac muscle does not begin until closure of the aortic valves when the pressure is lower than that of systole, that it continues with a falling pressure, and that therefore any diminution of the lumen will have a greater effect than in the case of a similarly diseased systemic artery.

Conclusions

The cardiac circulation is an inversion as regards rhythm of the systemic, as stated first by Thebesius in 1709. It is directly dependent upon the height and duration of the intra-aortic pressure during diastole. Any change in the latter is immediately reflected in the cardiac circulation. Aortic regurgitation starves the muscle of blood. The cardiac circulation may whether the case represented an acute myelogenous leukæmia with purpuric features or an essential thrombopenia with a marked stimulation myelocytosis

Following the operation in the present case there was temporarily a very notable improvement although towards the end the patient did show a small number of petechial spots and there was a certain amount of oozing from the gums, there was no more serious bleeding. The bleeding time was for a few weeks definitely shortened but later again became more prolonged Platelets did not appear to increase and in spite of the absence of hæmorrhage the red blood cells failed to increase.

The practical lesson seems to be that in typical cases of essential thrombopenia even in the presence of extreme anæmia one can recommend splenectomy with considerable confidence · in atypical cases the outlook is much more doubtful

References.—1 Kaznelson Wien Klin Woch. 1916, xxix, 1451 2 Larrabee Amer Jour Med. Sc 1925 642 381 3 Rushmore Amer Jour Obst, 1925 553 abstracted Med Rev December 1925 4 Nagy Zeitsch f Klin Med, 1925, 102 254 5 Lucas and Fleischner Abt Pediatrics, vol. iv, 538 6 Farley Amer Jour Med Sc, 1925, 640, 10

A CASE OF
AMŒBIC DYSENTERY WITH LIVER ABSCESS
CONTRACTED IN ENGLAND

BY ALAN S SIMPSON, M R C S ENG.,
HOUSE SURGEON, KING S COLLEGE HOSPITAL.

IN THE LANCET of Jan 30th, 1926 a case of amœbic dysentery contracted in England was reported. The following case may therefore be of further interest, in that the patient who contracted amœbic dysentery with a subsequent liver abscess, has never been outside this country

H H aged 53 was admitted to King's College Hospital in December 1925, complaining of severe diarrhœa with much mucus and occasional traces of blood The onset was sudden three to four weeks before he came to hospital He said he had frequent calls to stool averaging eight or nine in the 24 hours

On admission the patient had a temperature of 103° F, pulse 96 he was very weak a tumour was palpable in the right lumbar region ill-defined tender and its relationship to the liver difficult to make out.

The blood count was red blood corpuscles 5 370 000 leucocytes 8300 · hæmoglobin 55 per cent. Differential count normal Wassermann reaction negative, urine normal

The stools were examined and the vegetative form of *Entamœba histolytica* was found in large numbers and some precystic forms

Laparotomy was performed and the tumour was found to be an abscess in the substance of the right hepatic lobe on the anterior aspect near the lower border It was about the size of an orange and contained yellowish pus which proved sterile on culture no amœbæ or cysts were found in this pus or in the subsequent discharges from the wound

Following the operation the patient was given a course of emetine bismuth iodide gr iii daily for 12 days, this did not cause any vomiting but slight diarrhœa occurred for the first three or four days

The patient was discharged from hospital in good health one month following his operation having put on weight.

I wish to thank Mr T Everidge for kindly permitting me to publish this case

---

MESSRS J B Lippincott Company announce the forthcoming appearance of a twenty-first edition of the United States Dispensatory and a seventh revised edition of Remington's Practice of Pharmacy The former is an authoritative encyclopædia of 2000 pages or more on pharmacy, chemistry botany and therapeutics and contains over 60 000 indexed subjects with tables and formulæ given both in apothecaries and metric scales. The latter is edited by Profs E F Cook and C H Wall of the Philadelphia College of Pharmacy and Science, with the aid of 63 collaborators and is intended to be a complete guide for the professional or commercial pharmacist.

BRITISH MEDICAL ASSOCIATION.
ANNUAL MEETING AT NOTTINGHAM

(*Continued from p 387.*)

SECTION OF PUBLIC HEALTH.
WEDNESDAY, JULY 21ST.

AT the first session of this Section, Dr P. BOOBBYER presiding, a discussion on

Poor-law Reform and Public Health

was introduced by Dr. T. MIDDLETON MARTIN (M O.H, Gloucestershire), who reviewed the history of the Poor-law and showed how the percentage of paupers had decreased from 5 3 in 1851 to 1 75 in 1921 and had then risen to an average of 3 7 for the four subsequent years He then indicated how social legislation had invaded the province of the Poor-law during the last 30 years The term "medical relief" first appeared in an Order of 1842 and indoor medical relief was administered on the deterrent principle up to 1867 when curative treatment became the dominant feature. In the report of the Royal Commission of 1905 the hope was expressed "that ultimately it may be possible to dispense altogether with the service of the district medical officer and that his duties will be shared among medical men practising in the district." Dr Martin submitted tabular statements showing the large number of health agencies which catered for a population of over 380.000 in Gloucestershire, and how the 8500 Poor-law persons in that population were dealt with Of the 212 practising doctors, 175 were insurance practitioners and 75 were Poor-law medical officers, and it would not therefore involve a very great change if the Poor-law patients were distributed like the insured persons among all practitioners willing to accept them, thus removing the stigma of the Poor-law so far as medical assistance was concerned A higher capitation payment would be reasonable but if the sum at present paid for these services to the Poor-law district medical officers were pooled a capitation rate double that of the Insurance Act would be available

Turning from domiciliary to in-patient treatment, Dr. Martin showed that of about 1900 hospital beds available for Gloucestershire s population about one-third were under the Poor-law. Of the latter accommodation about half was good and the remainder would require to be modernised. Additional maternity accommodation was required, especially in view of housing conditions In Gloucestershire a consultant and nursing service could readily be made available for the Poor-law patients and dental treatment in out-of-the-way districts could be obtained through peripatetic dentists

The services for the sick poor," as outlined by Dr Martin would include.

1 Domiciliary attendance by medical practitioners as far as possible on the lines of the present insurance medical practice, which tends towards a preventive health service.

2 In-patient treatment in hospitals (at present Poor-law infirmaries) and in additional accommodation (to replace unsatisfactory infirmaries) at existing or new cottage hospitals.

3 Consultant services—for example ophthalmic treatment.

4 Nursing assistance

5 Dental treatment as fully as practicable

6 Complete arrangements under the Scheme for the Extension of Medical Services whereby the sick poor may have immediate access to the particular form or place of treatment most appropriate to his case

The problem of the care of the necessitous section of the population has Dr Martin concluded been one of gradual evolution the next stage would naturally be to provide care and treatment of the sick amongst them on the lines recently developed for another large section of the community, thus avoiding unfortunate class distinction

Dr JAMES FENTON (M O H Kensington) discussed the problem in London and showed how efficiency and progress were retarded by the division of health duties amongst five executive authorities—viz, county council, borough council Poor-law authority, and the fine supporting stroma becomes correspondingly prominent These centres, although prominent, are never active and show no mitosis Relative to these centres the lymphoid tissue is deficient There is much blood in the splenic sinuses The lining endothelial cells are not prominent The splenic pulp is less cellular than normal and contains fewer lymphocytes Eosinophils are relatively frequent There is no demonstrable deposit of iron

We are indebted to Dr. Kark, under whose care the child was in the earlier stages of her illness, for the notes of her condition at that time

She was seen by one of us (A R McL) in February, 1926 There had been no further bleeding, and she was said and appeared to be in perfect health Unfortunately the parent would not allow any blood examination

CASE 2 —Mrs M , aged 28 Admitted on July 9th, 1925, to the New Somerset Hospital on account of uncontrollable epistaxis without local cause

Previous history Patient stated that she had been healthy, but admitted on questioning that for years she had bruised readily Menstruation had been normal Tonsils removed 15 years ago on account of repeated sore-throats, but without making much difference to the frequency of the attacks Diphtheria 18 months before admission One child, aged 4, born without difficulty Says she had a three months miscarriage in October, 1924, without excessive loss

Family history No members of the family had suffered from bleeding

History of present illness In November, 1924, patient began to suffer from repeated epistaxis Shortly after this she noticed the presence of small purpuric spots all over the body and limbs, and the appearance of large bruises without any known cause The teeth also bled easily She became extremely pale, breathless, and easily tired In February, 1925, she became pregnant The bleedings, particularly the epistaxis, continued until admission, and she became more and more anæmic

On admission patient was fat and flabby, mucous membranes extremely pale There were a moderate number of petechiæ and ecchymoses over the body and limbs There was frequent oozing from the gums and repeated epistaxis occurred, which was not efficiently controlled by packing Otherwise no bleeding from the mucous membranes The spleen was not palpable The uterus extended almost to the umbilicus The fundi oculi showed œdema and blurring of the discs and several hæmorrhages in each The circulatory system showed a moderate sinus tachycardia, and a systolic murmur at all the orifices The urine at times showed a trace of albumin, but functional renal tests were normal

Blood On admission Hb 22 per cent , red cells, 800,000 , white, 5000 , polymorphonuclear, 30 per cent , lymphocytes, 68 per cent , transitional, 1 per cent , hyaline, 1 per cent There was considerable anisocytosis with the presence of numerous megalocytes Blood platelets were extraordinarily scanty, and in a differential count none might be seen at all When seen they were isolated and generally large Bleeding time was much prolonged—from 11 to 15 minutes—coagulation time rather diminished Blood-clot after 12 hours almost completely non-retractile Van der Bergh test negative

After admission she continued to have repeated epistaxis, oozing from the gums, and small hæmorrhages into the skin The blood remained much the same The differential leucocyte count varied slightly but there was always a distinct relative lymphocytosis

On August 10th, 1925, Dr McLachlan removed the spleen preceded by a blood transfusion The operation was difficult, as the moment the anæsthetic was started profuse epistaxis occurred which could not be adequately controlled The stomach was dilated, the uterus extended to the umbilicus, and the spleen could not be delivered and had to be tied in the depths The patient was removed from the table in a very bad condition Following the operation, however, the patient had an astonishingly easy convalescence All bleeding stopped, and apart from a very slight epistaxis ten days after the operation, the patient had no further serious hæmorrhage

Two days after the operation the blood showed the presence of numerous nucleated red cells, but there was no apparent increase in platelets The bleeding time was reduced to about four minutes Ten days after the operation a second blood transfusion was given This was also followed by the transient appearance of nucleated red cells in the blood For six weeks the patient continued to improve, there was no further bleeding, the pregnancy was uninterrupted and the patient felt so well that she was very anxious to get up

In spite of the absence of bleeding and the clinical improvement the blood did not show corresponding improvement, and the red cells never rose above 1 000,000 There was a slight evening rise of temperature From the middle of September there was again slight oozing from the gums and a few petechiæ appeared on the skin There was, however, no serious hæmorrhage On Oct 1st the red cells were 765,000 and the white cells 6500, with a sudden increase in the relative lymphocytosis to 76 per cent. General condition certainly not so good On Oct 5th spontaneous labour set in and the patient was easily delivered of a still-born child with very little loss of blood. Four hours after delivery, however, she suddenly died of cardiac syncope No autopsy was permitted

Spleen Prof Ryrie reported "There is no change in the connective tissue trabeculæ The smaller arterioles show hyaline degeneration The larger vessels are not altered The Malpighian bodies are smaller than normal and ill-defined at their edges Although the germ centres of lymphoid tissue are prominent this is not due to excessively active lymphoid tissue, but to an increased content of large cells of the supporting stroma There are remarkably few red blood cells in the pulp Polymorphs, large mononuclear cells, and plasma cells are present along with rather more eosinophil leucocytes than usually seen The endothelial cells of the sinuses are prominent largely due to a deficiency of other cells There is no excess of iron pigment and no evidence of excessive phagocytosis "

Discussion

Case 1 is a typical example of essential thrombopenia The bleeding at once ceased after splenectomy, and the patient has remained free from symptoms for over two years

Case 2 is more difficult It is generally admitted that border-line cases between aplastic anæmia, purpura hæmorrhagica, and acute myelogenous leukæmia occur, in which at present at any rate it may be impossible to make a differential diagnosis Also some hold that an essential thrombopenia may terminate in a secondary aplastic anæmia In view of the severe anæmias which may develop in pregnancy, it is possible that the pregnancy may have influenced the blood condition An aplastic type of anæmia is rare in pregnancy though it has been described by Larrabee [2]

Purpuric eruptions in pregnancy are rare but have not infrequently been described Rushmore [3] collected 47 cases but they are not all of the same nature and of very different severity Out of 44 cases there were 26 maternal deaths

The occurrence of pregnancy during a remission in chronic purpura hæmorrhagica has been described several times, and labour has occurred without undue bleeding Kaznelson's first case of splenectomy for purpura hæmorrhagica was a woman who had been purpuric since early youth Four years before operation, in a remission, she had given birth to a child without difficulty Nagy [4] reports a similar case without splenectomy In both these cases, however, the pregnancy occurred during a remission of the purpuric symptoms With regard to the present case there is no doubt that the purpuric symptoms appeared several months before the onset of the pregnancy The absence of any symptoms of the anæmia before the onset of the hæmorrhages, the notable diminution of the platelets, the prolonged bleeding time, the normal coagulation time, the non-retractile clot are in favour of a diagnosis of primary essential thrombopenia Against the diagnosis of a primary essential thrombopenia are the relative lymphocytosis and the somewhat raised colour index

Lucas and Fleischner [5] report a case of splenectomy in a child of 3½ with purpuric symptoms in which the blood showed a high colour index, a relative lymphocytosis with in addition a considerable number of myelocytes Splenectomy was not followed by any improvement and at a partial autopsy almost complete aplasia of the bone-marrow was found so that the authors were unable to say that the condition was a true aplastic anæmia or a terminal aplasia in the course of a leukæmia Farley [6] reports a case of a girl aged 18 with all the findings of an essential thrombopenia except that myelocytes were unusually prominent Splenectomy was performed with distinct temporary improvement which persisted only a few weeks After autopsy Farley was unable to decide evidence The proportion of protein, fat, and carbohydrate in an adult s diet could be varied considerably without producing signs of ill-health, and the same was being increasingly recognised in the case of infants, providing the diet was adequate in certain other qualitative respects The amount of vitamins necessary to maintain good health in animals varied with the circumstances Thus Mellanby had shown that the vitamin A must be increased if the cereals were increased, and Plimmer had shown that vitamin B must be increased if the total energy value of the diet was raised Again, rickets could be produced in dogs receiving butter and oatmeal and prevented by the addition of extra calcium , and ultra-violet rays may compensate for the absence of vitamin D On the basis of this work, rickets might develop in children under several sets of conditions First, from deficiency of the antirachitic vitamin, in an otherwise well-balanced diet—e g , a breast-fed infant of a mother whose stores of vitamin are low Secondly, from deficiency of calcium in a diet low in antirachitic vitamin—e g , a child receiving little milk Thirdly, from excess of cereal, especially oatmeal, unless the excess of cereal is balanced by an increase of vitamin D Fourthly, from absence of solar irradiation combined with relative deficiency of vitamin D—e g , children brought up in smoky industrial areas

Dr Cowell went on to discuss the relative advantages of artificial sunlight clinics and cod-liver oil Irradiation only compensated for the lack of vitamin D, although it might temporarily mobilise existing stores of vitamin A in the body Although irradiation alone might cure rickets, cod-liver oil by supplying both vitamins A and D was the more effective method Irradiation impressed the mothers as a spectacular proceeding Cod-liver oil was an old-fashioned remedy, often given irregularly, and might be disliked by the children if not in the form of a palatable emulsion Some very few cases of renal rickets did not yield either to irradiation or cod-liver oil, and some cases responded only to subcutaneous injections of concentrated preparations of the oil These rare cases did not affect the main conclusions

Turning from rickets to malnutrition or marasmus in infants, Dr Cowell described the remarkable results which were being obtained in the Royal Infirmary, Sheffield, by the provision of a vitamin-rich diet for such infants—results which justified the contention that many cases of marasmus were due to vitamin deficiency No humanising or modification of the milk was practised beyond simple dilution when necessary , but the diet was enriched by the addition of cod-liver oil emulsion marmite, and orange juice, in order to make sure of adequate supplies of vitamins A, B, C, and D respectively The vast majority of these babies improved quite rapidly Good results were being claimed for the artificial light treatment of infants at some infant welfare centres He had occasionally met with marasmic cases in a stationary condition which responded to ultra-violet irradiation, and one or two where the irradiation of the milk started the improvement He could not explain these rare cases, but they did not affect the main argument that most of such infants responded to the vitamin-rich diet alone

Dr Cowell went on to show the prolonged effect on the young of good feeding of the pregnant and lactating mother The diet of the hen affected the vitamin content of the egg and the diets of cows and women had a similar effect on the milk In bottle-fed infants and all young children the prevention of rickets could be ensured by giving cod-liver oil Even infants in the first few weeks of life tolerated the oil in almost all cases The dosage should be ½ drachm in the day at birth gradually increased to 2 drachms and not exceeding that amount at age 2–3 years After weaning, the child s diet should include milk (the only considerable source of calcium in common foodstuffs) and other vitamin-rich foods Such simple dietetic measures would not only prevent rickets and diminish the amount of marasmus and malnutrition They would, as Mrs Mellanby had shown, produce teeth which were better formed and less liable to decay Lastly, there was much evidence that the resistance of the body would, by these means, be raised against both respiratory and alimentary infections Rickety children were peculiarly liable to catarrhs, bronchitis, and pneumonia Puppies getting cod-liver oil never had pneumonia The routine administration of cod-liver oil had apparently largely reduced the incidence of diarrhœa in institutions, such as homes for illegitimate babies

It would appear possible, Dr Cowell concluded, at the present moment practically to eliminate rickets, to improve enormously the condition of the teeth of our people, to lessen the infant mortality from malnutrition, diarrhœa, and respiratory infections, and in general to raise the standard of physique and health

Dr **Helen M M Mackay** (London) spoke from the clinician's point of view The chief known specific food deficiencies in this country were deficiencies of iron, the organic antirachitic factor, the antiscorbutic vitamin, and of iodine in certain districts There might be others but their presence among the population was as yet unproven For example, there was not sufficient reason for assuming that constipation and digestive disorders were frequently due to the deficiency of vitamin B Dr Mackay went on to point out the wide distribution of vitamin B and to say that if there were a widespread deficiency she would expect occasional cases of beri-beri to occur Similarly, keratomalacia and pellagra were extremely rare The infant, until it received a mixed diet, was largely dependent for iron on the store in the liver at birth This store was laid down in the later months of pregnancy, so that the premature infant was specially liable to anæmia The iron content of both human and cow's milk was low Minor degrees of anæmia were quite common among full-term infants The prophylaxis of this infantile anæmia required more study The deficiency of the antirachitic factor very commonly showed among children, but it was not established that widespread ill health among adults arose from the cause It was found that 15 per cent of unselected new out-patients, aged 4 to 13 months, at the Queen's Hospital for Children had X ray evidence of rickets during April, and in the northern industrial towns the incidence was much higher Cod-liver oil was the best source of this factor and it was a pity that the public, under medical direction, wasted large sums on proprietary preparations which were relatively poor sources of this vitamin A cod-liver oil emulsion, begun gradually and given three times a day in the bottle (say, 1 drachm of the oil daily) was well tolerated by almost all infants Tetany (a common cause of convulsions between 6 and 24 months of age) and respiratory infections were also caused by the deficiency of this factor They had observed a much smaller incidence of respiratory infections (including otorrhœa) among the infants at the Vienna clinic who were having cod-liver oil If all bottle-fed and all breast-fed infants who were little out of doors had cod-liver oil during the winter rickets would be practically abolished infant respiratory troubles and convulsions would be lessened, and the amount of dental caries would be decreased Scurvy was not common now in London The contrast with Vienna was very striking and she attributed this to the widespread use of orange juice in London Tomato juice needed popularising as a substitute when oranges were dear (instead of the very much less effective grape juice) Another common deficiency was water The benefits of a liberal supply of water were very striking in diarrhœa and high pyrexia for instance, with pneumonia The public were afraid of water in such conditions and needed instruction

Sir **Percy Bassett-Smith** (London) spoke from the tropical point of view He discussed the various forms of beri beri and stated that in tropical climates deficiency diseases mostly centred round the

Metropolitan Asylums Board, and the Insurance Committee The underlying principle of the London Public Health Act of 1891 was executive borough councils and an almost exclusively supervisory county council, but that principle was departed from when the county council was made the educational executive authority in 1907. After referring to the provisional proposals of the Minister of Health for Poor-law reform, Dr Fenton said the principle of having the individual under the supervision of one single authority throughout the course of his life would be generally accepted, but London was too big for a single authority to be charged with all executive health functions The Poor-law institutions had 46,800 beds and the M A B. institutions 23,000, while the total beds in the London voluntary hospitals only numbered 13,000 If the L C C. had to control the two first-named groups of institutions it would be necessary and desirable to charge the borough councils with the duty of carrying out all local health services of a non-residential character Each borough would thus have transferred to it the school medical service, supervision of midwives, inspection of common lodging-houses, and also the work of the Poor-law guardians (other than that in connexion with residential institutions), and of the Insurance Committee The county council, in addition to being the institution authority, would remain the supervisory and coordinating authority and would become a provincial board of health for London, thus relieving the Minister of Health of much detailed work Thus two authorities working in close cooperation would operate in each area instead of five as at present It is only, Dr. Fenton concluded, by such distribution of functions as that outlined that metropolitan public health administration can become efficient, elastic, and capable of fullest development In this way only can administration be really democratic, enabling the citizens of each borough to have easy access to local representatives and responsible officers in their own areas, for central executive administration over an area so vast as the metropolis must, of necessity, be bureaucratic.

Dr R P GARROW (M O H, Chesterfield), speaking from the point of view of non-county boroughs and urban districts, voiced the strong objection of such districts to being placed under the control of the county councils They also resented the raising of the population limit for county boroughs from 50,000 to 75,000 The control by the county councils would not promote unification and prevent overlapping, but have the opposite effect. Public health was becoming more personal and the local touch must be maintained The alternative was a radical revision of the areas and to make the local authorities of the enlarged areas responsible for all health services in their districts The new areas should have a considerable town as their centre, to which they would look for their main hospital provision and which they would regard as the focus of health administration

Dr ARTHUR L BALY (chief M O, Lambeth Board of Guardians) thought there would be a waste of public funds unless the present Poor-law system were retained and controlled in areas of reasonable size by local authorities He quoted with approval the scheme outlined in the annual report (1924–25) of the New York United Hospital Fund to give the patient "a single source on which he can depend for his health" Such a scheme in London would necessitate the division of London into areas of reasonable size with a single authority for each in control of domiciliary treatment and all institutions, including fever, mental, and all specialised branches of medicine This ideal could be attained most readily by modification of the existing Poor-laws, so as to ensure that they were properly administered The Poor-laws sanctioned the provision of every possible form of medical relief, and the work done depended upon the character of the guardians and their officers If efficient boards of guardians were established, it would be possible to attain the ideal of one authority for each area to the infinite advantage of all concerned, including the ratepayer. They ought avoid, on the one hand, the evils associated a large central medical authority and, on the oth the transference of the guardians' duties to authorities which had not in any way demonstrat their superiority to the existing guardians If it w intended to centralise all the work in London on th county council, a satisfactory solution might b obtained by transferring the supervisory powers the Ministry of Health to the county council, London into areas of convenient size, and p each area under the control of a local committ empowered to carry out its work in its own way A further point made by Dr Baly was the undesirabl tendency to amalgamate medical insurance and assistance Insurance should be on an basis and public assistance not fully paid for entail local disfranchisement

Dr T EUSTACE HILL (M O H, co Durham thought the B M A memorandum had overlook the need for unification and the fact that coun councils had had considerable experience in sanita administration He did not think it would be difficult for the county council to divide Durham into about 13 districts and do the work through a whole-time M O H for each district

Dr D KIRKHOPE (M O H, Tottenham U D) said his district had a population of about 150,000 and referred to the varying sizes of the counties as likely to work against efficiency The Poor-law stigma might be removed by a change of name—e g, the Edmonton Union Infirmary was now the North Middlesex Hospital They must preserve local interest in the administration

Dr STELLA CHURCHILL (L C C) emphasised the enormous overlapping, and doubted the wisdom of transferring the administration of hospitals with 70,000 beds to the county council It would retain local contact if they were under the borough councils

Dr JAMES WHEATLEY (M O H, Shropshire) said unification was absolutely necessary London was quite a separate and special problem

Dr H SCURFIELD instanced the progress made in Hampshire and Essex towards unification by slightly different methods

Prof F E WYNNE (M O H, Sheffield) referred to the harmonious cooperation of council and guardians and described how the two boards in Sheffield had been amalgamated, and the institutions of one of the boards had been taken over for the purposes of the council No one wished to abolish efficient authorities, but many rural district councils were not efficient

Dr H B BRACKENBURY (London) said the differences of opinion were more apparent than real The memorandum of the B M A. had been approved in principle by the representative body since 1918 The Bill would be introduced next session but would not be dealt with till the session after Rural areas required different treatment to populous urban areas The Bill gave county councils power to deal as they liked with the transferred duties They might delegate to the local authority The county council's power of supervision was new He thought large urban districts should be exempted from county supervision, but did not object to the county council's power to act in default

Dr MARTIN, in replying, said the transfer of powers was not really on account of the incompetence of the guardians but because of the great need for unification of the medical services He thought the county councils were the most suitable bodies to administer the transferred powers

THURSDAY, JULY 22ND

Food Deficiency and Preventable Illness

Dr STUART J COWELL (Sheffield), in opening the discussion on this subject at the second session, said it was probable that a great deal more illness was due to defective diets than was at present recognised, but he proposed to confine himself to the discussion of common diseases as to which there was positive

(3) *Diamond-shaped hæmorrhages with pale centres*—Seen more frequently in the anæmias and leukæmias

(4) *Large mottled hæmorrhages*—Usually near the disc, or along the temporal vessels; probably due to a leak from a larger vessel than a capillary, but the source cannot usually be identified

(5) *Pre-retinal or subhyaloid hæmorrhages*—Most frequent in the macular region, may occur in vascular disease, frequently in leukæmia

(6) *The hæmorrhages of infective endocarditis*—Due almost certainly to lodgment of minute infected emboli, and so must be on the heart side of the capillaries Few cases of the disease occur, said Mr Moore, in which retinal hæmorrhages are not present It is more common in this disease than in any other to see the blood extending along the vessels as though it were effused into the perivascular sheath

(7) *Hæmorrhages associated with subarachnoid hæmorrhages*—In fractures, or cerebral hæmorrhages, and in ruptures of aneurysms of the circle of Willis, probably caused by obstruction to the venous flow

(8) "*Cotton-wool patches*"—White patches, probably the result of hæmorrhages, seen in some cases of anæmia, and usually associated with hæmorrhages of other types, may closely simulate early renal retinitis

Absence of hæmorrhages in cases of chlorosis, formerly a common disease, was, Mr Moore said, very interesting when contrasted with their almost invariable presence at some time in the course of fatal cases of leukæmia and pernicious anæmia In arterio-sclerosis retinal hæmorrhages are not directly due to the increased arterial pressure; the pressure in the capillaries is lower than normal probably, and the hæmorrhages may be an expression of the consequent impaired nutrition of the endothelium Hæmorrhages due to obstructed venous outflow may be classified into —

(A) *Cases of general venous engorgement*—(1) General constitutional conditions, such as whooping-cough or vomiting, (2) the hæmorrhages produced apparently by the process of birth, (3) severe compression of the chest.

(B) *Due to a local cause outside the eyeball*—(1) Subarachnoid hæmorrhage, (2) papillœdema, (3) some cases of thrombosis of the cavernous sinus

(C) *Due to a cause within the eyeball*—(1) Obstruction of the central retinal vein or one of its tributaries

In all these groups apparently the back pressure due to the obstruction is the cause of the leakage

It would seem then, Mr Moore concluded, that leakage of blood occurs. (1) from arterioles, from lodgment of infected emboli (as in infective endocarditis), (2) from the capillaries, either from poisoning of the endothelium, as in renal disease, or from impairment of its nutrition, as in the anæmias, (3) from the venules, from mechanical causes, as in a hindered venous outlet from the eye As regards the changes which take place in retinal hæmorrhages, it may be said that all hæmorrhages simply fade away, gradually becoming smaller, and undergoing no other change in colour. The length of time required for their complete disappearance varies enormously Mr Juler has found retinal hæmorrhages in 15 5 per cent of new-born infants, apparently produced by the process of birth These hæmorrhages may disappear in so short a time as four days Large dense hæmorrhages, on the other hand, may take many months for their complete absorption. Hæmorrhages, no matter how large, produce no permanent change in the retina unless the external limiting membrane is lacerated

Dr C O HAWTHORNE (London) pointed out that "undue fragility" of the retinal blood-vessels might possibly account for some cases (e g, Eales's disease): some such condition seemed to be present in hæmophilia, and in those cases where bruising followed on very trivial traumatism such as a friendly grasp on the arm Accepting (1) that retinal hæmorrhages occur without any prejudice to sight, and therefore without the knowledge of the patient; (2) and that they may be the first, and for a comparatively long time the only evidence of serious disease—it seemed logical to argue that no safe diagnostic position can be reached without an ophthalmoscopic examination; and, further that such an examination if negative at first should be made repeatedly as is done usually in observations of pulse or temperature for diagnostic purposes.

Mr. G. H POOLEY (Sheffield) dealt especially with the prognosis of life in cases where retinal hæmorrhages are found. The association of retinal œdema added to the gravity of the prognosis In renal cases the younger the patient the more serious the prognosis as a rule A man of 65, for instance, might live ten years or more after extensive retinal hæmorrhages had occurred Cases with striate hæmorrhages only often lived much longer than was formerly taught

Mr. M L HINE (London) gave a warning against too gloomy a prognosis In one case of extensive hæmorrhage at the end of six months vision was still very poor, but three months later it was 6/6.

Mr. T. HARRISON BUTLER (Coventry) quoted a case of the opposite kind; in a girl referred to him on account of headaches he found one small but definite flame-shaped hæmorrhage She was examined by a physician who found no disease; but she died a fortnight later of uræmia

Mr N BISHOP HARMAN (London) referred to a case of a man of 72 with very numerous flame-shaped hæmorrhages who was known to have had them for at least ten years

Mr A. CHRISTIE REID (Nottingham) said that it was clear that our ideas on the subject of retinal hæmorrhages needed to be revised; a new classification appeared to be imminent

Dr A VERREY (Lausanne), Mr. E J PRIMROSE (Glasgow), Dr P MACDONALD (York), Dr. DAVID WILSON (Torquay), Dr. N. L. G. LEASK (Glasgow), and Dr. HARRIES JONES (Northampton) also took part.

Demonstrations

Mr. T HARRISON BUTLER (Coventry) read a paper on Slit Lamp results by Simplified Methods

Mr. N BISHOP HARMAN (London) described with lantern slides the work at Chorley Wood College (Herts) for girls with little or no sight.

In the afternoon Mr BASIL GRAVES (Liverpool) operated on two cases, demonstrating Wheeler's (New York) method of capsulotomy and iridotomy. Mr POOLEY demonstrated his operation for lacrymal cases A short incision is made over the sac, going right down to the bone; a gouge is introduced and driven through the bone into the nasal cavity by four taps of the hammer so as to procure a free opening; after using a sharp spoon a bunch of ten-day catgut is placed in the opening made and the incision is sutured The whole operation is completed in a few minutes It has been done with good result in a number of cases

Dr G YOUNG introduced a brief discussion on the causation of the steamy appearance of the cornea in cases where the surface is perfectly smooth In a recently enucleated eye the same appearance can be produced at once merely by lateral compression with the fingers; the steaminess disappears immediately when the pressure is removed He suggested that the appearance might be caused by polarisation of light due to the layers of the cornea becoming shifted against each other. The point could, he thought, be elucidated by slit-lamp observations Mr BUTLER and Mr. GRAVES regarded the observation as of extreme interest.

Nagel's Anomaloscope.

Dr ARNOLD VERREY (Lausanne) gave a demonstration of Nagel's anomaloscope for defects of colour vision This is a simple apparatus for matching spectral colours It includes a small spectroscope furnished with a dispersing prism The tube of the collimator turned toward the source of light carries the slit apparatus, composed of one double slit and one single slit. The field of vision is separated into two parts by a horizontal line The upper part is filled (depending on the setting of the slit) either with the spectral green of the thallium line (530 μμ) or with the spectral red of the lithium line (670 μμ), or lastly with a mixture of the two, while the lower inadequate supply of vitamin B, which could be obtained in a concentrated form from rice polishings as "ticque-ticque," or from yeast as marmite The diet which produced beri-beri in the few could hardly fail to have a deep-seated and bad physiological effect on the many People might appear well for a long period on a diet deficient in vitamins, but they would inevitably develop some form of constitutional disease, slowly evolved

Dr **James Wheatley**, speaking from the public health standpoint, showed that wholemeal bread contained seven times as much vitamin B as white bread, when both were made with yeast Education of elected bodies in these food matters was very important as a first step and might lead up to the taxation of undesirable forms of food, such as white flour and refined sugar, facilities for the production of the better foods, and the addition of substances to certain staple articles of universal consumption—e g , iodised table salt Unfortunately, the fat-soluble vitamins were found in the most expensive foods There should be a great extension of the scheme for supplying milk to expectant and nursing mothers and young children. The supply of milk for the rural population should be safeguarded Dairy farmers should supply such milk at a price between the wholesale price and the retail town price. The keeping of goats should be encouraged and facilities for allotments increased Grass feeding of dairy cattle should be encouraged Fat-soluble vitamins might be added to margarine. The proof that food deficiencies were causing enormous damage to health was, to his mind, conclusive The foods mentioned by Dr. Mackay as sources of vitamin B were foods which a great part of our population went short of We must have better food and could not rest content with the ideal of a nation brought up on cod-liver oil, valuable though it was

Dr **Leonard Hill** (London) referred to the activation of cholesterol to form vitamin D. The operation had to be done with great care. He thought cod-liver oil had been well tried and that light treatment would do what cod-liver oil could not.

Dr D. G **Greenfield** (Rushden) spoke as to the great scarcity of milk in rural districts He thought the right kind of food more important than light, and suggested that focal infections and pyorrhœa might be caused by food deficiencies More research was needed

Dr **Scurfield** confirmed from his experience Dr Wheatley's view, in contrast to Dr Mackay's, that there was a real danger of a vitamin-B shortage As regards bread and flour, he thought the first step should be legislation to secure that the purchaser should know what he was buying He would like to see jams and marmalade tested for their vitamin content He imagined the cooking of the fruit would not kill any vitamin B which it contained He also referred to the very conflicting results reported from the light treatment of tuberculosis

Dr B **Spearman** (Zanzibar) said it was a mistake to think primitive savages did not suffer from deficiency diseases Many natives were liable to catarrh and pneumonia and had little resistance to disease There was no rickets on the mainland, but there was in Zanzibar among the Indian women who lived a purdah life Some of the native tribes had very monotonous diets

Dr. E V **Ashcroft** (Manchester) said the rickets in Ancoats came from the dirty houses with slatternly mothers and a teaspoonful of cod-liver oil per day did wonders

Prof **Wynne** did not in the least agree with Dr Hill that cod-liver oil had been well tried After it had been supplied for a patient, it was often taken very irregularly or not at all

Dr. **Cowell**, in replying, said the advocates of better food and the use of cod-liver oil did not neglect light treatment.

SECTION OF OPHTHALMOLOGY

This Section met on two days On the first a joint meeting with the Section of Neurology and Psychological Medicine discussed migraine The report of this discussion appeared in our issue of August 21st, p 384

Thursday, July 22nd

An Operation for Glaucoma

On the second day the Section met at 9 30 A M at the Nottingham Eye Infirmary, where Dr **George Young** (Colchester) demonstrated his operation for glaucoma After reflecting a conjunctival flap (usually below) he makes two separate trephine openings through the sclera at the limbus a few millimetres apart with a 1 mm Elliott trephine These openings are cleared by the removal of such portions of the ciliary body and muscle as prolapse, or as is required to procure a clear opening, allowing aqueous fluid to ooze for a few minutes Massage of the eye is begun immediately after the operation The essential points are the formation of *two* separate small trephine openings *behind* the attachment of the iris to the corneo-scleral junction The anterior chamber is not opened The operation has in his hands given satisfactory results

Significance of Retinal Hæmorrhages

A discussion on this subject was opened by Mr R **Foster Moore** (London), whose paper was read in his absence by Mr A **Christie Reid** (Nottingham) Recent investigations by Dale and Laidlaw, Dale and Richards, and Krogh had, he said, added new interest to the subject, and he put forward the following classification as reasonable (excluding such retinal hæmorrhages as arise from disease localised in the eye) —

(A) *Disorders of metabolism* —(1) Renal disease, (2) diabetes, (3) scurvy

(B) *Diseases of the hæmatopoietic system* —(1) Arterio-sclerosis, (2) severe anæmias (or severe cachexias), (3) leukæmias, (4) infective endocarditis, (5) Vaquez's disease, (6) hæmophilia

(C) *Obstructions to the venous flow* —(1) Thrombosis of the retinal veins, (2) thrombosis of the cavernous sinus, (3) subarachnoid hæmorrhage, (4) papillœdema, (5) during birth, (6) severe compression of the chest

Krogh had shown, said Mr Moore, that the capillaries have outside their endothelial lining a loose meshwork of actively contractile cells (Rouget cells) which are under nervous control By means of these cells the capillaries are capable of extreme contraction or dilatation The transition between arterioles with a complete muscular coat and capillaries is sharp and abrupt On the other hand, the transition between venules and capillaries is more gradual, for the venules have at first, like the capillaries, an outer coat formed of a wide-meshed network of Rouget cells, through the meshes of which free interchange between the blood and tissue fluids can occur as in the capillaries No passage of cells from the blood into the tissue spaces occurs in conditions of health Experiments seem to show that what makes such passage of cells possible from the interior of the capillaries is a poisoning or impaired nutrition of their endothelial cells Certain poisons seem specially to affect the capillary walls, so that they no longer maintain an inviolate barrier against the passage of cells from their lumen In diabetes, or nephritis, such toxins are probably the cause of the hæmorrhages In leukæmias, pernicious anæmia, and cachexias, defective nature of the blood may perhaps act in the same way on the endothelial cells

Passing on to the different types of retinal hæmorrhages Mr Moore enumerated eight types

(1) *Flame-shaped hæmorrhages* —These are the commonest ; they may be very small, seldom very large, are situated in the nerve fibre layer, and are a common type in renal retinitis and arterio sclerosis

(2) *Rosette or blotch hæmorrhages* —Small, situated in the deeper layers, found especially in diabetes, multiple, more or less circular, with an irregularly crenate edge

occupy nearly two-fifths of the whole The articles are readable and interesting, and represent an adequately conservative outlook They are worth the attention of English readers because they reflect the small differences in point of view and practice which one nation does well to learn from another, and so improve the pool of knowledge common to all

UTERINE HÆMORRHAGE

By SAMUEL J. CAMERON, M B Glasg, F R F P and S Glasg Lecturer in Clinical Obstetrics, University of Glasgow, and JOHN HEWITT, M B Glasg, Assistant Obstetric Surgeon to the Glasgow Royal Maternity and Women's Hospital London Edward Arnold and Co 1926 Pp 208 8*s* 6*d*

THIS little volume, written primarily for the general practitioner, deals with the most important single symptom met with either in obstetrics or gynæcology The authors do not claim that it is an exhaustive treatise on uterine hæmorrhage, but rather an endeavour to discuss the subject in a practical way, and thus to help those called upon to treat cases In this aim they have been largely successful The book is arranged in two parts, with an appendix on the treatment of hæmorrhage and shock, which contains a simple account of the technique employed in blood transfusion and the methods used in grouping donors Part I. deals with obstetrical hæmorrhage, including extra-uterine pregnancy. A considerable amount of the subject matter of this section has already appeared in a Glasgow Manual of Obstetrics, which was edited by the senior author, and reviewed in our columns last year Part II treats of gynæcological hæmorrhage both physiological and pathological The relationship of the ductless glands to the menstrual function is discussed, and the experimental work of Blair Bell and Beckwith Whitehouse on menstrual fluid is referred to In the section dealing with carcinoma of the cervix treatment by radium is discussed, and although the authors have treated many cases by this means they think it is wise to maintain for the present a healthy scepticism regarding the ability of radium to cure cancer They restrict its use to inoperable cases where a certain measure of relief may be expected The authors do not advocate radiotherapy in the treatment of fibromyomata, but prefer either myomectomy or hysterectomy if the patient is fit enough to stand these operations For menopausal hæmorrhage, on the other hand, they have, like other observers, found radiotherapy satisfactory, operation being rarely required

The book on the whole is well written, sound, and bears the imprint of a large practical experience of the authors It includes little that can be described as new or original but it contains an excellent résumé of current views and should appeal to the student and general practitioner alike

DIATHERMY

Die Diathermie Fifth edition By Dr KOWARSCHIK, Primararzt des Institutes fur Physikalische Therapie im Kaiser-Jubilaums-Spital der Stadt Wien Vienna and Berlin. Julius Springer 1926 Pp 239 M 15

THE publication of a fifth edition of this work 15 months after the fourth shows the popularity of Dr Kowarschik's "Diathermie" Not much has been added to the present edition A new diathermy machine, by Schulmeister, of Vienna, is described This is fitted with the "open" spark-gap, the type which is most generally used in Germany and Austria An interesting experiment by Ludin is included A temperature-recording device was introduced into the human stomach and electrodes were placed on opposite aspects of the trunk so as to include the organ in the path of the diathermy current The temperature was observed gradually [illegible] and the rise increased as the current was strengthened It is doubtful, however, whether this rise was local and confined to the path of the current The duration of the passage of the current was three and a half hours During this time there must have been convection of heat to other parts of the body by the blood stream and an elevation of the general as well as the local temperature A description is given of some other experiments, also by Ludin, which show the action of diathermy on the intestines in increasing peristaltic movement These experiments are illustrated by graphic records.

The author shows a praiseworthy restraint when he advocates diathermy in therapeutics, and those who read his book will learn the maladies in which the treatment will produce good results in the majority of cases as well as those in which some benefit is only occasionally obtained

TEXT-BOOK OF EXPERIMENTAL PSYCHOLOGY.

Third edition By CHARLES S MYERS, M A., M D, Sc D., F.R S, and F. C BARTLETT, M.A Cambridge The University Press 1925 Pp 121. 7*s*

ADMIRABLE as were the first and second editions of this laboratory handbook this new edition marks a considerable advance both in arrangement and content While the basic exercises dealing with the senses, reaction-time experiments, psycho-physical methods and statistics remain the same, there are considerable additions in the treatment of the higher mental functions and perception. Free association, made familiar to us through the technique of psycho-analysis, is treated scientifically The method here adopted is that of Jung's list of association words rather than the continued association of the Freudian technique A student might be well advised to try the continued method in order to realise for himself the affective elements involved and thus discover in himself the process of constellation formation. A further useful addition is Experiment 3 on the perception and reproduction of forms of growing complexity Such experiments have considerable theoretical interest in the light of the *Gestalt theory*. The section on auditory testing receives much fuller treatment, acuity tests and their formulation are given in detail

In a book of this nature, which is essentially an introduction to the fundamentals of the experimental method in psychology, we might have expected the mental tests to have claimed a little more attention. For full details, of course, the books especially devoted to this subject would in any case have to be consulted, but mental tests form an interesting example of the application of the statistical methods in a simple form Statistical matters are frequently a source of terror to those students of experimental psychology who may have approached this subject via the arts rather than the sciences, and are not conversant with mathematics In view of the recent interest in the measurement of the emotions it would have been interesting to have an experimental exercise describing the psycho-galvanometer and its circuit, an arrangement no more complicated than Hipp's chronometer and its appendages These are the only small criticisms we have to make on a book which is likely to remain one of the best handbooks on the subject

THE LANGUAGE AND THOUGHT OF THE CHILD

By JEAN PIAGET, Professor at the University of Neuchâtel and the Institute J J Rousseau, Geneva London· Kegan Paul and Co, Ltd 1926 Pp 246 10*s* 6*d*

WHILE much attention has been paid to the study of the child from the point of view of mental tests and delinquency comparatively few attempts have been made to trace the growth of the young mind in its effective relationships on the one hand and its logic on the other The psycho-analytic school has approached [illegible]ld mind for the purpose of tracing

Library Medical College 7786

part shows the spectral yellow of sodium (589 $\mu\mu$) This arrangement allows the fixing of Rayleigh's equation—that is, by making a variation in the respective proportions of red and green, and the luminosity of the sodium yellow, the two parts of the field may be made the same Dr. Verrey said that this apparatus enabled us not only to detect colour blindness, but also to make a diagnosis of the kind of defect Artificial colours were not so safe for testing as spectral colours

Mr **BUTLER** thanked Dr Verrey in the name of the Section for his valuable paper, and suggested that at a future meeting of the Section it might be well to devote more time to a discussion on the subject of colour vision

An informal discussion on

Ophthalmic Benefit

was opened by Dr **COURTENAY LORD**, secretary to the B M A Ophthalmic Committee, who pointed out the importance of ophthalmic surgeons doing everything in their power to make the scheme a success In the discussion that followed it was mentioned that many panel practitioners had the impression—which is quite erroneous—that all insured patients are now entitled to such benefit As a matter of fact only a minority of the approved societies have as yet adopted it Some of the largest societies appear to refer to ophthalmic surgeons only cases with which opticians have had some difficulty

Reviews and Notices of Books.

MODERN MEDICINE

Its Theory and Practice Edited by Sir **WILLIAM OSLER**, Bart, M D, F R S Third edition, thoroughly revised Re-edited by **THOMAS MCCRAE**, M D, assisted by **ELMER FUNK**, M D Vol III.: Diseases of Metabolism, Diseases of the Digestive System London Henry Kimpton 1926 Pp 1052 Set of six volumes and index, £12 12*s*

THIS volume of the third edition of "Modern Medicine" is of especial importance, since it incorporates the insulin treatment of diabetes The whole section on metabolism, occupying over 200 pages, is well up to date A long section on the physiology of metabolism, written by Dr Eugene Du Bois, points the way to the correct interpretation of the diseases coming in this category Starting from a survey of basal metabolism, Dr Du Bois proceeds to consider the digestion of carbohydrates, fats, and proteins in the light of recent work, as well as that of alcohol and the minerals Vitamins are also dealt with, and a useful table of vitamin distribution in foodstuffs is given Two other tables deserve mention · one based on over 1000 cases proves that basal metabolism is only disturbed in four or five diseases; the second gives a list of the composition and caloric value of every imaginable article of diet The succeeding article on diabetes mellitus and insipidus is contributed by Dr Thomas Futcher, who, in considering the ætiology of the former disease, makes a wide survey of the factors depending on disturbances of the endocrine glands When writing on insulin, he insists that proper dieting remains the basis of therapy whether insulin be used or not; he distinguishes between diabetic coma and collapse, and describes the treatment of the former An excellent article on gout is contributed by the same author The last chapter in this section, on obesity, written by Dr James Anders, is full of interest

The larger section on digestive diseases is prefaced by a discussion on the whole subject by Dr Charles Stockton, who makes an attempt to give a synthetic picture of the factors pertaining to all digestive processes Next Dr D Riesman and Dr H Mohler contribute a well-illustrated article on the mouth and salivary glands Dr. Chevalier Jackson and Dr Louis Clerf write with authority on the œsophagus, supplying clear radiograms Dr J Friedenwald, discussing the difficult subject of gastric neuroses, has rejected the older classification into motor, sensory, and secretory neuroses, and has substituted vagotonic and sympatheticotonic groups, into which, however, not all the neuroses he mentions seem to fit very well, for instance, bulimia (increased hunger) and acoria (absence of sense of satiety) find themselves on opposite sides of the division Passing on to the sections on organic disease, Dr C Martin and Dr C Sutherland have written on the stomach, and Dr A. Stengel on the intestines In the former section ætiology receives full notice, the frequency of cancer supervening upon peptic ulcer is not thought to be great The X ray appearances of both ulcer and cancer are described at length In the section on intestine, which is full of well-classified information, the subject of constipation is admirably summarised Dr E J Wood writes on sprue, and emphasises the "strawberry" treatment, other forms of treatment mentioned are parathyroid and calcium, blood transfusion, and yeast vaccine Following this is a weighty article on pancreatic diseases by Dr E L Opie, he goes fully into the symptomatology of pancreatic impairment and acute and chronic forms of pancreatic disease Dr Opie states that diabetes mellitus not infrequently occurs with carcinoma of the pancreas, but gives no confirmatory figures of this important assertion Diseases of the liver, gall-bladder, and biliary ducts are fully dealt with in an article by the late Dr A O J Kelly, which Dr Vincent Lyon has revised . especial reference is made to Sir H Rolleston's work on this subject The normal functions of the liver are first enumerated, then follows a full account of liver functional tests, including the van den Bergh test, next comes an article on jaundice, in which the much discussed theories of its pathogenesis are examined and subsequently the involved subject of non-surgical drainage of the biliary tract, a method dating from 1919, is set forth from both diagnostic and therapeutic points of view This summary of modern work, combined with good descriptions of the many diseases involved, combine to make up a section of exceptional interest Diseases of the peritoneum are presented by Sir Humphry Rolleston in a masterly article of 90 pages; in considering acute diffuse peritonitis he gives a prominent place to its bacteriology The various anatomical types of subphrenic abscess are most helpfully classified The volume ends with a concise article on Glénard's disease by Dr Thomas Brown, who gives careful accounts of theories of pathogenesis, especially that of Keith, and stresses prophylaxis

The keynote of this whole volume, consisting as it does of so many and various articles is disordered physiology, this aspect of medicine marks at once the road to future advance and the barrier against ephemeral methods of study It is certain that any reader perusing these pages with a view to advancing his knowledge will at the same time revive in his memory the physiological training which is rapidly becoming what it always promised to be—the ground work of scientific medicine

---

Precis de Pathologie Medicale Vol I Infectious Diseases (Part I) By F **BEZANÇON** and A **PHILIBERT** Paris Masson and Co 1926 With 75 text figures Pp 540 Fr 31

THIS is the first of the seven volumes in Masson's well-known "Précis" series which promises to make up an excellent medium-sized text-book of medicine. three volumes have already appeared This instalment includes the infections due to bacteria and fungi, and the general arrangement is on an ætiological basis Pneumonia is briefly mentioned under pneumococcal infections, but its detailed treatment is relegated to the volume on respiratory diseases This leaves typhoid fever and tuberculosis as the most important sections, and it speaks well for the general reasonable balance of the book that the

THE LANCET.

LONDON SATURDAY, SEPTEMBER 4, 1926

MEDICINE AND POOR-LAW REFORM

IF there are any who remain unconvinced of the need for reform of Poor-law administration the facts contained in the latest annual report of the Ministry of Health[1] should provide them with food for thought Reviewing the experiences of the year ended March 31st last, the report comments on certain obvious inequalities in the standards of relief adopted by different boards of guardians and the apparent laxity of administration exhibited by some of these bodies Possibly the increase in the average weekly number in receipt of relief from 1,113,015, or 287 per 10,000 of the population in 1924–25, to 1,207,302, or 312 per 10,000 in 1925–26, may be sufficiently explained by the present trade depression, but some of the statements made in the report suggest that there may be other causes For instance, in reference to the absence of precautions in the relief of able-bodied persons, the guarded conclusion is reached that "it cannot be regarded as proved that unnecessary expenditure of the ratepayers' money is not being incurred," and (more emphatically) "it is beyond question that in certain unions laxity of administration has led to substantial additions both in the number of recipients of relief and in the burden of cost placed on the ratepayers" Again, in relation to an increase during the year from three to twelve in the number of unions in which the persons relieved exceeded a proportion of 1 in 10 of the population, the following comment is made · "It is difficult to avoid the view that the policy and method of administration adopted by one or more boards of guardians in each of these areas has had a substantial effect upon the numbers relieved in the unions adjacent to their own" There is much more to the same effect, but we have probably quoted enough to show that the position is so unsatisfactory in some areas that even official language cannot disguise the view taken by those who have all the facts before them Our readers are aware that the case of West Ham, which is described in the report, has since been the subject of action by the Ministry

The prolonged consideration and wide publicity which the subject of Poor-law reform has received since the Royal Commission on the Poor-laws reported in 1909, has left the present system with few supporters Even the guardians themselves are not content with things as they are and, in response to the Minister's proposals for reform forwarded to boards of guardians with a covering circular (Circular 658) on Jan 2nd 1926, the Association of Poor-law Unions has not hesitated to make counter-proposals of a fundamental if less drastic character The actions of bodies such as the West Ham Board of Guardians are largely an attempt to force on the country a measure of reform which appears to them to be desirable It is when we come to consider details of method that the greatest diversity of opinion is revealed The essential feature of the Minister's scheme is the transference of practically every function of the Poor-law unions to county and county borough councils But the proposals go further Modern developments of the health services have been more or less haphazard, and indeed the Ministry of Health Act, 1919, was generally regarded as a first step toward a much-needed coördination, both centrally and locally, of the activities of the various bodies responsible for communal health in its various aspects The present system of local government and the inequality of public health districts, both as regards area, population, and rateable value, have been the stumbling-block The forms, too, which extension of medical benefit under the Insurance Acts and alterations of its administration should take have had a bearing on the subject. While the deliberations of the Royal Commission on National Insurance have resulted in some concrete recommendations,[2] such as the early abolition of insurance committees and the absorption of their functions by the appropriate local authorities, it cannot be said that the first report of the Royal Commission on Local Government[3] contains anything which clarifies the local government atmosphere The problem of local government areas is fundamental but fraught with innumerable difficulties both of a sentimental and practical nature, not the least of which are the various vested interests involved

The proposals of the Minister for bringing about the desired coördination of the health services along with the transference of Poor-law and insurance functions to county councils are simple The non-county borough and district councils are to be left in being, but to be placed more strictly under the jurisdiction of the county council Under these conditions some of the newly transferred responsibilities may be delegated to the former, but largely, it would appear, at the option of the latter This can hardly be a permanent solution of the problem of local government It fails to face the need for a radical re-casting of public health areas, although it appears to be sufficiently drastic to call forth vigorous opposition from those affected.[4] The attitude of medical officers of health to the proposals, depending on the type of governing body they serve, is also reflected in a recent discussion held at the Public Health Section of the annual meeting of the British Medical Association in Nottingham, of which a notice is included in this issue (p 495) Plainly the official policy has failed to steer clear of controversy and yet the fundamental difficulty of local government areas remains untouched. There are urban districts like Willesden and the Rhondda which exceed many county boroughs in population and are not inferior in administration There are urban and rural districts too small to carry any responsibility involving the expenditure which the modern health services entail and whose councillors exhibit a narrow parochial outlook There are whole rural counties, particularly in Wales, so small and impoverished that they are scarcely fit to form public health units[5] Although the Royal Commission on Local Government has failed to furnish the Minister with some practical solution of this question, something may be learned from the success of the Scottish local government system in rural districts While, then proposals, such as the transference to county councils of the responsibility for the administration of financial relief, may give rise to some apprehension, we are mainly concerned that the medical services under any its instinctual and emotional development, while the anthropologists have sought to bring out the analogy between primitive mentality and the thought of the child Prof Piaget's book therefore fills a gap in the study of the subject of the mental life of the child Taking groups of children under the age of seven years in ordinary kindergarten surroundings, he made exhaustive reports of their conversations as they played, drew and wrote together, believing themselves to be unobserved He concludes statistically that the speech of a child is in its early stages a passage from echolalia to monologue, and from thence passes to the collective monologue At this stage the language of the child is practically the verbalisation of actions, where words possess a "magic" in that they partake of the nature of the object named

---

[1] Seventh Annual Report of the Ministry of Health, 1925–26 Cmd 2724 H M Stationery Office 3s 6d

[2] Cmd 2596 H M Stationery Office 1926 6s 6d.

[3] Cmd 2506 H M Stationery Office 1926 9s

[4] See for instance Local Government Journal June 10th, 1926.

[5] THE LANCET March 27th 1926, p 669

With contact between one child and another speech begins to be socialised in the form of adapted information, but an adaptation which consists of the clash of a series of affirmations which are bound together by no logical nexus or "because" Each child lives in its own world of verbalised actions, which may or may not correspond with the world of its fellows Language therefore at this level is almost entirely egocentric Not till the age of seven does true reflective thought make its appearance with the appreciation of cause and effect as the law governing ground and consequence Subjective synthesis and schematisation precedes any real appreciation of objective relationships Remarks are made as justifications of immediate acts, and thoughts proceed by the use of immediate analogies, imaginary reasoning, radiation of one schema into another, and by symbolism Thought in other words is syncretic—that is, wholes are understood before the parts are analysed—and understanding of the parts takes place rightly or wrongly only as a function of the general scheme Understanding between children only takes place in so far as there is contact between two identical wholes which the children may happen to share If they wish to express to one another the discovered relationship between two phenomena, they will say that "this goes with that," a dynamic relationship which may carry with it the larval appreciation of causality

A chapter entitled "The Child's Questions" is of interest in that it deals in a scientific way with the parent most amusing and bewildering task of the parent It goes to prove that the child's questions are mainly concerned with human actions, and are strongly affective At first the questions are related to the resistances to desire met with by the child in its observation of things and people These are the "why's" of justification The meaning for everything has two sides, the explicatory and the implicatory functions respectively; the one turns to the outside world, the other to the inner world to analyse the intuitions and their relations This inner analysis runs counter to the phantasies of the child and thus the two functions have to be fused This final discussion of the book is most difficult in that the affective element of the mind is not sufficiently dealt with, for it is the harnessing of affectivity by the reins of logic that marks the transition from egocentricity to the acceptance of the order of external reality

---

FUNCTIONAL NERVOUS DISORDERS

Their Pathology, Diagnosis and Treatment By PAUL BOUSFIELD, M R C S, L R C P London William Heinemann 1926 Pp ix +212 6s

IT is not easy to see for what particular circle of readers this book is written It is too compressed to be of value to the beginner, and the specialist will find nothing here that has not already been written If the object of the book is to convince those who are not adherents of the psycho-analytic school of the therapeutic merits of this school, detailed case proof should have been collected and submitted bare assertion carries little weight at this stage of the subject The opening chapters of the book deal with psychological foundations and are not very satisfactory One is devoted to a vague something called "tension," which is never defined, and is followed by another on the unconscious, which contains no objective proof of the reality of unconscious mental processes When he comes to the classification and treatment of the neuroses the author becomes involved in difficulties He makes a strenuous effort to follow faithfully the official classification of Freud, but it is clear that Dr Bousfield does not find it a helpful classification or even one which can be made to accord with clinical fact While he never fails to repeat that analysis is necessary for each condition it would seem that in actual practice he obtains most of his results from different forms of persuasion In certain conditions he relies on the use of trickery and deception (pp 50, 60, and 91)

There is a useful chapter on certain psycho-physical conditions, such as asthma and the disorders of menstruation In the latter conditions the author shows how much these troubles are due to faulty ideas held in consciousness, ideas whose existence depends on education and on the prevalent opinion that to be menstruating is to be "unwell" The book concludes with a chapter of five pages on insanity in which the remarkable doctrine is laid down that dementia præcox and paranoia are in their early stages amenable to analytic treatment

---

GUY DE MAUPASSANT

By ROBERT HARBOROUGH SHERARD London T Werner Laurie Ltd 1926 Pp 399 21s

THE author qualifies his book on the title-page, describing it as dealing with the life-work and evil fate of its subject, whom he designates "Gentilhomme de Lettres," while he asserts that he has written "*l'humble verite*" This was the sub-title of Maupassant's greatest long novel, and Maupassant justified it by supreme accuracy of observation, and by a personal detachment which is not evident in Mr Sherard's writing He obviously knows very much about Maupassant, and has made up his mind about him, while he has laid under contribution the opinion of Maupassant's contemporaries, personal friends, and especially his valet cook The book is written with unstinted admiration for the great French story teller, and contains some sound criticisms of literature, but the medical interest, which presumably we are invited to notice, is slight The details given of Maupassant's breakdown do not make material for safe medical comment as they are too vague We get a good idea of Maupassant's physical and mental make-up, but no facts which explain successfully how, when and why the disastrous breakdown came

---

MALARIA

Paludisme By E MARCHOUX, Professor à l'Institut Pasteur Nouveau Traité de Médecine et de Thérapeutique No 5 Paris J B Baillière et Fils 1926 Pp 366

THE last few years have witnessed a remarkable activity in the production of monographs on malaria, by no means the least complete or exhaustive is the one under review In an unpretentious volume of moderate compass Prof Marchoux has managed to collect most of the current knowledge on this capacious subject The historical survey with which the monograph opens is especially to be commended, though the comparatively insignificant role assigned to Manson will be deplored by those who know how large a part he played in the earlier investigations on malaria The general account of the morphology and development of the malaria parasite, both in the blood of man and in the invertebrate host is full and accurate, though the coloured figures of these hæmatozoa are rather crude The clinical, therapeutic, and preventive sections of this work compare favourably with any we have seen Prof Marchoux's work is a valuable addition to the series of monographs of which it forms the fifth volume regional adenitis, and slight changes in the central nervous system. Histologically, the brain and cord showed the same peculiarities as the case noted ten years previously. Other cases were now quickly recognised—one in a man of 21 and the rest in girls of 7, 12, 15 and 22 respectively. All these patients except one girl died in the course of an acute attack of encephalo-myelitis complicated by broncho-pneumonia. In the exceptional case the encephalo-myelitis was in process of healing, death being due to pneumonia and septicæmia following severe hæmorrhagic inflammation of the paralysed urinary bladder. The infiltrations in the acute cases resemble in general those of non-purulent inflammations of the central nervous system. The chief histological characteristics are the number and size of zones of extra-adventitial perivascular infiltration in comparison to the development and size of adventitial vascular sleeves: the obvious perivascular distribution of the infiltrations: the conspicuous zones of softening with relatively little cellular infiltration that surround vessels in the white matter: the large extent to which the white matter is involved, although the involvement of grey matter is actually greater; the extensive involvement of both cerebral cortex and spinal cord: and the maximal incidence upon lumbar and upper sacral cord and pons. The close similarity in the type and incidence of the inflammation in all cases is notable, and the authors draw special attention to the peculiar zones of perivascular softening in the white matter. The lesions in the subacute case suggest the healing stage of those described. They have the same general distribution but are smaller and fewer, the foci of intenser acute inflammation having commenced to scar, whilst the less intense, more diffuse infiltrations have apparently undergone complete resolution.

Elaborate efforts have evidently been made to obtain positive proof of the connexion between vaccination and the conditions depicted, or, failing this, to exclude any other possible ætiology. Investigation of the possible path of infection gave negative results; no direct evidence was found, in sections of the brachial plexus, of any extension of inflammation along nerves from the vaccinated areas to the spinal cord. Close examination of the vaccinated areas and regional glands yielded but little information since the histological changes appeared to be essentially similar to those in a control case, a recently vaccinated boy killed in an accident. But though the path of infection cannot be traced, the authors would appear to have ample justification for concluding, in view of the close resemblance between the clinical histories, the uniformity of the pathological findings, and the absence of similar cases independent of vaccination, that vaccination was a definite causal factor and no chance coincidence. Death in six cases occurred between the fourteenth and the eighteenth days after vaccination. In the remaining case consciousness was regained on the eighteenth day but the patient remained drowsy and died on the twenty-ninth day after vaccination. The periods after vaccination at which consciousness was lost, at which alterations in the pupils, rigidity and paralysis of limbs and paralysis of the bladder were observed, at which death occurred or consciousness was regained show close correspondence except in one case where paralysis of the bladder and loss of reflexes were observed as early as the fourth day after vaccination. [illegible] cases independent of vaccination were not observed at the same nor any other time. The authors give cogent reasons against the assumption that the post-vaccinal cases described by them and by workers abroad are merely examples of either poliomyelitis or encephalitis lethargica in which vaccination was an immaterial accident. Histologically, the inflammation in ordinary cases of poliomyelitis differs conspicuously from that following vaccination, whereas encephalitis lethargica differs from post-vaccinal encephalitis in extent of distribution. In Holland eight cases[1] occurred in 1925 during those months when encephalitis lethargica was epidemic, and the suggestion was made that the vaccination may have provoked a latent encephalitis lethargica. Prof. TURNBULL and Prof. MCINTOSH considers this unlikely, and note that if post-vaccinal encephalo-myelitis is caused by the virus of encephalitis lethargica, then the resulting reaction has been so greatly altered by the vaccination as to give a distinct histological picture. The distribution of lesions in 40 cases of encephalitis lethargica examined by them, though extremely variable, is always less extensive than that of the lesions in post-vaccinal encephalo-myelitis, and in no case did they find the zones of softening round the vessels of the white matter which is characteristic of the last-named condition. The fact that the virus of vaccinia is closely allied to, if not identical with, the virus of variola has led them to search the literature for evidence of non-pyogenic inflammations of the brain and spinal cord complicating small-pox, and they have found a considerable number of cases of an apparently specific encephalomyelitis clinically associated with this disease.

The importance of these investigations needs no emphasis. The authors state that they informed the Ministry of Health in December, 1922, of the facts observed—that is, as soon as their tentative interpretation of the findings in the first case were to some extent confirmed by the advent of the second. Doubtless these early observations were the genesis of the committee appointed by the Minister, to whom reports on the histological and experimental investigations here described were sent in January, 1924. It remains for practitioners to be alert to detect and report anything whatever which may seem to bear upon an interesting problem in epidemiology.

◆

MORE ABOUT MILK.

EVERY good woman knows that milk is an incomparable food, and that glasses of hot milk at 11, 3 and 9 are, with patience, all that is necessary to complete many convalescences. Five years ago the sauciness of school-boys, for whom Dr. E. V. MCCOLLUM had secured an extra tot of daily milk, was causing some stir among the school-teachers in Baltimore, and Dr. CORRY MANN has recently noticed the same effect and has confirmed the material advantages of milk for children by the colder arbitrament of the balance and Dr. MAJOR GREENWOOD'S statistics. Of the reasons for these things we still have much to learn. The nutritive value of different proteids urgently needs further elucidation: there is no doubt a good deal of importance that we do not know about dietetic mixtures of proteids, fats, and carbohydrates: no one seems much concerned to discover why milk is as good for useful middle-aged persons as it is for infants who can only just live. Meanwhile our information about the vitamins of milk and their relation to children's diets goes on increasing splendidly. It is now recognised that there are two new scheme should have conditions which will allow of their highest development, in the scientific sense, without abuse of public money and without encroaching on the legitimate interests of private practitioners Reform of the Poor-law ought to afford an opportunity for providing such conditions With a few outstanding exceptions Poor-law guardians have not sought or availed themselves to any extent of medical advice in their deliberations Their hospital administration has been the function of workhouse masters and untrained matrons, with the result that medical and nursing personnel and scientific equipment, which are the main justification for the existence of hospitals, have been neglected Their out-patient provision has been primitive While a striking alteration of attitude to the sick pauper has taken place in the last 25 years, admission to the benefits of the medical services of the Poor-law is still accompanied by a ritual humiliating both to patient and medical officer Thus we have the spectacle of large hospital blocks, ill-arranged from the medical standpoint, standing with many vacant beds, while the voluntary hospital waiting-lists have got completely out of control Transference of the medical functions of the Poor-law to county and county borough councils should bring a change of policy, for the latter bodies are accustomed to receive and to follow medical advice on medical matters The administration of medical benefit, too, by the new local health authorities should pave the way to a measure of uniformity in the domiciliary care of the sick-poor and the insured, while the control of hospitals by these authorities should facilitate extension of the medical services covered by the Insurance Acts Finally, the rapidly developing provision made by education and health authorities for mothers and children and for those suffering from such diseases as tuberculosis and venereal diseases, which have hitherto shown a tendency to diverge from the ordinary run of medical work, should now be brought into line with general medical and hospital practice

---

[1] [illegible]

This brings up again the question of the optimum size of area In his address to medical officers of health at the recent Jubilee Congress of the Royal Sanitary Institute Dr G F BUCHAN entered a plea for the retention of all units with a population of 50 000 or over as autonomous authorities with complete control of local medical services, a proposal which would practically abolish the health activities of county councils The implication is that an area capable of maintaining one whole-time medical officer is big enough for efficiency Few sanitarians will go as far as this However undesirable early specialisation may be, the variety and difficulty of modern public health work make it unavoidable in branches of work such as the diagnosis and management of mental defectives, the care of crippled children, the diagnosis and treatment of ear, nose, throat, and eye defects in children, and the care of pregnant women A high standard in all these directions can hardly be attained by an officer whose time is taken up with administrative and advisory duties From this point of view there is much to be said for the county and county borough as units, provided that it is made easier for the larger urban districts to attain the county borough status and so escape irksome supervision by the county authority. On the other hand, it may be argued that the clinical services are properly the function of part-time specialists In that case there is hardly need for an area with a population of 50 000 to maintain a whole-time medical officer at all Moreover, the administration of services worked by a part-time staff is notoriously difficult and entails special knowledge on the part of the administrator Such officers ought to command salaries on a scale which only the larger authorities can afford, and therefore the case for the county and county borough unit is not weakened. But if the present public health areas are to remain the Ministry of Health might at least take courage to acquire compulsory powers for bringing the medical officers of small district councils definitely on to the county health staff, a policy pursued by persuasive methods for many years Opportunity should be taken to sever as far as possible from the work of health departments the provision of assistance either in money or in kind, such as free milk and meals, or financial aid to the blind. All kinds of assistance would then be coördinated under some committee of the new authority not directly concerned with medical matters

◆

ENCEPHALO-MYELITIS FOLLOWING VACCINATION

IN April last we were asked to give publicity to the formation under the auspices of the Ministry of Health, of a committee to investigate cases of encephalitis directly following vaccination Practitioners observing such cases are requested to communicate with Dr J R HUTCHINSON, the secretary of the committee, and, in the event of a fatal issue, to forward to him material preserved in special media It is of the utmost public importance that these investigations should be prosecuted, since, though this sequel to vaccination appears to be extremely rare, nevertheless during the last 14 years Prof H M TURNBULL and Prof JAMES MCINTOSH, working at the London and Middlesex Hospitals, have been able to collect seven cases of encephalo myelitis in which they assert, " there can be no doubt that vaccination was a definite causal factor " An exhaustive account of these cases in the current number of the *British Journal of Experimental Pathology* includes summaries of clinical histories and necropsies, and descriptions of the pathological changes, gross and minute, in the central nervous system as well as in the vaccinated areas, regional lymphatic glands, and other tissues Beautifully clear drawings illustrate the histological lesions found in cortex, medulla pons, and in various sections of the spinal cord at lower levels The evidence of ætiology derived from clinical and histological manifestations is shown to be strong, and is confirmed by the results of biological experiments made independently by Dr PAUL FILDES and Prof MCINTOSH Inoculations of material from the brain and spinal cord of three of the cases showed the presence of vaccinia virus, no other virus being obtained

The attention of the authors was first drawn to this condition in 1912, when encephalo myelitis was found at necropsy in a lad of 15 who had recently been vaccinated The histological changes in the central nervous system differed in many features from those found in the lesions of the poliomyelitis which was epidemic in the neighbourhood at that time, and in view of the recent demonstration by A MARIE and by C LEVADITI, P HARVIER and S NICOLAU that vaccinia can cause encephalitis in the rabbit, vaccination was considered a possible causal factor Not till ten years later did the opportunity occur to test this possibility in a comparable case In December, 1922, a girl of 9 who came to necropsy with a diagnosis of tuberculous meningitis, had no macroscopic lesions except recent vaccination scabs to keep sandflies alive in captivity and to induce them to feed The optimum temperature for these insects was found to be 28° C Immediately after a full feed of blood the sandfly has a characteristic bloated appearance and becomes sluggish If dissected 24 hours later and the blood examined, the parasite will be found to have increased in size and to contain a prominent vacuole. Seventy-two hours after the initial feed there are seen elongated free-swimming flagellates which show active signs of multiplication At the end of the third day the parasites are generally diffused throughout the midgut, while subsequently, still actively dividing, they migrate towards the anterior portions of the viscus After the fifth day the insect will have laid its eggs, and a second feed of blood appears to be necessary in order to preserve the life of the sandfly and to assure the further development of the parasites within it The parasites now tend to aggregate into rosettes, and enormous masses composed of many individual rosettes are seen The intensity of infection at the extreme anterior end of the midgut is such that the parasites form a plug blocking up most of the lumen The maximum development takes place by the seventh or eighth day, the flagellate forms are actively motile amongst the still undigested blood in the insect's stomach and eventually migrate to the pharynx, the blockage in this case is such as to recall the obstruction of the œsophagus by plague bacilli During this period of multiplication free flagellate forms are being set free from the clot and these wander into the buccal cavity In its mode of development in the sandfly *Herpetomonas donovani* differs materially in one respect only from *H ctenocephali* which occurs as a natural parasitic infection in the dog-flea *Ctenocephalus canis*, in the latter a continuous process of proliferation takes place posteriorly towards the hindgut in contradistinction to the *anterior* development of *H donovani* In this respect *H donovani* is an aberrant species in its behaviour in the insect host It is evident that even in the most heavily infected flies the parasite by the fifth day of its development in the sandfly will have only commenced to invade the pharynx, and until more precise knowledge of the mechanism of the action of the mouth parts of the sandfly in the act of biting has been accumulated, it will be impossible to say whether the parasites present in the pharynx only are capable of being transferred to the wound made by the mouth parts It is probable, however, that the parasite cannot be transferred to its new host until a buccal infection has occurred, and this stage of development is only reached after the second feed of the sandfly, so that transmission from insect to vertebrate host can only occur at the third feed Until much more experimental work has been performed on these lines the authors justifiably reserve their final opinion that the sandfly has been proved to be the true vector of kala-azar but their work has already placed the question upon a new basis

LEAD POISONING FROM FOOD

THE story is told in the *Presse Medicale*[1] of an outbreak of lead poisoning which commenced at Vidin in Bulgaria during April 1923, and only terminated when its origin was detected five months later By this time there had been 314 cases occurring in 153 families with three deaths while several other deaths occurred among those poisoned as a result of other disorders considered to have been brought on or at least accentuated by the lead absorbed, notably one case of cancer of the rectum in a woman aged 28 is attributed to this cause The number of cases ranks the epidemic with others such as have followed upon accidentally mixing of white lead with flour, from drinking plumbo solvent water by the royal household at Versailles in the eighteenth century and from Loch Katrine in Glasgow at the end of the nineteenth century, and the 350 cases at Saint-Georges-sur-Eure in 1865 The signs and symptoms appear to have been quite typical, the blue line was present in 99 per cent. of cases, lead colic was frequent and affections of the nervous system, with 3 cases (1 fatal) of encephalopathy Nephritis and wrist-drop, symptoms of chronic lead poisoning, were not observed The source of the poisoning was found to be adulterated red pepper This pepper, prepared from capsicum fruit is much used in Hungary and Bulgaria, and it is often adulterated with such things as maize or vetch flour, sawdust, iron filings or brick dust; but on this occasion analysis revealed the presence of 20 5 per cent of red lead and 4 1 per cent of sand, while very small amounts of true pepper were found This fraudulent "red pepper" was placed on the market by only one firm, and inhabitants who bought their red pepper elsewhere or made it themselves escaped Most of the cases followed the ingestion of a number of small doses, a teaspoonful of pepper serving two to four persons for several days · but one case followed a single dose of two teaspoonfuls of "pepper," containing about 6 gr of red lead, taken at one meal the case recovered

YAWS IN KENYA

IN the many tropical regions where yaws afflicts humanity its importance lies not so much in any mortality directly caused by it, as in the very large numbers who may be affected and the great amount of physical disability it produces It is often the principal factor to be dealt with when attempting to raise the general standard of health Each yaws patient needs individual treatment, and must be induced to come forward to receive it It may be taken as the rule, however, that the aboriginal of the tropics everywhere has not been attracted to European medicine and sanitation He has preferred his own ancestral ways, and often enough in the past it has made no difference Even Manson, whom Blanchard dubbed "Father of the modern science of tropical medicine," could not win the intelligent Amoy Chinaman's confidence in his powers as physician, except by the dramatic results of his surgery This readiness to accept and seek the European surgeon, while disdaining the European physician, has been the common experience of practitioners in the tropics dealing with indigenous populations Then came arsenobenzol drugs and their use in yaws The resulting rapid cure of the loathsome skin lesions was as dramatic as anything surgery could show The fame of this treatment, wherever tried brought about a change in the mind of the native in favour of European medicine His repellent indifference, apparently so complete and ineradicable, to the horrible condition of his own and his fellow's yaw-stricken bodies is now shown to have been admirably philosophical and truly courteous, for, as soon as a cure is known, because seen, all want to be cured and come for cure But the arsenobenzol drugs are costly, medical officers in the tropics are comparatively rare and in the eyes of administrations, expensive, and there is the difficulty of delegating a skilled procedure such as intravenous injection to partially trained native assistants Happily, bismuth now proves to be as effective a remedy as arsenobenzol it is very much cheaper and its subcutaneous or intramuscular injection can be entrusted safely to native *assistants*

Probably in few parts of the world is there such a mass of material available for the study of yaws as in Tropical Africa Dr J O Shircore recently wrote[1] of 113,000 cases of yaws treated in Tanganyika Territory Dr C J Callanan[2] describes his campaign against yaws in a heavily infected area lying in the shadow of Mount Kenya The natives there believe that yaws has been amongst them from time immemorial, it is unusual to find one who has not had the disease at some period of his life An idea of its prevalence is given by the fact that over 24 000 cases vitamins (at least) which are associated with fats and have to do with growth: A, which promotes growth and prevents xerophthalmia and the keratinisation of mucous membranes; D, which promotes growth and prevents rickets, and for which exposure to ultra-violet light is a tolerable substitute. The differentiation of these two factors has naturally invalidated a good deal of earlier work in which they were confused, and it has complicated the technique of experimental titration; at the same time it seems to afford a basis for the reconciliation of clinical and experimental results which seemed inconsistent. The dissection and measurement of the two factors in cow's milk has lately been achieved[1] in a very interesting way by Dr. HARRIETTE CHICK and Miss M. H. ROSCOE at the Lister Institute, in an elaboration of Miss E. M. LUCE's work on the effects of diet and sunlight on the vitamin content of milk. Without going into the detail of the technique, the whole sums up to the conclusion that the content of the milk in vitamin A depends on the food of the cow, and is not influenced by exposure of the animal to sunlight, while its content in vitamin D is determined mainly by the degree of insolation. Fresh green food given in a dark stall results in milk with a maximum amount of A, which is not increased by turning the animal out to pasture; A is at its minimum on a diet of cereals and roots. But the power of the milk to prevent rickets depends chiefly on whether the cow was indoors or outside, though green food appeared to also have some beneficial effect. The best milk, therefore, is obtained when the cow is pasture-fed in summer, and the virtues of such milk may be preserved by making it into butter and keeping it in cold store. The results are another illustration of how the modern knowledge of accessory food factors explains the empirical methods of common human experience, and of how necessary this knowledge is to correct the ingenuity which devises methods of intensive milk production by stall-fed cattle and such-like "scientific" plans. Much milk of this kind is produced, and in the form of butter is widely dispersed; so it is good news to learn[2] that this year is providing a record catch of fish and cod-liver oil.

---

[1] Le saturnisme alimentaire à Vidin (Bulgarie) en 1923 D Mladenoff Presse Médicale August 11th

[1] THE LANCET July 3rd 1926 p 47

[2] Kenya Medical Journal June 1926

◆

OLEOTHORAX

A RECENT annotation[3] on oil replacement in pleural effusion was written just before the publication[4] of more precise details of its use by the originator, Dr. A. Bernou. His work suggests that the chief value of the operation lies in its use as a safe means of replacing purulent tuberculous effusions whether primary or secondary to pneumothorax, and that it is worthy of trial before the more serious open operations are considered. Dr. Bernou does not write very hopefully of the value of oleothorax in simple acute pyogenic empyemata. One of the advantages claimed for the method is that the oil used for the purpose, known as gomenol, does not produce adhesions. This substance, as might be supposed, does not act directly upon the tubercle bacillus; its effect is rather to produce dilatation of the blood capillaries of the serous membrane and subsequent leucocytosis. Proteolytic and lipolytic action follow, and the action is akin to that which takes place when a modifying fluid is injected into a cold abscess. The rate of absorption varies according to the type of case for which oil replacement is used. In some cases rapid absorption takes place in a few days; in other cases practically no absorption has resulted after many weeks, thereby effectively maintaining the collapse of the lung. From the records so far published the operation appears more useful for the replacement of purulent fluids than for serous effusions.

Annotations.

"Ne quid nimis."

HOSPITAL SATURDAY

TO-DAY is "Hospital Saturday" for the vast agglomeration of population which we call London. It stands by no means alone, for there are half a hundred other Hospital Saturdays in great towns and small. Nor is it the oldest. It dates from 1873, but the example was set to London ten years earlier, appropriately enough, by Walsall, which subsequently became famous as the scene of the devoted hospital labours of Sister Dora. Liverpool appears to have come next, in 1870, and even Maidstone was 12 months ahead of the capital. But it was inevitable that when once London set its hand to the work it should take the lead and keep it. Coming into being in quick succession to the Metropolitan Hospital Sunday Fund, which was founded a few months before it, the new movement, though supplementary rather than competitive, progressed slowly during the first few years. Since everybody does not go to church regularly it was realised that a collection limited to one Sunday in the year left a large proportion of the people untouched. The street collections, which were in favour in the early days, were eventually discontinued in consequence of the steady development of the more systematic and more business-like arrangement of week-to-week collections in workshops and business houses. The Fund suffered a set-back when the National Insurance Act came into being, but that was only temporary, and it now raises more than £100,000 a year. During the 53 years of its existence it has distributed close upon a quarter of a million of money among general, special, and cottage hospitals, dispensaries, convalescent homes, and nursing institutions, and in help to individual cases. This last is by no means the least valuable development of the Fund's work. Tens of thousands of small benefits are granted every year to cases in which timely assistance, of comparatively small individual cost, prevents bad from becoming worse. Surgical appliances, in which we include spectacles, are provided or help given towards their provision for thousands of applicants, and the annual amount of dental assistance grows formidable, though applicants, in the mass, contribute extensively to the cost of this highly important department of surgery. Convalescents are sent to homes, either directly or through the hospitals, entirely or partly at the cost of the Fund which, in many admirable ways, supplements the work of the institutions to which it makes such large cash contributions. Hospital Saturday may, in the main, appeal to a different class from that which is touched by Hospital Sunday, but the appeal is willingly and handsomely met with results which indicate once more the extreme value of system and regularity where money has to be raised for charitable purposes. Thousands of people setting aside no more than a penny a week each, are certain, in the end, to raise far more money than hundreds who are badgered into writing an occasional cheque. The systematic funds, of which there are now very many all over the country, are saving the voluntary hospitals from the perils that, not so long ago, menaced them so gravely.

THE LIFE-CYCLE OF KALA-AZAR

LAST year S. R. Christophers, H. E. Shortt, and P. J. Barraud described what they believed to be the life-cycle of the parasite of kala-azar in the sandfly (*Phlebotomus argentipes*), but their observations were hampered by a shortage of material. In a recent number of the *Indian Journal of Medical Research* (vol. xiii., No. 4, April 19th) these observations have been confirmed and amplified by Shortt, Barraud, and A. C. Craighead. It is no easy task in regard to the lives of those in whom the circumference of the abdomen exceeds that of the chest But even here a hereditary tendency to longevity is the ruling factor, for corpulent descendants of longer-lived parents have a normal expectation of life. Assured persons who are under weight and whose parents died from lung disease under 70 years of age are more liable to die during the age-period 15–28, their excess of mortality being 30 per cent. On the average the risks of the underweight class are not increased : those who have had no lung disease in their family show a diminished mortality Short-livedness is frequently due to arterio-sclerosis or tuberculosis. Mollwos and Florschütz, working with material derived from the Lübeck Life and Gotha Assurance Societies respectively are thought by Dr Ullmann to have established how great a rôle heredity and a feebler constitution play in the ætiology of tuberculosis The tuberculous who have a family history of tuberculosis do not do so well as those whose parents died of other diseases. Florschütz suggests that when this untoward result does not occur it is because special care has been taken of the patient on account of his unsatisfactory family history. Comparison of the family history of tuberculous persons possessing tuberculous heredity with a number of controls clearly brings out their less satisfactory constitution

---

[1] Biochemical Journal, 1926, xx., 632.

[2] Jour. Amer. Med. Assoc., July 24th, p. 255.

[3] THE LANCET, 1926, i., 1157.

[4] Revue de la Tub., June, 1926, p. 345.

THE HERITABILITY OF INTELLIGENCE.

SIR Francis Galton s demonstration of the tendency for exceptional ability to run in families has become classic, and to it the modern eugenic movement owes its rise Other investigators have confirmed his results but their methods have varied Galton accepted as a criterion of exceptional capacity or genius the attainment of some position of eminence in the world In the latest of these investigations that has come to our notice described in a *Bulletin* of the Eugenics Record Office published by the Carnegie Institute of Washington the cases selected for study are children—49 in all—whose exceptional ability is inferred from the very high scores obtained by them on the Stanford-Binet scale of intelligence tests The investigation was carried out by Miss Grace Allen and her results may be briefly summarised Of the fathers of the gifted children 70 per cent occupied positions of responsibility and power many professional and 25 per cent were engaged in semi-intellectual work Among brothers 52 and 44 per cent were the corresponding figures Brothers and sisters tested by the Stanford scale, with only one exception scored over 100, and only one cousin out of 21 tested scored below 120 Homes were rated according to the scale of the Whittier State School and in practically all cases and in all respects neatness size necessities parental control, scored high Fecundity in the families concerned was low, the fathers were above average age grandparents were long-lived. The children were the offspring of normal gestations and were physically above the average partly attributable no doubt to the fact that 70 per cent were Jewish. Miss Allen does not make any inferences from the statistical facts but the writer of the preface, Prof C. B. Davenport, does not hesitate to interpret the results as further evidence of the heredity of high intelligence It is somewhat doubtful if such an inference is justified when one considers the small number of cases studied and the admittedly incomplete study of the families they came from Putting this objection aside however there is the further question whether one is entitled to assume as most of these investigators do assume, that any scale of intelligence such as the Stanford-Binet really adequately gauges native intelligence Its value in assessing particularly the higher grades of intelligence has been frequently disputed and the work of Dr. Cyril Burt and Mr Hugh Gordon has shown that the results are very considerably influenced by general environment and school training Is it not the fact that even the development of the intelligence itself is much modified by the nature of the environment ? The general fact that a high grade of ability does frequently run in families can scarcely be disputed, but there is still no completely satisfactory evidence to show how much is due to heredity and how much to the exceptional opportunity afforded in a prosperous and a cultured home The ardent eugenist is too ready to assume that the latter is not essential It may be quite true to say, as Prof Davenport does say, that ‘ the children do not have high intelligence merely because they come from prosperous households but surely the prosperous households make some contribution to the growth of the intelligence. Nature must be nurtured.

CHOLECYSTOGRAPHY.

THE discovery by Prof. E. A. Graham and his co-workers that certain phthalein compounds during excretion by the biliary tract were capable of casting opaque shadows has led to extensive application of this phenomenon as a means of taking X ray photographs of the gall-bladder It has stimulated efforts to improve the technique of radiographic methods applied to the gall-bladder, which are reflected in contributions to medical journals of all countries and in keen discussions at medical societies notably at the Section of Medicine of the B M.A. at Nottingham The opaque substances chiefly employed for the purpose have been tetra-halogen compounds of phenolphthalein and both the oral and intravenous channels of administration have been used Although at the B M.A. meeting, reported in our issue of July 31st it was stated that there had been no death recorded following the intravenous employment of these dyes, since that date a fatal case has been brought to our notice, and it appears expedient to direct attention once more to certain difficulties and risks which face those who are using the method. In the first place it must be recalled that several substances are on the market. Both tetra-iodo and tetra-bromophenolphthalein are in use ; further, in some preparations the halogen atoms are linked to the phenol portion of the molecule and in others to the phthalein As these compounds differ from one another in toxicity both towards the general organism and the local tissues, the problem of selection is not an easy one in the absence of precise guidance Moreover, the fact that they are all extremely unstable makes it difficult to obtain reliable solutions for intravenous use without the assistance of a skilled chemist.

In a recent article in THE LANCET[1] T Izod Bennett, Alan Moncrieff and F. G Nicholas strongly advocated the employment of the oral route of administration : they stated that toxic effects had never given them anxiety and their results appear to have been excellent. On the other hand, they in common with others using this route had had considerable difficulty in finding a capsule to hold the dye which would neither allow it to be liberated in the stomach nor to pass unchanged into the cæcum. If liberated above the pylorus an insoluble substance is formed with the gastric hydrochloric acid and violent vomiting may occur . if, on the other hand, the dye passes into the cæcum there will be no absorption and hence no gall-bladder shadow can be seen If however, a capsule or covering is secured which is digested only in the small intestine the oral route does appear to give results which are quite satisfactory and are obtained without risk. There is on the other hand, little doubt that in general the cholecystograms taken after intravenous injection are clearer and here there can be no doubt in the observer s mind as to whether proper absorption has taken place Since a negative cholecystogram implies disease of the biliary apparatus, it is often of supreme importance for the observer to know that the dye has been fully absorbed into the blood stream Intravenous injection alone can guarantee this If, however such intravenous injections are going to lead to the production of local thrombo-phlebitis owing to inexpert use or if the fatality mentioned above which was were treated in 1922–24 Novarsenobillon injections had been used in the beginning, and two injections, intravenous or intramuscular, usually abolish all outward signs of the disease, though it cannot yet be decided if they produce permanent cure Early in 1923 treatment by intramuscular injection of sodium-potassium-bismuth-tartrate was introduced, and this drug has proved very effective It is made in the Colony, and the cost of materials used in its preparation works out at 10 doses a penny The doses are ¼ to 3 gr dissolved in the proportion of 1 gr to 1 c cm The salt contains 54 5 per cent bismuth, and dosage is regulated according to age and susceptibility, children up to 2 years old receiving ½ to 1 gr of the salt, those from 2 to 18 years old, 1 to 2 gr, adults, 2 to 3 gr, and aged persons, 1 to 2 gr Children, it was found, tolerated relatively larger doses than adults, while old persons were very susceptible to the poisonous properties of the drug Both potassium and bismuth are depressants of muscle, heart, and nerve tissues, and doses of 5 gr of the salt given to adults caused severe stomatitis, with œdema of cheeks, lips, eyelids, scalp, and sometimes of the neck as well, in one case there were tonic and clonic spasms of limbs, unconsciousness, and low muttering delirium Bismuth produces a stomatitis more readily and more severe in type than does mercury Usually two injections of the salt sufficed to procure rapid healing of the lesions, but here also time alone can show if that is really enough for permanent cure Intravenous injection of tartar emetic had no influence on the disease; and when, later, Castellani's mixture by the mouth was tried, the patients rejected it, for by that time they had no faith in any treatment that did not involve injection by needle As a result of treatment, not a tithe of the disease existing in 1921 could be found in the localities to-day, indeed, the vast majority of patients now come voluntarily from districts outside the area of this yaws campaign

---

[1] THE LANCET, July 3rd p 19

Yaws is definitely neither hereditary nor congenital, and a breach of skin surface is probably necessary for the entry of the virus It is significant that by far the most of primary yaws lesions seen in Kenya were found on the anterior surface of the leg—the part of the body most liable to injury, as, for instance, from thorn and grasses along the narrow single-file native paths The disease is spread by direct contact, or by the feet of non-biting flies, while the bite of an arthropod may be a ready place for the virus carried by some other agency, as, for example, by the scratching or rubbing of infected fingers Cases occurred frequently at 5000 ft altitude and over, but were mostly found in the warmer parts of the district The insanitary conditions of native village life are ideal for the spread of the disease, the people live in small, verminous, ill-lighted, unventilated huts strewn around with garbage There are swarms of flies, and micturition and defæcation are promiscuous in and about the villages Though the average accommoda- is 2 4 persons per hut, cattle, goats, sheep, and fowl are herded every night into them besides the human occupants There is no isolation of the sick, they live in intimate contact with the fit, and eat from the common dish with the pus from their ulcers soiling the floor and the clothing of others Clothing, blankets, and bedding are commonly exchanged The practice of depilation of face and body provides a means of entry and a mode of conveyance of the yaws virus, sometimes the primary yaw appears at the site of mutilation resulting from the drastic unclean methods used in circumcision of the youths and excision of labium minus in the maidens. Yet, in spite of all this, merely treatment of those with surface lesions in breaking repeatedly the chain of contagion, has sufficed to bring about this enormous reduction in the disease No evidence was found in support of those who deny existence of the primary yaw The infection cannot be a venereal one, for the only patients presenting genital primary yaws were children The granulomatous secondary skin eruption had a very definite predilection for moist surfaces, such as muco-cutaneous junctions of mouth, alæ nasi, vulva, and anus It was frequently accompanied by inflammation of joint with or without pyrexia In all cases after the secondary eruption had completely healed, tertiary lesions appeared as irregular ulcerations following breaking down of gumma-like nodules Periostitis and dactylitis occurred, but iritis was not observed Scarring after healing of ulcerations led to contractures, muscle wasting and shortening, a common consequence being great deformity Dr Callanan is convinced from his observations that the terrible destruction of palate and nasal bones and skin of face, known as *gangosa*, was directly due to untreated yaws Many of the yaw cases showed splenic enlargement, but no internal organ other than the spleen was seen to be affected No nervous conditions that could be attributed to yaws were discovered—an interesting observation in view of the persistent reports from Fiji of general paresis and tabes dorsalis attributed there to yaws Dr Callanan deserves congratulation on this record of his careful observations on a great number of individual cases, and the organisation and conduct of the campaign It is a valuable contribution to the literature of yaws, whilst the campaign itself reflects credit on the medical administration of the Colony, and provides an instructive and encouraging example for other countries where yaws is a scourge—even for some others under the British flag and the ægis of the Colonial Office

THE ELEMENTS OF LONGEVITY

THE duration of human life has various aspects, the physician at the bedside, the medical man examining a candidate for life assurance, the referee at the headquarters of the assurance company, all work with a different set of data with somewhat different ends in view The philosophic yet precise consideration of the biology of death constitutes the greater part of the work of the last named, he has a tough proposition to deal with To help him there is the inductive method of clinical medicine, the analogy of animal experiment especially used by Pearl, the somewhat unworked field of life-assurance statistics, the science of heredity, and sundry other possibilities into which Dr Hans Ullmann, of Berlin, goes at some length in one of the recent instalments[1] of Brugsch and Lewy's "Biologie der Person" Dr Ullmann cites Rubner's view that the duration of life of a species depends upon the potential energy acquired from its food, Weismann's theory of potential immortality, the effect of the extent of surface, of internal secretions, of the physico-chemical changes, intoxication with products of metabolism, and the hypotheses of the gradual death of increasing proportion of the cells (Kassowitz) and of the gradual loss of power of function in the cells (Ribbert) Obviously the individual duration of life is influenced by sex, by different environments and diseases by social status and race, by the effect of different dietaries by heredity and pigmentations But Dr Ullmann is impressed by the preponderance of familial influence in consequence of which the individual reacts in a certain way to his environment Belief in the occurrence of familial longevity and short-livedness is now spreading, as may be seen in the work of Mary Beeton and Karl Pearson, L Cuénot, D Westergaard, and A Ploetz W Scheidt, working over A von Lindheim's Austrian material, ascertained that out of 281 eighty-year-olds 102 came from parents of whom one was over 80, and 64 from parents both of whom were over 80 Among the old people in the Jewish almshouses in Vienna in 1908, 41 per cent came from parents both of whom were over 70 years old In all 95 per cent of the old people dealt with by Lindheim were from parents of whom at least one was over 70 years old The author gives the unfavourable experience of 31 American life assurance companies a number of cases gastric lavage will have the effect of temporarily stopping the vomiting and the desired result will thus be obtained ; in other cases it may be necessary to resort to re-feeding after the child has vomited, or it may be found that feeds given by a nasal tube will be retained where feeds taken by the bottle will be vomited A breast-fed baby may be allowed to go to the breast in the normal manner unless it is very collapsed, under which circumstances the mother's milk must be expressed and given in a bottle or by a nasal catheter For the artificially fed child any of the formulæ suggested below in connexion with post-operative feeding may be used

---

[1] Die Biologie der Person ein Handbuch der Allgemeinen und Speziellen Konstitutionslehre Edited by Prof Th Brugsch and Prof F H Lewy Third instalment comprising pp 749–1051 of vol i which it completes Berlin and Vienna Urban and Schwarzenberg 1926 Mk 15

Subcutaneous saline should be administered if the child is dehydrated, and if the efforts at making the infant retain food have been unsuccessful 2 per cent of glucose may be added to the normal saline, but this should be used with caution as it is apt to be painful and may even give rise to suppuration On the day of operation the last feed should be given three to four hours and the stomach washed out one hour before going up to the theatre The child should be warmly clad and the arms and legs bandaged in cotton-wool

Technique

Operation —The exact technique of the operation is a matter to be decided by the surgeon Rammstedt's operation of transperitoneal section of the pyloric sphincter has almost entirely superseded all other forms of operative procedure, although Loreta's method of dilating the pyloric sphincter is still preferred by some surgeons

Post-operative Treatment —Following the operation the patient should be carefully watched to guard against shock The temperature must be taken frequently and hyperpyrexia watched for , should the temperature rise above 102° F an ice-bag may be applied to the head If vomiting occurs after operation it will often be found that a small enema of normal saline will have the effect of stopping it Subcutaneous saline may be necessary, but care should be taken to avoid water-logging the child

Post-operative feeding is of the greatest importance The safest method is to give small feeds frequently , if feeding is pushed enteritis is apt to follow and is the most serious of all complications It must be remembered that the stenosis is now relieved and the intestine, which for some weeks has been unused to receiving more than small quantities of food, is in an unfit state to deal with large amounts No very rapid gain in weight should be looked for in the first two weeks

The ideal food for feeding after operation is unquestionably breast milk If this is not available any of the following formulæ may be used :—

(1) Nestlé's Ideal milk, 5 oz. , dextri-maltose, 1¼ oz , water, 25 oz

(2) Fully peptonised skimmed cow's milk, 2 parts , water, 1 part , sugar, 1 teaspoonful to each 3 oz.

(3) Marriot's skimmed lactic acid milk, prepared as follows Boil 1 pint of skimmed cow's milk for five minutes, remove the scum, replace the fluid lost by boiling with cold boiled water up to 1 pint. Cool thoroughly and add lactic acid (B P) 1 drachm drop by drop, being most careful to stir the milk the whole time that the acid is being added Dextri-maltose in the proportion of 1¼ oz. to the pint should be added while the milk is still warm

The following table may serve as a guide as to the amounts to be fed The first feed is given two hours after operation Feed hourly for 11 hours as follows —

2 feeds glucose 7½ per cent solution 1 dr

3 feeds	Breast milk or milk mixture	½ dr	Boiled water	½ dr
2 "		1 "	"	1 "
1 feed		1½ "	"	1½ "
1 "		2 "	"	2 "
1 "		2½ "	"	2 "

Now feed two-hourly for 25 hours as follows —

1 feed	Breast milk or milk mixture	3 dr	Boiled water	2 dr
2 feeds		4 "	"	2 "
2 "		5 "	"	1 "
3 "		7 "	"	1 "
3 "		1 oz.		
2 "		1 oz. 2 dr		

Following this feed give 1½ oz. 2½-hourly for 12 hours, and then 2 oz 3-hourly for 12 hours After this gradually increase the size of the feeds and reduce their number until the child is being fed six times in the 24 hours

If the child is breast fed it will be put to the breast after the first 36 hours unless the condition is very poor Feed 2½-hourly (3 to 5 minutes at the breast) for 12 hours, then 3-hourly (5 to 7 minutes at the breast) for 12 hours After this gradually increase the length of time at the breast and reduce the number of feedings to six in the 24 hours As soon as the child is put back to the breast the amount of food taken must be regulated by weighing before and after each breast feed

Medical Treatment

The medical treatment of congenital pyloric stenosis is based on the fact that if the condition is left to itself there is a definite tendency towards recovery The pylorus will in time open itself, provided that the child does not die before this has taken place If an attempt at non-operative treatment has been decided on gastric lavage should be started at once

Dietetic Treatment —Breast milk is the ideal food, and every effort should be made to obtain it If the child is breast fed it may be allowed to go to the breast in the normal manner, unless very exhausted, in which case milk expressed from the mother's breast must be used If breast milk is unobtainable thick cereal feeding or feeding with skimmed lactic acid milk may be employed

The principle of thick cereal feeding is to supply the infant with the maximum amount of nourishment he can conveniently assimilate and to provide it in a form that cannot readily be vomited. The following formula as suggested by Sauer may be used . farina or rice flour, 3 tablespoons ; skimmed milk, 9 oz , water, 12 oz , dextri-maltose, 3 tablespoons. This is boiled for one hour in a covered saucepan and should be of such a consistency that it will stick to an inverted spoon The food should be given warm and may be administered either on a spoon or a spatula, or forced with a glass rod through a Hygiea teat in which a large hole has been made , 2 to 6 tablespoons of this paste may be given six to seven times per day, depending upon the size and condition of the infant It is of the utmost importance to remember that with this type of feeding the child is receiving very little fluid and this will have to be made good with either rectal or subcutaneous salines

Good results are also claimed for feeding with skimmed lactic acid milk with the addition of dextri-maltose, 1½ oz to 1 pint Six to eight feeds should be given in the 24 hours, commencing with small feeds of about 2 oz and gradually increasing according to the child's age and condition As the vomiting decreases and the general health improves whole lactic acid milk may be gradually substituted

Drugs —In conjunction with dietetic treatment atropine should be given A solution of atropine sulphate 1 in 1000 is freshly prepared and is administered by mouth in a small quantity of water 15 minutes before each feed The initial dose is 1 minim , the patient is watched and if no toxic effects are observed the dose is gradually increased by 1 minim until flushing of the skin appears, this dose or slightly less being then continued It may be necessary to go on using it for several months Good results have been reported from the continent of alternate doses of atropine and intracutaneous injections of ¼ mg. doses of adrenalin hydrochloride, 1 in 1000

C K J HAMILTON, M B Oxf , M R C.P Lond ,
John and Temple Research Fellow and Clinical
Assistant to the Children's Dept ,
St Thomas's Hospital

UNIVERSITY COLLEGE HOSPITAL —The report for 1925 records that of the 315 available beds 305 were constantly occupied ; the in-patients numbered 5193, and there were nearly a quarter of a million attendances in the out-patient department The Dental Hospital had 12 711 patients, and the ear, nose and throat department 585 in-patients attributed to general toxic effects, is going to be repeated, it seems clear that this method may fall into disuse In view of the very real value of cholecystography in clinical medicine such an event would be regrettable The position is somewhat analogous to that which arose when salvarsan first came into general use Unreliable products were mixed with reliable ones, and much suffering was caused by inexpert administration We would suggest the following rules for the guidance of those using this method as being useful at its present stage of development (1) On account of its safety the oral route should be used as the routine method, intravenous injection being reserved for those cases where doubt remains after oral administration has been tried (2) Clinicians and pharmacists should combine in order to secure a satisfactory coating for the dye for its oral administration (3) When the intravenous route is used substances of guaranteed purity should be employed, and users should remember that this description cannot be given to all the preparations obtainable (4) Intravenous solutions must be freshly prepared, a very few hours sufficing to produce serious decomposition of these compounds (5) Extravasation during intravenous injection may lead to serious local effects, and the employment of stale compounds, impure compounds, or compounds in too high a concentration may lead to very serious general effects

If these rules are remembered the full value of this promising diagnostic innovation should be explored without danger to the public We understand that Prof Graham and his colleagues have evolved a substance more satisfactory for injection than any of those at present on the market, which will shortly be available In any case the standards of purity desirable for any of these dyes, when administered to the human subject, might well form the subject of investigation by the Pharmaceutical Society, to whom the task of the standardisation of other drugs and biological products has recently been entrusted by the Medical Research Council

---

Progress of the London Hospitals—The statistical report of the Hospital Economy Committee of King Edward's Fund for 1925 states that the 118 hospitals which come within the purview of the Fund dealt with seven million out-patient attendances The number of beds has increased by 240 to 13,700 , the average number occupied was 500 more, and there were 10,400 more in-patients The receipts were £3,029,000—a gratifying increase—and the expenditure was £2,906,000, an increase of £150,000 There has, however, been a reduction in the cost per unit, and whereas in 1920 there were 77 hospitals which failed to meet their expenditure, last year the number fell to 49 In addition to annual income, the 118 hospitals raised £691,000 for building and equipment and £167,000 for endowment, bringing the total receipts up to £3,887,000 Of the annual income only 19 per cent was derived from investments

Financial Position of St Thomas's Hospital—Sir Arthur Stanley, the treasurer, reports that the financial results of the working of the hospital in 1925 were "very disappointing," and that the future is "regarded with considerable anxiety" Expenditure exceeded income by more than £36,000, and there is a debt to the bank of nearly £98,000 Work increases out of all proportion to receipts, and if the gulf between incomings and outgoings cannot be bridged the governors "will be most reluctantly obliged to consider the expediency of reducing their work" Last year there were 11,318 in-patients, staying an average of 18 days at a cost of £11 11*s* 8*d* each The 96,110 new out-patients cost 10*s* 5*d* each

Westminster Ophthalmic Hospital—The plans for the new building in Broad-street, W C 1, which will shortly be begun, provide for an out-patients' department which will accommodate from 300 to 400 patients and beds for 30 female and 22 male in-patients, including 10 for cataract cases for each sex , there will also be a children's ward and separate wards for paying patients An entire floor will be given up to the nurses The new site is nearly three times the size of the old one

Queen Charlotte's Maternity Hospital—Last year 1906 women were delivered in the hospital, of whom 19 died, and 1842 in their own homes 2 of whom died The Antenatal Department gave 14 078 attendances to 5567 patients, and during the last 50 years 11 891 persons have been trained in midwifery and monthly nursing

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CLXXXVII

TREATMENT OF CONGENITAL HYPERTROPHIC PYLORIC STENOSIS

One of the most important factors in the treatment of congenital pyloric stenosis is early diagnosis Upon this may depend success or failure of treatment In any case in which an infant of a few weeks old, especially if a male, presents the symptom-complex of projectile vomiting, constipation, and wasting, careful examination should be made either during or immediately after a feed to ascertain if any gastric peristalsis can be observed, and to see if, by careful palpation, a pyloric tumour can be discovered Palpation of the pyloric tumour may not be an easy matter and often it is necessary to spend a considerable time over the examination Difficulty may arise from the fact that the tumour is tucked up under the liver When the disease is far advanced diagnosis is usually simple enough, but the early cases are easily missed The practitioner is often misled by the fact that a change in diet may stop the vomiting temporarily and one food after another is tried in the hope of finding the right one X ray examination after an opaque meal is valuable in establishing the diagnosis in doubtful cases, and if due care is taken no harm will result to the infant

The diagnosis having been established there are two courses open, the one surgical treatment, the other medical In deciding which course to adopt it must be remembered that delay greatly prejudices the infant's chance of recovery The practice of giving medical treatment a trial and resorting to operation only if it proves unsatisfactory is to be condemned on the grounds that the general condition of the infant will by then be less suited to withstand the shock of an operation Medical treatment is never advisable in the very acute cases or in a breast-fed baby In the former the vomiting is so persistent and the downward progress so rapid that there is no time for the patient to respond to it ; in the latter, owing to the length of time taken to effect a cure, there is a very real danger of the mother losing her milk from mental strain and anxiety In this case the baby has the additional handicap of having to adapt itself to an artificial food No case should be considered too severe for operation , often the most unlikely cases come through the best Medical treatment is best adapted to mild cases where the vomiting is slight and the general condition good, more particularly to those in which the disease has not been recognised until between the second and third month and the condition is already beginning to cure itself

To sum up, surgical treatment is to be recommended in all but the very mild cases ; but it must be remembered that the good results obtained in this country by surgical treatment have been largely due to the fact that the surgeons have been skilled in the technique of the operation The fact that the services of a specially skilled surgeon are not available may well influence the choice between surgical and medical treatment

Surgical Treatment

Pre-operative Measures—When operation has been decided upon it is usually unwise to delay it for more than two or three days This time should be devoted to the improvement of the general condition of the infant In order to remove the mucus and combat the existing gastritis gastric lavage should be started at once, and should be performed once or twice daily with a solution of sodium bicarbonate in warm water (one teaspoonful to the pint), the washing should be continued until the fluid returns clear It is important that in the day or two preceding operation the infant should receive as much nourishment as possible In as possible at the outset considerable latitude was allowed in the selection of patients for admission Now the following principles are being observed .—

(a) No case below the age of 3 years is accepted, because the nursing staff is inadequate if such are taken, and because the diagnosis is often uncertain in these cases

(b) Completely bedridden, paralysed, incontinent cases are excluded, because material improvement is in the present state of knowledge not to be expected

(c) Slight cases, presenting neither physical nor mental symptoms in any recognisable degree, admission being sought simply by way of convalescence, are refused

(d) Cases in which such mental deterioration has followed the original attack of epidemic encephalitis as to reduce the patient to the level of the mental defective are not taken, since other arrangements exist for their treatment

(e) Cases in which the diagnosis is doubtful or more than doubtful are not accepted Not all encephalitis is encephalitis lethargica or epidemica, and sporadic encephalitis, occurring in association with one or other of the exanthems, or separately has long been known

In addition to the staff of nurses a female teacher is attached to each pavilion Two masseuses give mechano-therapeutic and medico-electrical treatment to selected cases The bigger and stronger boys of the potentially "mischief-making" type are under the control of a male instructor In each pavilion of 25 children school-teaching goes on during five days a week, from 9 30 to 12, and from 1 30 to 3, lessons being interspersed with physical drill and handiwork There is ample playground and outdoor games are organised Technical medical treatment is in the hands of the resident medical officer in consultation with the visiting neurologist Systematic treatment is being planned for the Parkinsonian and other neurological cases, and a scheme of investigation in all cases

At the time of report the complete unit had only been in existence for a month or two, but much less difficulty had been encountered than expected in regard to inversion of sleep rhythm Patients who had exhibited this phenomenon in marked degree at home proved adaptable to régime, and definite improvement in normal sleep was recorded in practically every instance In the Parkinsonian group the nervous improvement shown is attributed to the effect of open air and good surroundings In many cases of behaviouristic impairment transference to the atmosphere of the unit, with its régime, discipline, regular hours, and supervision proved eminently beneficial Patient schooling is gradually resulting in a general improvement of attention on the part of these impulsive children, violent outbursts are less frequent the longer the child stays So far one case only has proved refractory, that of a girl of 8 years, who has shown deterioration over a period of some four months, and whose intellectual and emotional level is that of the mental defective.

The sequelæ of epidemic encephalitis, Dr Wilson concludes, are as diverse as the phenomena of the disease itself, hence the clinical material of the unit is, and is always likely to be, particularly heterogeneous It ranges from merely paretic or physically handicapped juveniles, of normal intellect and of good behaviour and control to so-called "moral imbeciles" (an unsatisfactory term) whose cunning and deceitfulness are linked to a certain degree of lowering of the intellectual level and who are potential young criminals All are united solely by the slender thread of a previous attack of encephalitis. It will be a matter for investigation to what extent these behaviouristic defects and apparent changes in personality are in actual fact the outcome of the brain disease, and how far, if at all, other factors than it are responsible (*To be continued*)

ST BARTHOLOMEW'S HOSPITAL.—This is one of the few voluntary hospitals which enjoys a large income from investments, and the report for 1925, which has now been issued, shows that the year's revenue from this source amounted to £120,000 out of a total of just under £185,000 There were 9191 in-patients, who stayed an average of 23 days and cost £11 13s 6d each The estimated cost of the new home for 257 sisters and nurses is £191 000, of which £44,000 has yet to be raised There were 678 students in the Medical College

VIENNA.

(FROM OUR OWN CORRESPONDENT)

Mosquitoes in Vienna.

THE unusual weather conditions of this summer have caused big floods in the neighbourhood of Vienna, especially in the valley of the Danube Vast areas of meadows and woodlands have remained under water for weeks and weeks, except for brief intervals, and in consequence Vienna is now suffering from a plague of mosquitoes Lately this has been causing some alarm, for in the old days there used to be a small focus of malaria in the city, though since 1909 the disease seems to have been stamped out There are now so many mosquitoes that the public parks and woods are full of them, and they are certainly a nuisance if not a menace Hitherto there has been no real danger of getting malaria from them, but recently true anopheles have been discovered and the public has gained some haphazard knowledge of the possible danger from reports in the newspapers The Board of Health has accordingly published a reassuring statement and is taking steps to do away with breeding places as far as they are known and are within its jurisdiction

Psycho-analysis by Laymen.

In Vienna, as elsewhere, the exponents of psycho-analysis have to face much criticism, and there is a strong feeling that only qualified medical men should be allowed to use the method Prof Freud—who by the way, has just celebrated his seventieth birthday—has amongst his pupils many who are laymen and one of them, Dr T Reik, has lately been the centre of an affair which has brought the question of the non-medical analyst into the public eye Dr Reik, who is a doctor of philosophy treated an American gentleman by psycho-analysis with the unfortunate result that the patient went from bad to worse and had a severe mental breakdown The American Consul complained to the Medical Council saying that such a quack should be stopped from continuing his evil doings and the Council informed the State Board of Health, which then held an inquiry. Dr Reik, it appears, has never claimed to be a doctor, all his patients were aware that he was not qualified, but his skill is such that Prof Freud has repeatedly handed over difficult cases to him because of his special abilities as an analyst In the controversy that has arisen Prof Freud points out that the psychic factor is not a monopoly of medical men and that it would be wrong to stop the work of so able a man as Dr Reik simply because he is not a member of the profession The authorities however, take up a much more formal attitude, they say that psycho-analysis is a strictly medical procedure, and must not be practised by a layman except under the direct supervision of a doctor This is in line with their decision about hypnotic experiments not long ago when the Supreme Board of Health acting on a report by Prof Wagner-Jauregg refused permission for hypnotic performances in public on the ground that hypnosis should only be used by qualified doctors as it may have serious consequences to mind or body if employed either as a form of treatment or for experiment.

Trichinosis in Austria

The Ministry of Health has issued a memorandum calling the attention of practitioners to the fact that in 1925 seven cases of trichinosis with three deaths were reported from Vienna and Innsbruck, and that in the first six months of this year 11 cases—with one death—were brought to the notice of the Board of Health The disease seems therefore to be on the increase and as the memorandum points out the symptoms are so vague as to escape notice unless specially looked for. The patients often complain of muscular pains, slight fever and a little general malaise, and a diagnosis of rheumatism is often

Special Articles.

METROPOLITAN ASYLUMS BOARD

SAMPLES OF THE YEAR'S WORK

A LARGE number of scientific papers are included in the medical section of the annual report for 1925–26 of the Metropolitan Asylums Board, whose general scope has already been indicated[1] A few of these papers here summarised may serve to give an idea of the wide scope and progressive character of the Board s medical work

PUERPERAL SEPSIS

Information presented to the Congress of Obstetrics held in London in 1925 showed that in cases of puerperal septicæmia confirmed by blood culture the mortality varied from 50 to 70 per cent , and that no specific treatment could be said to be of real value. The Ministry of Health, having approached the M A B with regard to the admission of cases of puerperal sepsis to certain of their hospitals, in the hope that careful investigation of these cases in bulk might lead to definite improvement in their prevention and cure, in October, 1925, 50 beds were allotted at the South-Western, the North-Western, and the Eastern Hospitals, these centres being chosen to deal with the different districts of London Mr James Wyatt, who was appointed obstetric consultant to the three hospitals, reports on the 52 cases which had passed through up to the end of February, 1926 He summarises the methods of investigation and treatment that have up to the present been adopted, adding that it is more than likely that, as our knowledge advances, they will be considerably altered, and that in any case the careful bacteriological examinations which are being carried out will increase our knowledge The general line of treatment that has been adopted is as follows —

The patient on admission is allowed to settle down in her new surroundings for some hours before any investigations are carried out Then an intra-uterine culture is taken, and if the pulse-rate has not settled after her removal to hospital to below 120 per minute a blood culture is taken The method in which the blood is dealt with before the cultures are actually taken is of great importance Local treatment is carried out very gently, as it is considered that the less the parts are disturbed the better In those cases where there is much laceration of the soft parts or the lochia are offensive vaginal lavage with liq sod chlorinatæ ℥ii in one pint of water is carried out, and later on those cases showing signs of localised peritonitis are given intra-uterine injections of glycerine, as advocated by Remington Hobbs The patients are kept in the Fowler position to aid drainage, and in some cases liq extract of ergot is given by mouth to try to stimulate the uterus General treatment consists chiefly of good nursing and suitable nourishment, and great stress is laid upon getting the patient to sleep, sedatives being used without hesitation if necessary In those cases where a positive blood culture is obtained, injection of novarsenobillon in small doses (0 3 g) is being tried, and in a few cases intravenous injection of perchloride of mercury (gr 1/16-gr 1/32) and mercurochrome 50 mg has been tried but up to date no definite conclusions can be drawn but it is to this line of treatment that special notice is being given, as it is felt that in those cases where there is infection of the blood stream it is the most likely to effect a cure.

It seems possible, says Mr Wyatt, to divide the cases of puerperal sepsis into four classes —

I An infection of the uterus which remains localised to that organ

II An infection of the uterus which spreads via the Fallopian tubes and produces either a localised or a general peritonitis

III An infection of the uterus which spreads to the pelvic cellular tissue

IV A general infection of the blood stream.

It is seldom possible at the onset of the disease to decide which class each case will fall into, but roughly in: I. The pulse is practically never raised above 120 and within two or four days the temperature falls II The temperature remains up for many days, in some cases for weeks, the pulse varies, but, unless the peritonitis is general, is again seldom above 120 There is pain over the lower abdomen, and, on bimanual examination, evidence of inflammation around the uterus, especially in the pouch of Douglas III This is usually of late onset, tenth to fourteenth day of puerperium, although there is usually evidence of the presence of some sepsis in the earlier days, which apparently subsides and then flares up again and on bimanual examination, the cellular tissue at the sides and in front of the uterus is found to be involved IV In these cases the pulse appears to be the best guide and if it remains above 130 for 24 hours it strongly suggests a general infection.

Allotting the 52 cases under these four headings, Mr Wyatt reports —

I —Thirty-one came under Class I local uterine infection All recovered In the majority of the cases the temperature and pulse settled within a few days, and in six only continued for more than seven days In 21 of the cases intra-uterine cultures were taken In 14 hæmolytic streptococci were present In seven, other organisms—non-hæmolytic streptococci, *B proteus*, diphtheroids, *B coli* The cases in which no swab was taken settled down within 24 hours of admission

II —Eleven came under Class II spread of infection to the peritoneal cavity Of these three with general peritonitis died No organisms were found in the blood, but in one in which uterine culture was taken hæmolytic streptococci were present Eight with pelvic peritonitis and salpingitis recovered In four of these hæmolytic streptococci were found in the uterus, and in four, other organisms—diphtheroids, &c One of these cases was later operated upon elsewhere and a pyosalpinx removed

III —Two with venous infection, both died One had a pulmonary embolism, one had a femoral thrombosis Hæmolytic streptococci were found in the uterine culture of both cases The patient with the femoral thrombosis also had probably a general infection, although the blood cultures were negative

IV —Seven under the heading of Class IV —viz., septicæmia In six hæmolytic streptococci in blood In one *Staphylococcus aureus* in blood Of these, four died and three recovered In all of them either novarsenobillon in doses of 0 3-0 9 g , or hydrarg perchlor gr 1/32-1/16, or mercurochrome 50 mg were given

In the septicæmic cases that recovered the infection appeared to be not severe, and Mr Wyatt suggests that the virulence of the infecting organisms varies considerably in different cases Attempts are being made to confirm this, as there is no doubt that with regard to the most prevalent organism, the hæmolytic streptococcus, this may be found in the vagina before delivery and yet perfectly normal puerperia supervene

Detailed reports by Dr R Swyer of two interesting cases of puerperal fever are appended

THE POST-ENCEPHALITIS UNIT

Dr S A Kinnier Wilson, consulting neurologist to the Board, reports on the initiation of the post-encephalitis unit opened at the Northern Hospital, Winchmore Hill, in the autumn of last year under the temporary charge of Dr Thomas Lindsay, lent from the Mental Hospitals Service The unit occupies four pavilions of 25 beds each, two being for boys and two for girls , these are now fully occupied, and there is a waiting list for admission The purpose of the unit is to observe and treat the after effects physical and mental, of children who have had an attack of lethargic or epidemic encephalitis—so called "sleepy sickness" From the outset it was decided that no clear-cut differentiation could be drawn between cases exhibiting nervous and those showing mental symptoms A number of children now in the unit show nervous disabilities with no mental or behaviouristic defects · others are perfectly well physically although their behaviour is abnormal. In order to make the number complete as quickly as possible at the outset considerable latitude was allowed in the selection of patients for admission Now the following principles are being observed —

---

[1] THE LANCET, August 21st, p 392

(*a*) No case below the age of 3 years is accepted, because the nursing staff is inadequate if such are taken, and because the diagnosis is often uncertain in these cases

(*b*) Completely bedridden, paralysed, incontinent cases are excluded, because material improvement is in the present state of knowledge not to be expected

(*c*) Slight cases, presenting neither physical nor mental symptoms in any recognisable degree, admission being sought simply by way of convalescence, are refused

(*d*) Cases in which such mental deterioration has followed the original attack of epidemic encephalitis as to reduce the patient to the level of the mental defective are not taken, since other arrangements exist for their treatment

(*e*) Cases in which the diagnosis is doubtful or more than doubtful are not accepted Not all encephalitis is encephalitis lethargica or epidemica, and sporadic encephalitis, occurring in association with one or other of the exanthems, or separately, has long been known

In addition to the staff of nurses a female teacher is attached to each pavilion Two masseuses give mechano-therapeutic and medico-electrical treatment to selected cases The bigger and stronger boys of the potentially "mischief-making" type are under the control of a male instructor In each pavilion of 25 children school-teaching goes on during five days a week, from 9 30 to 12, and from 1 30 to 3, lessons being interspersed with physical drill and handiwork There is ample playground and outdoor games are organised Technical medical treatment is in the hands of the resident medical officer in consultation with the visiting neurologist Systematic treatment is being planned for the Parkinsonian and other neurological cases, and a scheme of investigation in all cases

At the time of report the complete unit had only been in existence for a month or two, but much less difficulty had been encountered than expected in regard to inversion of sleep rhythm Patients who had exhibited this phenomenon in marked degree at home proved adaptable to régime, and definite improvement in normal sleep was recorded in practically every instance In the Parkinsonian group the nervous improvement shown is attributed to the effect of open air and good surroundings In many cases of behaviouristic impairment transference to the atmosphere of the unit, with its régime, discipline, regular hours, and supervision proved eminently beneficial Patient schooling is gradually resulting in a general improvement of attention on the part of these impulsive children, violent outbursts are less frequent the longer the child stays So far one case only has proved refractory, that of a girl of 8 years, who has shown deterioration over a period of some four months, and whose intellectual and emotional level is that of the mental defective

The sequelæ of epidemic encephalitis, Dr Wilson concludes, are as diverse as the phenomena of the disease itself, hence the clinical material of the unit is, and is always likely to be, particularly heterogeneous It ranges from merely paretic or physically handicapped juveniles, of normal intellect and of good behaviour and control, to so-called "moral imbeciles" (an unsatisfactory term) whose cunning and deceitfulness are linked to a certain degree of lowering of the intellectual level and who are potential young criminals All are united solely by the slender thread of a previous attack of encephalitis It will be a matter for investigation to what extent these behaviouristic defects and apparent changes in personality are in actual fact the outcome of the brain disease, and how far, if at all, other factors than it are responsible (*To be continued.*)

ST BARTHOLOMEW'S HOSPITAL.—This is one of the few voluntary hospitals which enjoys a large income from investments, and the report for 1925, which has now been issued, shows that the year's revenue from this source amounted to £120,000 out of a total of just under £185,000 There were 9101 in-patients, who stayed an average of 23 days and cost £11 13*s* 0*d* each The estimated cost of the new home for 257 sisters and nurses is £191,000, of which £11,000 has yet to be raised There were 676 students in the Medical College

VIENNA.

(FROM OUR OWN CORRESPONDENT)

Mosquitoes in Vienna

THE unusual weather conditions of this summer have caused big floods in the neighbourhood of Vienna, especially in the valley of the Danube Vast areas of meadows and woodlands have remained under water for weeks and weeks, except for brief intervals, and in consequence Vienna is now suffering from a plague of mosquitoes Lately this has been causing some alarm, for in the old days there used to be a small focus of malaria in the city, though since 1909 the disease seems to have been stamped out There are now so many mosquitoes that the public parks and woods are full of them, and they are certainly a nuisance if not a menace Hitherto there has been no real danger of getting malaria from them, but recently true anopheles have been discovered and the public has gained some haphazard knowledge of the possible danger from reports in the newspapers The Board of Health has accordingly published a reassuring statement and is taking steps to do away with breeding places as far as they are known and are within its jurisdiction

Psycho-analysis by Laymen.

In Vienna, as elsewhere, the exponents of psycho-analysis have to face much criticism, and there is a strong feeling that only qualified medical men should be allowed to use the method Prof Freud—who, by the way, has just celebrated his seventieth birthday—has amongst his pupils many who are laymen and one of them, Dr T Reik, has lately been the centre of an affair which has brought the question of the non-medical analyst into the public eye Dr Reik, who is a doctor of philosophy, treated an American gentleman by psycho-analysis with the unfortunate result that the patient went from bad to worse and had a severe mental breakdown The American Consul complained to the Medical Council, saying that such a quack should be stopped from continuing his evil doings and the Council informed the State Board of Health, which then held an inquiry. Dr Reik, it appears, has never claimed to be a doctor, all his patients were aware that he was not qualified, but his skill is such that Prof Freud has repeatedly handed over difficult cases to him because of his special abilities as an analyst In the controversy that has arisen Prof Freud points out that the psychic factor is not a monopoly of medical men and that it would be wrong to stop the work of so able a man as Dr Reik simply because he is not a member of the profession The authorities, however take up a much more formal attitude, they say that psycho-analysis is a strictly medical procedure, and must not be practised by a layman except under the direct supervision of a doctor This is in line with their decision about hypnotic experiments not long ago, when the Supreme Board of Health, acting on a report by Prof Wagner-Jauregg refused permission for hypnotic performances in public on the ground that hypnosis should only be used by qualified doctors as it may have serious consequences to mind or body if employed either as a form of treatment or for experiment.

Trichinosis in Austria

The Ministry of Health has issued a memorandum calling the attention of practitioners to the fact that in 1925 seven cases of trichinosis with three deaths were reported from Vienna and Innsbruck, and that in the first six months of this year 11 cases—with one death—were brought to the notice of the Board of Health The disease seems, therefore, to be on the increase, and as the memorandum points out the symptoms are so vague as to escape notice unless specially looked for The patients often complain of muscular pains, slight fever and a little general malaise, and a diagnosis of rheumatism is often

Special Articles.

METROPOLITAN ASYLUMS BOARD.

SAMPLES OF THE YEAR'S WORK.

A LARGE number of scientific papers are included in the medical section of the annual report for 1925–26 of the Metropolitan Asylums Board, whose general scope has already been indicated[1] A few of these papers here summarised may serve to give an idea of the wide scope and progressive character of the Board s medical work

Puerperal Sepsis.

Information presented to the Congress of Obstetrics held in London in 1925 showed that in cases of puerperal septicæmia confirmed by blood culture the mortality varied from 50 to 70 per cent, and that no specific treatment could be said to be of real value. The Ministry of Health, having approached the M A B with regard to the admission of cases of puerperal sepsis to certain of their hospitals, in the hope that careful investigation of these cases in bulk might lead to definite improvement in their prevention and cure, in October, 1925, 50 beds were allotted at the South-Western, the North-Western, and the Eastern Hospitals, these centres being chosen to deal with the different districts of London Mr James Wyatt, who was appointed obstetric consultant to the three hospitals, reports on the 52 cases which had passed through up to the end of February, 1926 He summarises the methods of investigation and treatment that have up to the present been adopted, adding that it is more than likely that, as our knowledge advances, they will be considerably altered, and that in any case the careful bacteriological examinations which are being carried out will increase our knowledge The general line of treatment that has been adopted is as follows —

The patient on admission is allowed to settle down in her new surroundings for some hours before any investigations are carried out Then an intra-uterine culture is taken, and if the pulse-rate has not settled after her removal to hospital to below 120 per minute a blood culture is taken The method in which the blood is dealt with before the cultures are actually taken is of great importance Local treatment is carried out very gently, as it is considered that the less the parts are disturbed the better In those cases where there is much laceration of the soft parts or the lochia are offensive vaginal lavage with liq sod chlorinatæ ℥ii in one pint of water is carried out, and later on those cases showing signs of localised peritonitis are given intra-uterine injections of glycerine, as advocated by Remington Hobbs The patients are kept in the Fowler position to aid drainage, and in some cases liq extract of ergot is given by mouth to try to stimulate the uterus General treatment consists chiefly of good nursing and suitable nourishment, and great stress is laid upon getting the patient to sleep, sedatives being used without hesitation if necessary In those cases where a positive blood culture is obtained, injection of novarsenobillon in small doses (0 3 g) is being tried, and in a few cases intravenous injection of perchloride of mercury (gr 1/16–gr 1/32) and mercurochrome 50 mg has been tried, but up to date no definite conclusions can be drawn, but it is to this line of treatment that special notice is being given, as it is felt that in those cases where there is infection of the blood stream it is the most likely to effect a cure.

It seems possible, says Mr Wyatt, to divide the cases of puerperal sepsis into four classes —

I An infection of the uterus which remains localised to that organ

II An infection of the uterus which spreads via the Fallopian tubes and produces either a localised or a general peritonitis

III An infection of the uterus which spreads to the pelvic cellular tissue

IV A general infection of the blood stream

It is seldom possible at the onset of the disease to decide which class each case will fall into, but roughly in. I The pulse is practically never raised above 120 and within two or four days the temperature fall II The temperature remains up for many days in some cases for weeks, the pulse varies, but, unless the peritonitis is general, is again seldom above 120 There is pain over the lower abdomen, and, on bimanual examination, evidence of inflammation around the uterus, especially in the pouch of Douglas III Th is usually of late onset, tenth to fourteenth day of puerperium, although there is usually evidence of the presence of some sepsis in the earlier days, which apparently subsides and then flares up again and on bimanual examination, the cellular tissue at the sides and in front of the uterus is found to be involved IV In these cases the pulse appears to be the best guide and if it remains above 130 for 24 hours it strongly suggests a general infection

Allotting the 52 cases under these four headings, Mr Wyatt reports —

I —Thirty-one came under Class I local uterine infection. All recovered In the majority of the cases the temperature and pulse settled within a few days, and in six only continued for more than seven days In 21 of the cases intra-uterine cultures were taken In 14 hæmolytic streptococci were present In seven, other organisms—non-hæmolytic streptococci, *B proteus*, diphtheroids *B coli* The cases in which no swab was taken settled down within 24 hours of admission

II —Eleven came under Class II spread of infection to the peritoneal cavity Of these three with general peritonitis died No organisms were found in the blood, but in one in which uterine culture was taken hæmolytic streptococci were present Eight with pelvic peritonitis and salpingitis recovered In four of these hæmolytic streptococci were found in the uterus, and in four, other organisms—diphtheroids, &c One of these cases was later operated upon elsewhere and a pyosalpinx removed

III —Two with venous infection, both died One had a femoral thrombosis One had a pulmonary embolism. Hæmolytic streptococci were found in the uterine culture of both cases The patient with the femoral thrombosis also had probably a general infection, although the blood cultures were negative

IV —Seven under the heading of Class IV—viz., septicæmia In six hæmolytic streptococci in blood In one *Staphylococcus aureus* in blood Of these, four died and three recovered In all of them either novarsenobillon in doses of 0 3-0 9 g, or hydrarg perchlor gr 1/32 1/10, or mercurochrome 50 mg were given

In the septicæmic cases that recovered the infection appeared to be not severe, and Mr Wyatt suggests that the virulence of the infecting organisms varies considerably in different cases Attempts are being made to confirm this, as there is no doubt that with regard to the most prevalent organism, the hæmolytic streptococcus, this may be found in the vagina before delivery and yet perfectly normal puerperia supervene

Detailed reports by Dr R Swyer of two interesting cases of puerperal fever are appended

The Post-Encephalitis Unit

Dr S A Kinnier Wilson, consulting neurologist to the Board, reports on the initiation of the post-encephalitis unit opened at the Northern Hospital, Winchmore Hill, in the autumn of last year under the temporary charge of Dr Thomas Lindsay, lent from the Mental Hospitals Service The unit occupies four pavilions of 25 beds each, two being for boys and two for girls, these are now fully occupied, and there is a waiting list for admission The purpose of the unit is to observe and treat the after effects, physical and mental, of children who have had an attack of lethargic or epidemic encephalitis—so called "sleepy sickness" From the outset it was decided that no clear-cut differentiation could be drawn between cases exhibiting nervous and those showing mental symptoms A number of children now in the unit show nervous disabilities with no mental or behaviouristic defects others are perfectly well physically although their behaviour is abnormal. In order to make the numbers complete as quickly

---

[1] The Lancet, August 21st, p 392

In consequence of a report by the Minister of Agriculture, the price of bread in Paris will be lowered by several sous per kilo An inexplicable rise in the price of milk has been proved unlawful. and the dairy associations responsible for the advance will be prosecuted

Dr Ménard, radiological chief at the Hôpital Cochin, died on August 7th after a long struggle against the effects of X rays His right hand had to be amputated in 1908, his face was attacked in 1917. and his left eye removed in 1925. Notwithstanding these grave complications, Menard continued to work valiantly to the last. Gaston Danne director of the radiological laboratory at Gif, who has made important inventions of radium tubes, electrometers, electroscopes, and other apparatus. has also joined the ranks of those whose devotion to radiology has rewarded them so sadly. Both these victims to their duty have been cited to the Order of the Nation.

Madame Curie, who left France about the middle of July, is delivering a series of lectures in Brazil on radium

The fiftieth anniversary of the Societe de Medecine Publique will be celebrated during the latter half of October, 1927, in connexion with the Fourteenth French Congress on Hygiene Prof. T. Madsen. of Copenhagen, will deliver the principal address. Particulars may be had from Dr. Dujarric de la Riviere, Institut Pasteur, 25 rue Dutot, Paris

The Office National des Recherches et Inventions is opening a competition for devices to remove from the air solid particles derived from smoke. dust, and gas combustion Inventors who propose to compete should enter their names before Oct. 1st. Satisfactory tests are required, and should be completed by Jan. 1st, 1927; the official tests will not begin before July 1st, 1927.

A post-graduate course in Gastro-intestinal Diseases will be held at the Hotel Dieu, Paris, from Sept 13th to 27th For details apply to the Secrétariat, Faculte de Medecine, 12 rue de l'École de Medecine

IRELAND

(From our own Correspondent)

Census of the Irish Free State

The preliminary report on the Census of the Irish Free State, which was taken on the night of April 18th–19th last, has recently been published, and will disappoint those who hoped to see some check to the depopulation of Ireland which has now been progressive since 1841 Two facts emerge as characteristic of the movement of population in Ireland as a whole—namely, the decrease of population, and the increase of the larger towns Since 1911, the last census year, the population of Ireland has decreased from 4,390 219 to 4 229,124—a decrease of 161,095 or 3 7 per cent This decrease is the balance of a decrease of 5 3 per cent in the area of the Irish Free State and an increase of 0 5 per cent in the area of Northern Ireland The increase in Northern Ireland is symbolic of the increase in the population of the larger towns coincident with a decrease in the rural areas The density of population in the Free State is less than half that in Northern Ireland—112 and 240 persons to the square mile respectively The density in England and Wales is 649 and in Scotland 161. No less than 63 2 per cent of the population of the Free State live in "country districts," that is to say, outside towns or villages of 200 or more inhabitants The progressive depopulation of the country districts as compared with the growth of Dublin and its suburbs is shown by the following figures Since 1841 the "country districts" (as defined above) have lost 64 4 per cent of their population villages of from 200 to 500 inhabitants have lost 49 1 per cent; towns of 500 to 2000, 13 per cent; of 2000 to 5000 33 3 per cent.; of 5000 to 10,000, 25 per cent.; towns over 10 000 (other than the metropolitan area), 13 per cent.; while Dublin and the four adjoining suburban districts have gained 47 per cent. The emigration rate, which had been decreasing gradually from 1881 to 1911, now shows a slight rise. being 8 8 per 1000 persons per year as against 8 2 for the years 1901–11. The birth-rate and the death-rate both continue to decline. The birth-rate is now 21 1 per 1000 persons. and the death-rate 16 per 1000.

In a table of 24 European countries Ireland shows by far the highest proportion of its natives living overseas. Thus the Irish living overseas bear to those at home the proportion of 30 5 per cent Nearest to this comes Norway with 14 8 per cent, and then Scotland with 14·1 per cent. These percentages do not take account of intro-European migration. Since 1871 there has been a steady decline in the ratio of females to males in Ireland, the ratio at present being 999 to 1000. The figure is lowest in the most rural areas, in the three counties of Ulster which are in the Free State being as low as 939. and in Connaught 944. On the other hand, in Northern Ireland there are 1066 females to each 1000 males

Centenary of the Coombe Hospital.

The Coombe Maternity Hospital, Dublin, was founded in 1826, and therefore is now completing its hundredth year. An interesting celebration has been arranged and will be held from Sept. 14th to 17th. Several famous obstetricians and gynæcologists have been invited to visit Dublin, and the forenoon of each day will be devoted to the discussion of some subject of obstetric or gynæcological interest. Sir William J. Smyly, a past Master of the Rotunda Hospital, will preside at the meetings. A discussion on Obstetrical Teaching in Sweden will be opened by Prof Essen Möller, of Lund, and one on Eclampsia by Prof. Hinselmann, of Altona. A large number of other papers will be read, and among those taking part will be Prof Couvelaire and Prof Faure (Paris), Prof Munro Kerr (Glasgow), Mr. Eardley Holland (London), Prof. Werner (Vienna), Mr. A Donald (Manchester), Prof. R W. Johnstone (Edinburgh), and Prof B Whitehouse (Birmingham) The afternoons and evenings will be occupied with various social functions, the opening ceremony being an evening reception in the Royal College of Surgeons, given by the governors of the Coombe Hospital, and the closing function a garden party at the Royal Zoological Society

WOMEN'S MEDICAL SERVICE FOR INDIA

Among careers open to medical women abroad the Women's Medical Service for India deserves honourable mention This service is open to fully qualified medical women of British or Indian nationality and with the present amount of Government subsidy the number of medical officers is limited to 44 Medical women proceeding to India to join the Women's Medical Service receive a sufficient sum for a first-class passage to India On landing they are posted to one of the larger women's hospitals to gain Indian experience and to learn the language During this period (from six months to two years) private practice is not allowed For a further period they are appointed to act temporarily for medical women on furlough, during which time private practice is allowed They are then definitely appointed to the charge of hospitals Private practice is always allowed after the first two years, provided it does not interfere with official duties. The only exception is in administrative or educational posts, when an allowance in lieu of practice is given The amount obtained from practice varies according to the station but in most cases it forms a fair addition to the salary, varying from £150 to £1000 a year.

Excellent opportunities for surgery—especially gynæcological—are found in the Women's Medical Service To those who are not keen surgeons oppormade Even when nodules are discovered in the muscles their cause may be mistaken The most reliable method of diagnosis—microscopical examination of an excised nodule—is hardly feasible in patients who are only slightly affected Examination of the blood for eosinophilia is very useful, it is easily done, the patients do not mind it, and it should never be omitted when there is any suspicion of trichinosis Probably the people of the countryside are often affected without knowing it, for smoked (not boiled) pork is a very common article of diet in rural districts, especially in the woodlands The Ministry has made arrangements for free pathological examination of any specimens sent up to Vienna with a tentative diagnosis of trichinosis

A New Surgical Disinfectant

At a recent meeting of the Surgical Society of Vienna Prof Paul Albrecht reported on the use of a new disinfectant for dressing wounds During the war the chief disinfectant in use amongst the Allies was chlorine, whilst iodine was preferred by surgeons of the Central Powers In 1921 Prof Ulzer prepared a solution containing both these germicides and this he has now improved by the addition of fluoric acid This aqueous solution is in use at the surgical station of Prof Albrecht, and has been found very satisfactory After a phlegmonous abscess is opened the wound is gently packed with gauze soaked in the solution, and a wet dressing applied This is repeated every three hours and the decursus morbi is very good It has also been used in surgical tuberculosis and in treating accidental wounds, mostly dirty, inflammation rapidly subsided and injuries healed quickly For the last year or so, furthermore, this "halogen solution" has been employed as an adjuvant in so-called aseptic operations, in order to destroy or make innocuous the white staphylococcus Albrecht has used it in 14 strumectomies, 19 laparotomies, and 14 operations for cancer of the breast He claims that it does not injure the tissues even when in contact with them for a long time The tuberculous glands were treated without drainage, the wounds being closed at once after swabbing them out well with the solution In only three of the cases of mammary cancer was drainage employed, and hæmorrhage or serous exudate under the skin was always sterile, most remarkable was the rapid apposition of the skin laps to the walls of the thorax Formation of very tough scar tissue is the rule after the use of the halogen solution, and it seems as though the solution definitely promotes the formation of connective tissue The theoretical explanation of this process is as yet unknown

---

PARIS

(FROM OUR OWN CORRESPONDENTS)

Arterial Hypertension

Dr Mattei and Dr Dias-Cavaroni, of Marseilles, have been studying the effects of various drugs upon arterial hypertension, and recently gave in the *Presse Médicale* an account of their observations on sodium nitrite, nitroglycerine benzyl benzoate, chloral, tincture of garlic, and mistletoe Sodium nitrite, they say, is generally useless, and may also be dangerous, the action of nitroglycerine is transitory and uncertain, and these two substances have the unfavourable effect of increasing the value of the oscillometric index without sensibly lowering arterial tension Benzyl benzoate and tincture of garlic have a very feeble and inconstant action on arterial hypertension, but mistletoe and chloral are found to be fairly satisfactory and regular in their action An aqueous extract of mistletoe, given by intramuscular injection, lowers the systolic pressure and also acts, rather later and with less regularity, on the diastolic pressure Chloral given by the mouth for several days causes definite lowering of systolic pressure with variations of the diastolic which, although appreciable, are slight. Even in favourable cases the action of mistletoe and chloral does not last more than about 10 days, and the best of these remedies appear to have a transient effect on hypertension, acting especially by reducing the raised systolic pressure which is often a sign of compensatory hypersystole Their effect is not wholly satisfactory unless at the same time a parallel reduction of the diastolic is caused by rest purgatives, diuretics, cardiac tonics, and suitable régime In practice it may be said that there are no such things as hypotensor remedies, though there is a treatment which reduces tension

Marriage Problems

The question of examination before marriage came up at a meeting of the International Eugenics Committee which met at Paris in July under the presidency of Major Leonard Darwin Dr George Schreiber, of Paris, explained the advantages of the Scandinavian system, which demands from candidates for marriage a medical certificate given by a doctor chosen by the interested parties, and other speakers described the customs in vogue in the United States Holland, and Belgium At the same conference Vignes and Apert, of Paris, discussed consanguinity in marriage They pointed out that in unions between first cousins there are only three pairs of grandparents instead of four, and that the pair which is common to the two cousins who wish to marry is the pair which it is most important to study from the point of view of heredity Prof Buchanan Smith, of Edinburgh, described his own observations on in-breeding amongst animals An important discussion followed these papers, the general impression seeming to be that consanguinity leads to fixation of good characteristics just as much as bad, and that it is important above all to search for hereditary familial diseases before giving sanction to marriage between relatives

Nickel and Cobalt in Diabetes

Two important communications have recently been made to the Académie des Sciences on the use of nickel and cobalt in the treatment of diabetes Subcutaneous injection, or even oral administration, of very small amounts of nickel and cobalt have led to benefit in some cases of diabetes, and sometimes there has even been complete suppression of sugar in the urine with disappearance of polyuria and thirst increased tolerance for glucose, and sometimes though not always, lowering of blood-sugar On the other hand, in certain conditions, such as infantile diabetes and diabetes associated with tuberculosis there seems to be no effect In six cases of diabetes with tuberculosis after several injections the glycosuria became worse, the blood-sugar was raised, and excretion of acetone bodies increased, the treatment had to be stopped With reservations, however, these remedies seem to have real usefulness

Inflammability of Artificial Silk

The manufacture of artificial silk is steadily increasing, but it has its dangers; the kind most common on the market has not been denitrified, and is explosive as well as inflammable A single spark is enough to cause a conflagration Two young people have recently been burnt through wearing mufflers made of silk which had not been denitrified When damages were asked for the Courts acquitted the manufacturers on the ground that the accidents had not been foreseen

Immunisation of the Newborn against Tetanus

Prof Roux has communicated to the Académie des Sciences the results of tests made by Nattan-Larrier, Ramon, and Grasset These tests show that newborn infants may be immunised against tetanus by means of the anatoxin, analogous to diphtheritic anatoxin worked out by Ramon Immunity may also be conferred before birth by giving injections of anatoxin to the prospective mother

In consequence of a report by the Minister of Agriculture, the price of bread in Paris will be lowered by several sous per kilo. An inexplicable rise in the price of milk has been proved unlawful, and the dairy associations responsible for the advance will be prosecuted.

Dr. Menard, radiological chief at the Hôpital Cochin, died on August 7th after a long struggle against the effects of X rays. His right hand had to be amputated in 1908, his face was attacked in 1917, and his left eye removed in 1925. Notwithstanding these grave complications, Menard continued to work valiantly to the last. Gaston Danne director of the radiological laboratory at Gif, who has made important inventions of radium tubes, electrometers, electroscopes and other apparatus has also joined the ranks of those whose devotion to radiology has rewarded them so sadly. Both these victims to their duty have been cited to the Order of the Nation.

Madame Curie, who left France about the middle of July, is delivering a series of lectures in Brazil on radium.

The fiftieth anniversary of the Societé de Médecine Publique will be celebrated during the latter half of October, 1927, in connexion with the Fourteenth French Congress on Hygiene. Prof. T. Madsen, of Copenhagen, will deliver the principal address. Particulars may be had from Dr. Dujarric de la Riviere, Institut Pasteur, 25 rue Dutot, Paris.

The Office National des Recherches et Inventions is opening a competition for devices to remove from the air solid particles derived from smoke, dust and gas combustion. Inventors who propose to compete should enter their names before Oct. 1st. Satisfactory tests are required, and should be completed by Jan. 1st, 1927; the official tests will not begin before July 1st, 1927.

A post-graduate course in Gastro-intestinal Diseases will be held at the Hotel Dieu, Paris, from Sept. 13th to 27th. For details apply to the Secretariat, Faculte de Medecine, 12 rue de l'École de Médecine.

IRELAND

(FROM OUR OWN CORRESPONDENT.)

Census of the Irish Free State

THE preliminary report on the Census of the Irish Free State, which was taken on the night of April 18th–19th last has recently been published, and will disappoint those who hoped to see some check to the depopulation of Ireland which has now been progressive since 1841. Two facts emerge as characteristic of the movement of population in Ireland as a whole—namely, the decrease of population, and the increase of the larger towns. Since 1911, the last census year, the population of Ireland has decreased from 4,390,219 to 4,229,124—a decrease of 161,095 or 3·7 per cent. This decrease is the balance of a decrease of 5·3 per cent. in the area of the Irish Free State and an increase of 0·5 per cent. in the area of Northern Ireland. The increase in Northern Ireland is symbolic of the increase in the population of the larger towns coincident with a decrease in the rural areas. The density of population in the Free State is less than half that in Northern Ireland—112 and 240 persons to the square mile respectively. The density in England and Wales is 649 and in Scotland 161. No less than 63·2 per cent. of the population of the Free State live in "country districts," that is to say, outside towns or villages of 200 or more inhabitants. The progressive depopulation of the country districts as compared with the growth of Dublin and its suburbs is shown by the following figures. Since 1841 the "country districts" (as defined above) have lost 64·1 per cent. of their population; villages of from 200 to 500 inhabitants have lost 49·1 per cent.; towns of 500 to 2000, 43 per cent.; of 2000 to 5000, 33·3 per cent.; of 5000 to 10,000, 25 per cent.; towns over 10,000 (other than the metropolitan area), 13 per cent.; while Dublin and the four adjoining suburban districts have gained 47 per cent. The emigration rate, which had been decreasing gradually from 1881 to 1911, now shows a slight rise, being 8·8 per 1000 persons per year as against 8·2 for the years 1901–11. The birth-rate and the death-rate both continue to decline. The birth-rate is now 21·1 per 1000 persons and the death-rate 16 per 1000.

In a table of 24 European countries Ireland shows by far the highest proportion of its natives living overseas. Thus the Irish living overseas bear to those at home the proportion of 30·5 per cent. Nearest to this comes Norway with 14·8 per cent., and then Scotland with 14·1 per cent. These percentages do not take account of intro-European migration. Since 1871 there has been a steady decline in the ratio of females to males in Ireland, the ratio at present being 999 to 1000. The figure is lowest in the most rural areas, in the three counties of Ulster which are in the Free State being as low as 939, and in Connaught 944. On the other hand, in Northern Ireland there are 1066 females to each 1000 males.

Centenary of the Coombe Hospital

The Coombe Maternity Hospital, Dublin, was founded in 1826, and therefore is now completing its hundredth year. An interesting celebration has been arranged and will be held from Sept. 14th to 17th. Several famous obstetricians and gynæcologists have been invited to visit Dublin, and the forenoon of each day will be devoted to the discussion of some subject of obstetric or gynæcological interest. Sir William J. Smyly, a past Master of the Rotunda Hospital, will preside at the meetings. A discussion on Obstetrical Teaching in Sweden will be opened by Prof. Essen Möller, of Lund, and one on Eclampsia by Prof. Hinselmann, of Altona. A large number of other papers will be read, and among those taking part will be Prof. Couvelaire and Prof. Faure (Paris), Prof. Munro Kerr (Glasgow), Mr. Eardley Holland (London), Prof. Werner (Vienna), Mr. A. Donald (Manchester), Prof. R. W. Johnstone (Edinburgh), and Prof. B. Whitehouse (Birmingham). The afternoons and evenings will be occupied with various social functions, the opening ceremony being an evening reception in the Royal College of Surgeons, given by the governors of the Coombe Hospital, and the closing function a garden party at the Royal Zoological Society.

WOMEN'S MEDICAL SERVICE FOR INDIA

AMONG careers open to medical women abroad the Women's Medical Service for India deserves honourable mention. This service is open to fully qualified medical women of British or Indian nationality, and with the present amount of Government subsidy the number of medical officers is limited to 44. Medical women proceeding to India to join the Women's Medical Service receive a sufficient sum for a first-class passage to India. On landing they are posted to one of the larger women's hospitals to gain Indian experience and to learn the language. During this period (from six months to two years) private practice is not allowed. For a further period they are appointed to act temporarily for medical women on furlough, during which time private practice is allowed. They are then definitely appointed to the charge of hospitals. Private practice is always allowed after the first two years, provided it does not interfere with official duties. The only exception is in administrative or educational posts, when an allowance in lieu of practice is given. The amount obtained from practice varies according to the station, but in most cases it forms a fair addition to the salary, varying from £150 to £1000 a year.

Excellent opportunities for surgery—especially gynæcological—are found in the Women's Medical Service. To those who are not keen surgeons oppormade Even when nodules are discovered in the muscles their cause may be mistaken The most reliable method of diagnosis—microscopical examination of an excised nodule—is hardly feasible in patients who are only slightly affected Examination of the blood for eosinophilia is very useful, it is easily done, the patients do not mind it, and it should never be omitted when there is any suspicion of trichinosis Probably the people of the countryside are often affected without knowing it, for smoked (not boiled) pork is a very common article of diet in rural districts, especially in the woodlands The Ministry has made arrangements for free pathological examination of any specimens sent up to Vienna with a tentative diagnosis of trichinosis

A New Surgical Disinfectant

At a recent meeting of the Surgical Society of Vienna Prof Paul Albrecht reported on the use of a new disinfectant for dressing wounds During the war the chief disinfectant in use amongst the Allies was chlorine, whilst iodine was preferred by surgeons of the Central Powers In 1921 Prof Ulzer prepared a solution containing both these germicides and this he has now improved by the addition of fluoric acid This aqueous solution is in use at the surgical station of Prof Albrecht, and has been found very satisfactory After a phlegmonous abscess is opened the wound is gently packed with gauze soaked in the solution, and a wet dressing applied This is repeated every three hours, and the decursus morbi is very good It has also been used in surgical tuberculosis and in treating accidental wounds, mostly dirty, inflammation rapidly subsided and injuries healed quickly For the last year or so, furthermore, this "halogen solution" has been employed as an adjuvant in so-called aseptic operations, in order to destroy or make innocuous the white staphylococcus Albrecht has used it in 14 strumectomies, 19 laparotomies, and 14 operations for cancer of the breast He claims that it does not injure the tissues even when in contact with them for a long time The tuberculous glands were treated without drainage, the wounds being closed at once after swabbing them out well with the solution In only three of the cases of mammary cancer was drainage employed, and hæmorrhage or serous exudate under the skin was always sterile, most remarkable was the rapid apposition of the skin laps to the walls of the thorax Formation of very tough scar tissue is the rule after the use of the halogen solution, and it seems as though the solution definitely promotes the formation of connective tissue The theoretical explanation of this process is as yet unknown

---

PARIS

(FROM OUR OWN CORRESPONDENTS)

Arterial Hypertension

Dr Mattei and Dr Dias-Cavaroni, of Marseilles, have been studying the effects of various drugs upon arterial hypertension, and recently gave in the *Presse Medicale* an account of their observations on sodium nitrite, nitroglycerine benzyl benzoate, chloral, tincture of garlic, and mistletoe Sodium nitrite, they say, is generally useless, and may also be dangerous ; the action of nitroglycerine is transitory and uncertain, and these two substances have the unfavourable effect of increasing the value of the oscillometric index without sensibly lowering arterial tension Benzyl benzoate and tincture of garlic have a very feeble and inconstant action on arterial hypertension, but mistletoe and chloral are found to be fairly satisfactory and regular in their action An aqueous extract of mistletoe, given by intramuscular injection, lowers the systolic pressure and also acts, rather later and with less regularity, on the diastolic pressure Chloral given by the mouth for several days causes definite lowering of systolic pressure with variations of the diastolic which, although appreciable, are slight Even in favourable cases the action of mistletoe and chloral does not last more than about 10 days, and the best of these remedies appear to have a transient effect on hypertension, acting especially by reducing the raised systolic pressure which is often a sign of compensatory hypersystole Their effect is not wholly satisfactory unless at the same time a parallel reduction of the diastolic is caused by rest purgatives, diuretics, cardiac tonics, and suitable régime In practice it may be said that there are no such things as hypotensor remedies, though there is a treatment which reduces tension

Marriage Problems

The question of examination before marriage came up at a meeting of the International Eugenics Committee which met at Paris in July under the presidency of Major Leonard Darwin. Dr George Schreiber, of Paris, explained the advantages of the Scandinavian system, which demands from candidates for marriage a medical certificate given by a doctor chosen by the interested parties, and other speakers described the customs in vogue in the United States Holland, and Belgium At the same conference Vignes and Apert, of Paris, discussed consanguinity in marriage They pointed out that in unions between first cousins there are only three pairs of grandparents instead of four, and that the pair which is common to the two cousins who wish to marry is the pair which it is most important to study from the point of view of heredity Prof Buchanan Smith of Edinburgh, described his own observations on in-breeding amongst animals An important discussion followed these papers, the general impression seeming to be that consanguinity leads to fixation of good characteristics just as much as bad, and that it is important above all to search for hereditary familial diseases before giving sanction to marriage between relatives

Nickel and Cobalt in Diabetes

Two important communications have recently been made to the Académie des Sciences on the use of nickel and cobalt in the treatment of diabetes Subcutaneous injection, or even oral administration, of very small amounts of nickel and cobalt have led to benefit in some cases of diabetes, and sometimes there has even been complete suppression of sugar in the urine with disappearance of polyuria and thirst, increased tolerance for glucose, and sometimes though not always, lowering of blood-sugar On the other hand, in certain conditions, such as infantile diabetes and diabetes associated with tuberculosis there seems to be no effect In six cases of diabetes with tuberculosis after several injections the glycosuria became worse, the blood-sugar was raised, and excretion of acetone bodies increased · the treatment had to be stopped With reservations, however, these remedies seem to have real usefulness

Inflammability of Artificial Silk

The manufacture of artificial silk is steadily increasing, but it has its dangers; the kind most common on the market has not been denitrified, and is explosive as well as inflammable A single spark is enough to cause a conflagration Two young people have recently been burnt through wearing mufflers made of silk which had not been denitrified When damages were asked for the Courts acquitted the manufacturers on the ground that the accidents had not been foreseen

Immunisation of the Newborn against Tetanus

Prof Roux has communicated to the Académie des Sciences the results of tests made by Nattan-Larrier, Ramon, and Grasset These tests show that newborn infants may be immunised against tetanus by means of the anatoxin, analogous to diphtheritic anatoxin worked out by Ramon Immunity may also be conferred before birth by giving injections of anatoxin to the prospective mother

Public Health Services.

INCAPACITY FOR WORK IN AN INDUSTRIAL CRISIS

THE growing distress among all classes of the working community in the coal-fields has given rise to some difficult problems in the assignment of relief. A few weeks ago the Ministry of Health issued a memorandum to guide insurance practitioners in interpreting the term "incapable of work," on which health benefit depends The fact of an insured person being unable on account of his health to follow his ordinary occupation is not in itself sufficient to render him "incapable of work" within the meaning of the Acts. yet he would properly be so regarded if he has early prospect of resuming his former work This fairly simple proposition becomes vastly complicated when as now. opportunity to resume former work is indefinitely delayed · according to the Ministry situations may then arise in which an insured person should not be certified as "incapable of work" unless in the doctor's opinion, he is physically unable to perform any other suitable kind of remunerative work. Much turns on this fine distinction, for boards of guardians are entitled to refuse payment of out-relief to single men concerned in the coal stoppage unless they are so reduced by privation as to be physically incapable of work. In a Northumbrian area where the guardians of the poor are themselves in financial straits, three of the relieving officers stated that they could only bring themselves within the limits of the law in the relief of single men by asking them to produce medical certificates proving physical inability to work through destitution" In this case the guardians seem to have shifted their responsibility upon the relieving officers who in their turn attempted to pass on the onus of decision to the insurance practitioners A later report states that for thus delegating their responsibility the relieving officers were suspended—leaving unsolved the problem presented for solution It must be admitted that the claim of insured persons to sickness benefit or relief based upon certain Acts of Parliament is interpreted by different authorities in different ways The duty of turning down an application for relief is essentially unpopular, with the natural result that the task is relegated whenever possible to the medical man In the absence of prescribed criteria every practitioner has to set his own standard of fitness for the healthy labourer. his judgment being tinged to a greater or smaller extent by humanity Obviously the onus of decision must not be laid on professional persons. A certificate of disability given by a practitioner conscientiously after due examination embodies no more than his considered opinion on the medical evidence and this must be taken in conjunction with all the circumstances of the case on which his opinion is apposite The professional man should be assessor. not arbiter Physical fitness is notoriously difficult to define The factors are numerous and varied and the standard is at best a rough average for fit men vary widely in physique and endurance The base-line must also be adjusted for the particular occupation The miner requires more than an average physique for his arduous work, and his physique is quickly affected by restricted diet If the sole responsibility for decision is to be put on the insurance practitioner provision should at least be made for special investigation such as determination of the applicant's basal metabolism The ergometer is already used in many pits to determine the fitness of men for work at the coal face in order to safeguard the employer It would be logical to adopt similar means in the interest of the men to determine their [illegible] to seek benefit or relief

PORT SANITARY AUTHORITIES.

Dr. W. Allen Daley reports for the first time in 1925 to the *Hull and Goole Port Sanitary Authority*. which supervises 235 acres of docks visited during the year by 9083 vessels A bacteriological laboratory has now been fitted up for the assistant medical officer to examine water from ships and rats suspected of plague If a ship reports sickness or comes from an infected port. she is boarded by the medical officer as she enters dock: infectious cases are then removed to the City Hospital Hull or to the Isolation Hospital Goole, the shipmaster guaranteeing a payment of 7*s* 6*d* per day. One ship that arrived had lost a man from plague two months before at Lagos: the ship had been fumigated then and there. and at Hull 164 rats were trapped. of which 52 were examined. but none was found infected and no fresh human case appeared Another ship reported on arrival a death from yellow fever three weeks earlier. also at Lagos: she was fumigated (no rats were killed) and no other case developed. From the same ship seven cases of malaria. one of them the ship's surgeon were removed to the City Hospital. all being discharged in ten days. Two cases of typhoid were removed from a ship from the West Indies, both recovered. Another ship mentioned had sent seven cases to hospital abroad: so typhoid is still a menace at sea Seven cases of pulmonary tuberculosis were sent to hospitals two being passengers Of the cases of illness reported on arrival, one-third (45) were cases of venereal disease. 16 were malarial. and 10 were acute bronchitis The disinfecting station has a shelter attached in which crews can be accommodated during fumigation of their ships Rats trapped in ships numbered 5286 5239 of them black. only 47 brown an average of 25 per ship; rats killed in the fumigation of ships averaged seven but most fumigations were blank. The total of rats destroyed on ships and about the port was 12 740 of the 698 examined none was plague-infected. There are venereal disease clinics at Hull Royal Infirmary and at Bartholomew Hospital Goole and the place and hours of the clinics are notified to shipmasters and patients in nine-language leaflets Samples of drinking water were taken from 28 ships and seven showed colon bacillus, those vessels were told to clean and cement-wash their tanks and the tanks were inspected before fresh water was given them The water barges of the port are inspected daily Considerable quantities of imported food were condemned—of potatoes 100 tons onions 350, plums 50 all condemned vegetables were sent to the destructor: the animal food found unfit including 419 bags of mussels was made into manure. Shell-fish come mostly from the Zuider Zee (which is not as deep as a popular song asserts) and are officially certified to have been gathered from water free from sewage pollution Difficulty has been found in securing that railwaymen who handle fresh meat should wear washable caps and overalls, in accordance with the new regulations Insanitary defects were found in 7 per cent of the English ships inspected. but in only 5 per cent of the total of 8134 vessels Water-closets were choked on 109 ships side ports defective on 139, decks overhead leaking on 188 fresh water tanks dirty on 157 stoves and their fittings were defective on 145 Only 3702 beds were destroyed fewer than in the preceding year. Galley refuse on deck caused nuisance on 176 ships In accordance with the United States Quarantine Regulations 28 ships were fumigated with sulphur and, complying with another U.S. Order six lighters were disinfected for the transport of cattle feeding stuffs from mills to vessels for shipment to the United States (an export of some £800 000 in this year) Of 7813 aliens who arrived 3924 were transmigrants of whom 40 verminous were cleansed and 217 certified as suffering from trachoma favus or other infections The remainder non-transmigrants seem to have all been quite fit

Dr W F Dearden in his twentieth annual report to the *Manchester Port Sanitary Authority*, mentions tunities are likely to open in the future in connexion with maternity and child welfare; medical women with administrative ability are also needed for the inspection of women's hospitals and other medical institutions

Rates of pay are as follows —

Years of service	Overseas allowance per mensem	Salary per mensem	English equivalent* per annum
1 to 3	Rs 100	Rs 450	£440
4 to 6	,,	Rs 500	£480
7 to 9	,,	Rs 550	£520
10 to 12	,,	Rs 600	£560
13 to 15	Rs 150	Rs 650	£600
16 to 18	,,	Rs 700	£640
19 to 21	,,	Rs 750	£680
22 to 24	,,	Rs 800	£720
over 24	,,	Rs 850	£760

* At rupee value 1*s* 4*d*

Furnished quarters are provided, representing an additional Rs 150 per mensem

The cost of living in India is much higher than formerly, but it should be possible for a medical woman (with house provided) to meet actual household expenses for about Rs 200 per mensem, leaving the remainder of her salary for dress and personal expenses To this must be added the necessary saving to meet additional expense for furlough and leave spent in the hills

One month's privilege leave on full pay is granted each year. Furlough on half-pay at the rate of two months for every year of service is granted after every three years Study-leave on two-thirds pay is granted to the extent of 12 months in the total service There is a provident fund to which members of the service contribute 10 per cent of their pay The service contributes another 10 per cent which accumulates at interest and is repaid on retirement

Admission to the service is made by selection Candidates in the United Kingdom should apply to the Hon Secretary, United Kingdom Branch of the Countess of Dufferin's Fund, care of Major-General J. B Smith, India Office, Whitehall, London

MEDICINE AND THE LAW

Coroner's Duties under the Petroleum Act

IN the case of death from certain kinds of accidents a coroner is obliged by statute to adjourn the inquest unless a departmental representative is present to watch the proceedings Parliament made provision of this nature in the Metalliferous Mines Regulation Act of 1872, the Explosives Act of 1875, and the Coal Mines Act of 1911 The relevant part of the Explosives Act (Section 65) has now been applied with verbal alterations to deaths from accidents due to petroleum spirit, being re-enacted for this purpose as part of the Third Schedule to the new Petroleum Act which received the Royal Assent on August 4th last The coroner may, before adjourning take evidence of identification and order interment of the body If the accident has not involved the death of more than one person, and if the coroner has given the Home Office 48 hours' notice of the time and place of holding the inquest, he need not adjourn the proceedings if the majority of the jury think adjournment unnecessary If no representative of the Home Office is present and if there is evidence that the accident was caused by neglect or by a defect in connexion with any premises licensed under the Petroleum Act, or any carriage, ship, or boat in which petroleum spirit has been carried, the coroner must send the Home Office a written note of the neglect or defect Inspectors or persons employed by the Home Office are to have liberty to examine witnesses subject to the orders of the coroner upon points of law

A Death from Tetanus

Two boys were playing with a pistol at Leeds, they had a blank cartridge and some pellets, one of the boys let the trigger slip and three pellets entered the palm of his hand They then threw the pistol away and the injured boy told his parents he had split his hand by falling on a stone Two pellets were extracted by the boy's friends, but one remained in the hand The boy became ill, was removed to the Leeds Infirmary, and died of lockjaw The other boy, who was 15 years of age, was condemned by the coroner for having kept silence as to the cause of the accident "For a boy of your age to stand by and see a friend of yours die, when by telling the truth you might have saved his life, is appalling, and you deserve all the bad things that can be said against you" Coroners are seldom accurately reported, and in any case these remarks of the Leeds City Coroner presumably referred more to the moral than the medical aspects of the case Tetanus would not be suspected from the fact that the injury was due to a pistol shot, in fact, the false story of the fall upon a dirty stone would have been more likely to suggest tetanus infection.

Dangerous Drugs Withdrawal of Authorisation

The Home Secretary gives notice that he has withdrawn from Mr John Symington Stewart, M B, Ch B, of 252, Morrison-street, Edinburgh, the authorisations granted by the Regulations made under the Dangerous Drugs Act, 1920, to duly qualified medical practitioners to be in possession of and supply raw opium and drugs to which Part III of the Act of 1920 applies, and has also directed that the exception in Regulation 4 of the Dangerous Drugs Regulations, 1921, which permits dangerous drugs to be supplied on a prescription given by a duly qualified medical practitioner, shall not apply in respect of prescriptions given by Dr Stewart Any person supplying him with raw opium or any of the drugs to which Part III of the Act applies, and any person supplying the drugs on a prescription signed by Dr Stewart will be committing an offence against the Act

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED AUGUST 21st, 1926

Notifications —The following cases of infectious disease were notified during the week —Small-pox, 62 (last week 71), scarlet fever, 1163, diphtheria, 711, enteric fever, 54, pneumonia, 356, puerperal fever, 46, cerebro-spinal fever, 8, acute poliomyelitis 47, acute polio encephalitis, 6, encephalitis lethargica, 39, continued fever, 2, dysentery, 10, ophthalmia neonatorum, 114 There were no cases of cholera, plague, or typhus fever notified during the week

The notifications of acute poliomyelitis, which have been increasing in number steadily for several weeks, were received from all parts of the country Three were notified from the County of London, 4 from Chester (Crewe 2, Nantwich 1, Winsford 1), 1 from Devon, 6 from Essex (Grays Thurrock 5, Ilford 1), 6 from Kent (Gillingham 1, Queenborough 2, Sheerness 3), 6 from Lancaster (Blackpool 1, Manchester 1, Southport 1, Lancaster 2, Stretford 1), 6 from Leicester (Leicester 2, Barrow-upon Soar 3 Hinckley 1) 5 from Middlesex (Edmonton 1, Enfield 2, Hornsey 1, Willesden 1), 1 from Nottingham (Nottingham), 2 from Southampton (Portsmouth 1, Southampton 1) 2 from Stafford (Burton-upon-Trent 1, Stafford R D 1) 1 from Warwick (Birmingham), 1 from Yorks West Riding (Ripon R D), 3 from Glamorgan (Cardiff 1, Porthcawl 1, Rhondda 1)

Deaths —In the aggregate of great towns including London, there were no deaths from small pox none from enteric fever, 12 (0) from measles, 6 (1) from scarlet fever, 22 (2) from whooping-cough, 28 (10) from diphtheria 100 (18) from diarrhœa and enteritis under two years of age, and 16 (3) from influenza The returns for diarrhœa and enteritis show a rise of 15 for the great towns and a drop of 1 for London, compared with the figures of the previous week The figures in parentheses are those for London itself

INTERNATIONAL POST-GRADUATE MEDICAL COURSE IN BERLIN —Courses organised jointly by the medical faculty of the Berlin University, the Kaiserin Friedrich Stiftung für das Aerztliche Fortbildungswesen and the assembly of academic lecturers will be held in Berlin from Oct 4th to 30th They will include a course of instruction covering the advance of medicine as a whole with special regard to recent therapeutics a course in urology, and a course devoted to special departments of medicine Further information may be obtained from Kaiserin Friedrich-Haus, Luisenplatz 2-4, Berlin, N W 6 given hypodermically in suitable cases. Thirty-four nurses hold the certificate of the M.P.A.

The *East Sussex County Mental Hospital* at Hellingly had 1183 patients in residence on March 31st, an increase of 13 on the previous year, although the admissions were reduced by 19. The overcrowding will be lessened when the new verandahs and additions to the nurses' home are completed. Like Staffordshire, Sussex has tried to persuade boards of guardians to accept aged chronic patients in workhouses; a number of males will probably be accommodated in this way, but no offer to take females has so far been received. The general health has been good; there was some influenza, and two nurses and two patients had scarlet fever, but there was no dysentery. The death-rate was 9.7 per cent. for males and 7.9 per cent. for females. A large number of successful operations were performed, and the visiting surgeon has attended in consultation. The dentist held 50 sessions with 652 attendances. All new patients are seen by him as soon as they are fit. There was a recovery-rate of 31.8 per cent. for males and 36.9 per cent. for females; the prognosis of 44 per cent. of the cases admitted was unfavourable, this number including many senile patients, ten epileptics, and ten general paralytics. Sixty of the 132 patients discharged were sent out on trial, and 26 of them were given an allowance. One hundred patients have parole. Unlike the Stafford Hospital, Hellingly finds an increase this year in cases where alcohol was an exciting factor, the figures being 27 per cent. in men and 9 per cent. in women. All new cases are tested for the Wassermann reaction and 13 general paralytics were treated during the year by induced malaria. Five were discharged much improved and appear to be keeping well. The medical superintendent considers that the results fully justify the treatment, although the Wassermann reaction of blood and cerebro-spinal fluid has remained positive. In future it is proposed to employ antisyphilitic treatment as well as malaria. A well-equipped operating theatre and nurses' infirmary were added towards the end of the year. The diet has been improved. About half the male patients and 16 per cent. of the women are usefully employed, and the appointment of an occupation officer has been discussed. The medical superintendent, while admitting the value of such an official, agrees with the Leicester superintendent in observing that "the persons most likely to influence the patients are the nurses . . . and every endeavour should be made to encourage the nurses to take a personal interest." The ophthalmic surgeon saw 308 cases during the year, mostly for fitting with glasses. The pathologist, in addition to routine work and 50 autopsies, investigated the question of dysentery and carriers and found that the cases in the hospital were nearly always due to *B. aertrycke* or the Salmonella group. The blood calcium was estimated and found to be normal in all cases examined. A series of estimations of blood cholesterin suggest a hypocholesterinæmia in dementia præcox patients. The nurses have gained excellent results in their examinations, but there is still great difficulty in getting enough women for the work. This institution constitutes a good example of what a modern mental hospital can be. The Princess Alice Hospital out-patient clinic at Eastbourne is attended by the medical superintendent, but still has the handicap of being without beds.

POST-GRADUATE COURSES IN VIENNA.—Every year the Medical Faculty of the University of Vienna has arranged courses of lectures in German on all branches of medicine with a view to giving qualified doctors an opportunity of keeping in touch with the latest developments of medical science. In addition to these courses, four times a year, international post-graduate courses will be held in February, June, September, and November, and are particularly intended for visitors from abroad. Particulars of the courses to be held in the academic year 1926–27 are available in the form of a pamphlet which can be obtained gratis from the secretary of the Post-Graduate Medical Courses, Schlösselgasse 22, Vienna VIII. Advice as to lodgings will also be given on application.

Correspondence.

"Audi alteram partem."

NOMENCLATURE OF ABNORMAL UTERINE HÆMORRHAGE

To the Editor of THE LANCET.

SIR,—I notice in your account of the discussion on the "Causes and Treatment of Uterine Hæmorrhage without Gross Physical Signs" in the Section of Obstetrics and Gynæcology at the British Medical Association meeting (THE LANCET, August 31st, pp. 382 et seq.), and in a leading article in the same issue, that attention is called to the terms proposed for use in descriptions of disorders of the menstrual flow, and to aphysiological uterine bleeding. As a teacher especially, this is a matter to which I have given much thought, for students are readily confused by terms that are not absolutely clear. For years I have held that our special subject requires going over with a tooth-comb in regard to words so much abused as "endometritis" and with an axe for the abolition of meaningless terms like "metrorrhagia."

In the discussion in question, my friend, Prof. Beckwith Whitehouse, propounded the terms "epimenorrhœa," "menostaxis," "menorrhagia," and "metrostaxis" to cover the requirements of description in respect of various abnormal uterine hæmorrhages—namely, too frequent, too prolonged, and too profuse menstrual bleeding, and aphysiological hæmorrhages respectively. During the discussion the President of the Section "welcomed the *new* terms" (italics mine), and in your leading article the writer approves of "the terms proposed by Prof. Beckwith Whitehouse."

I am sure it has been merely an oversight on the parts of all these gentlemen that ten years ago (Eden and Lockyer's "New System of Gynæcology") and in the 1919, and if not in an earlier, edition of my own "Principles of Gynæcology," I introduced and explained the terms "epimenorrhœa" and "epimenorrhagia." I see no reference is made to "epimenorrhagia." Further, I stated that the word metrorrhagia should be abolished, for it was nonsensical and was used to describe various types of uterine bleeding by different persons. I employed the old term "menorrhagia" to include too profuse and too prolonged menstrual bleeding. This is what the word means; moreover, the two phenomena are usually associated. "Menostaxis"—used in America I believe, but I am away from home and all references—is a very poor and ill-defined word; it is quite unnecessary so long as we use menorrhagia in its proper sense, and it is likely to be confused by students with "metrostaxis." I sincerely hope no attempt will be made to perpetuate this terminological anomaly.

Lastly, I advised the use of the word metrostaxis—also an old term never properly defined—in the sense in which, so far as I can judge, it is advocated by Prof. Whitehouse, except that I should have spoken of "uterine hæmorrhages independent of *menstruation*" rather than of the "menstrual cycle." I am afraid Prof. Fletcher Shaw missed the whole point of this term. However, I do not wish to go over the old ground in relation to the pathology of the various conditions. It has so often been done already.

It follows then that the only "new" term proposed is one introduced by myself ten years ago and constantly advocated and taught since that time. Likewise, with the exception of "menostaxis," which should be discarded, the other terms were "propounded" certainly very clearly by myself, and possibly by others also in the distant past, and in a similar manner to that now welcomed as new. Still, all this is as nothing in comparison with the importance of the proper words being used in a uniform and correct sense. I trust that the publicity you have given to the matter will ensure this.

I am, Sir, yours faithfully,

Liverpool, Aug. 26th, 1926. W. BLAIR BELL.

that there was in 1925 no case of cholera, plague, or yellow fever, two cases of malaria and six of chicken-pox were treated on board ship; two cases of pneumonia and one of whooping-cough were treated on board canal boats As to rat destruction, 2240 rats were destroyed on board ships, 3116 ashore, none was found plague-infected Twenty-five ships were fumigated with sulphur, an average of 23 rats being killed on each Of meat from abroad, 7½ tons were condemned and seized, also 245 tons of vegetable food. Amongst the 2069 vessels inspected, 582 (28 per cent) had sanitary defects, there were nearly twice as many 20 years ago The defects of 351 ships were remedied before they sailed Of foreign-going steamers, 24 per cent had sanitary defects; of coasting steamers, 30 per cent The chief complaints were that fo'c's'les wanted cleaning and painting (131), that portlights were broken and defective (108), leakages on to the decks (40), water standing in the quarters (23), defects in water-closets (54), in the heating apparatus (49), and in the water tanks (23) Of canal boats, there are 811 under supervision; 70 had leakages into the cabins, of 66 the cabins were dilapidated and required repair, 41 required painting, while 32 had defective water casks, and 32 were overcrowded

---

MENTAL HOSPITAL REPORTS

THE *Carmarthen, Cardigan, and Pembroke Joint Counties Mental Hospital* at Carmarthen had 640 patients in residence on March 31st, 1926, this number being 47 in excess of the estimated bed-space The death-rate was 7 7 per cent, the cause being verified by post-mortem in only 10 per cent of the cases Influenza was prevalent in the spring and there were 12 cases of enteritis A wireless apparatus has been installed It is evident that the care and treatment of the patients is being carried on under peculiar difficulties in this hospital Improvements have been made during the year in the kitchen equipment, which will now provide much needed variations in the dietary scale, but the visiting commissioners were dissatisfied with the meals they saw served, as they were with the arrangements for producing milk on the farm The building is old and inadequately lit. The committee have under consideration the appointment of a dental surgeon, a measure which is of great importance and by now almost universal.

The *Down County Mental Hospital*, Downpatrick, had 727 patients on Dec 31st, 1925, and, unlike the majority of institutions in this country, had 73 vacancies, partly nullified by the use of certain wards for the nursing staff The recovery-rate was 43 6 per cent, a slight increase on last year The death-rate reached 5 9 per cent, the lowest figure on record for this hospital There was no zymotic disease. Post-mortem examinations were made in 13 out of the 37 cases; 60 per cent of the patients are usefully employed, over 100 on the farm, which made the satisfactory profit of £730 in the year In the shoe-maker's shop is made all the footwear for the institution (103 men and 42 women take exercise outside the grounds) The visiting dentist treated 372 patients and a consultant oculist attended when required The medical superintendent draws attention to the large proportion of mental derangements that arise outside the brain, every attention is here paid to disorders of the body Twenty-nine nurses hold their certificate and over 40 more are working for it The report is illustrated as usual by a number of excellent photographs We note the change of name from "Down District Lunatic Asylum"

The *Dorset Mental Hospital* housed 874 patients on March 31st and has ample accommodation for men, but there is shortage of female beds and of rooms for the nurses The death-rate was 5 5 per cent, a remarkably low figure, which may be partly due to the small number of admissions from general paralysis and epilepsy compared with other hospitals There were three cases of dysentery and one of typhoid fever The recovery-rate was 31 3 per cent Of the 100 cases discharged half were let out on trial and 20 were helped financially on discharge Nearly 100 cases are allowed parole and five wards are administered on the open door system A four-valve wireless set has been installed and an operating theatre has been equipped. There is also a new fire station and fire alarm system, a bathroom with continuous bath, and a modern telephone equipment The committee are considering the appointment of an occupation instructor In the laboratory the prevention and control of typhoid is being investigated, as there are six carriers in the hospital Thirty-one nurses hold their full certificate and 40 more have passed the preliminary examination An out-patient clinic is held at the Dorset County Hospital weekly and does valuable work

The *Staffordshire Mental Hospitals Board* have three hospitals At *Stafford* there are 961 inmates, which means that the work is handicapped by crowding, as also by the absence of verandahs, a convalescent villa and isolation blocks for tuberculosis The death-rate was 6 4 and a post-mortem examination was held whenever permission was given for it (58 per cent) There was a recovery-rate of 39 per cent The medical superintendent notes that alcoholism is not now nearly so potent an ætiological factor as it used to be Electric light and a wireless set have been installed and arrangements made for a mercury lamp for ultra-violet light treatment Twenty patients were allowed out on trial, but no money grant was made Parole within the estate is allowed to 13 patients Only 16 nurses hold the M P A certificate At *Burntwood* there are 914 patients The death-rate was 7 9 per cent., post-mortem examinations were held in 90 per cent of cases There were three cases of rubella during the year, but no dysentery and only a little influenza The hospital is crowded on the male side, and the committee propose to erect an admission hospital and a convalescent villa when they can afford them An attempt to relieve congestion by transferring quiet chronic cases to the care of the guardians was not successful, as the boards refused to accept the cases Twenty-seven patients have been discharged on trial and a weekly allowance is now given, 20 cases have parole in the grounds and 14 beyond The dental room has been remodelled and is used for operations Two cases of general paralysis have been treated by malaria and have benefited In the pathological laboratory the relation between acidosis and epilepsy has been investigated Fifteen male nurses, but no females, have the M P A certificate At *Cheddleton* there are 1123 cases and the hospital is full Not only is there need for more mental beds, but the medical superintendent estimates that a colony providing for 1500 mental deficients would not be too large for the requirements of the area There are nearly 100 of these children in Cheddleton, an orthopædic consultant attends weekly and a trained masseuse has begun work on muscle re-education, but, as the superintendent remarks, it is "desperately slow work" Satisfactory results have followed the treatment in several cases A travelling organiser of the National Association for Mental Welfare spent a month working out a time-table suited to the mentality of the children, but there is great difficulty in getting nurses with sufficient patience and devotion to teach the low-grade classes Plans have been submitted for a children's block as their health is unsatisfactory in wards without verandahs Among the adult patients there were several cases of influenza and of dysentery, but no carrier was found The death-rate was 9 2 per cent Eight general paralytics have been treated by induced malaria, two have improved and one man has been back at work for five months A cinema room and second laboratory are nearly completed Eurhythmic dancing and Swedish drill classes have been started and an electric installation provided for diagnosis and treatment Plaster has been used instead of splints for fractures, and endocrine gland products are being of Philoctetes, in the play of that name, Sophocles had in his mind the symptoms which characterise a malarial attack. The periodicity, the shivering, ingravescence, and crisis followed by sleep with sweating, and a transient feebleness on waking, offer a clinical picture of peculiar vividness' This suggestion was accepted by Allbutt and Osler In other of his extant plays Sophocles appears to show a very special interest in the clinical features of disease which may be correlated with the fact that he is known historically to have been closely associated with the cult of Asklepios, for after death he received the hieratic title of "Dexion"—i e, "The Receiver"—from the fact that he became the official host of the statue of the hero-physician when this was brought to Athens from Epidaurus in B C 421

The object of my paper was an attempt to show that in his conception of the madness of Ajax, Sophocles displays a remarkably accurate knowledge of the clinical features of acute confusional insanity It is not true, however, as I am reported to have said, that "the accuracy of this description has been praised by many writers," for, so far as I am aware, no previous writer has drawn attention to this clinical aspect of the writings of the tragedian who "saw life steadily and saw it whole" Incidentally, it may be remarked that this accurate description of madness which appears to be based on actual experience stands in marked contrast to the conventional delineation of insanity given by Euripedes in his "Mad Hercules" The plays of this poet are, however, of great interest to students of psychology, for they are characterised by a very clear understanding of the phenomena of repression and by a remarkable insight into the problem of conflicts and complexes Indeed, had he lived to-day, it is probable that Euripedes would have been an earnest disciple of the psycho-analytic school

I am, Sir, yours faithfully,

Birmingham, August 27th, 1926 G A AUDEN.

ERYSIPELAS AND NEPHRITIS.

To the Editor of THE LANCET

SIR,—After reading the interesting lecture of Prof. Cabot on non-tuberculous infections of the kidney in THE LANCET of July 10th, I shall be obliged if any of your readers will inform me whether they have come across cases of chronic nephritis after an attack of erysipelas It is, of course, well known that people who suffer from Bright's disease are liable to attacks of erysipelas During my 25 years' experience in Bombay I have noted about 20 cases of chronic nephritis which developed between 18 months and two years after an attack of erysipelas I am led to believe that just as acute nephritis frequently follows scarlet fever, chronic nephritis of the interstitial variety follows erysipelas after remaining latent for many months —I am, Sir, yours faithfully,

C L D'AVOINE, M D Brux.

Bombay, August 4th, 1926

CHENOPODIUM FOR ANKYLOSTOMIASIS

To the Editor of THE LANCET

SIR,—With reference to Dr Clayton Lane's interesting and authoritative article on the Treatment of Ankylostomiasis in THE LANCET of August 14th it may be of interest to your readers to remind them that until this year it has not been possible to issue a chenopodium oil answering Dr Lane's requirement that it should be of known ascaridole content because no trustworthy direct method of estimating ascaridole in the oil was known Such a process has however been described by Mr H Paget, of the Wellcome Chemical Research Laboratories in a recent number of the *Analyst* (1926, li, 170) and this has been tried by our analytical department and found satisfactory For some years past we have issued for use in ankylostomiasis a concentrated chenopodium oil prepared by a new process This was known to be particularly rich in ascaridole and, tested by the new analytical method, it is found to contain not less than 90 per cent, whereas as Dr Lane points out, ordinary chenopodium oil may vary from 50 to 70 per cent in ascaridole content a variation which involves risk of overdosage—We are Sir, yours faithfully,

BURROUGHS WELLCOME & Co.

Snow Hill Buildings London, E.C 1,
August 18th, 1926

CLINICAL PATHOLOGISTS AND "CHORIOTROPE"

THE Hon Director of the Liverpool Cancer Research Committee writes that it is proposed to hold in Liverpool clinics and demonstrations of the methods employed there in the treatment of malignant disease, for clinical pathologists attached to clinics and hospitals of standing, in order that they may have the opportunity of studying at first hand the details of this work

Subsequently "choriotrope" will be obtainable for use in the treatment of the patients of those who are attached to the clinics concerned It is suggested that the clinical pathologists who attend the demonstrations make themselves responsible for the full and proper conduct of the examinations required in every case subsequently treated under their guidance, and that no publication regarding results be published for, say, five years

It must be understood that the entire clinical staff of the Liverpool Cancer Research Organisation is on a part-time basis and, therefore, that members cannot place themselves at the disposal of those attending, nor can these demonstrations be repeated except at long intervals and then only to limited numbers. Consequently it may be necessary for a selection to be made from those applying if there be too many at one time A certain number of invitations have been issued to those who have already expressed a desire to attend, but a few further applications are still invited

The demonstrations will be chiefly conducted by Dr Leslie Cunningham, assistant director of the Organisation, and will commence at 10 A M, Monday, Sept 6th, and continue until Wednesday Sept 15th

---

A RAILWAY HOSPITAL FUND.—Last year the staff and directors of the L.M S Railway contributed £136,000 to the Company's Hospital Fund, and it is hoped that £150,000 will be reached this year The majority of the staff, numbering about a quarter of a million, gave twopence per week, which is deducted from their pay, and the directors another penny Membership of the fund entitles to admission to any hospital in the country for the man himself, his wife and children

TRELOAR HOSPITAL.—The report of the Lord Mayor Treloar Cripples' Hospital and College at Alton and Hayling Island records a year of steady progress There has been a marked increase in annual subscriptions and although the total expenditure has increased there has been a substantial fall in the cost per patient. There are now 350 beds 40 of which are being set aside for general orthopædics Sir Henry Gauvain's medical report comments upon the growing demand on beds for sufferers from lupus which necessitates constantly increasing work in the light department and points out that the hospital now concentrates almost entirely on the treatment of tuberculous cripples The children admitted from Portsmouth for whom, by agreement with the Portsmouth Education Committee special provision is made, have been cases of severe and old-standing deformity but up to the present the results of treatment have been quite satisfactory It is found that climatic change associated with sea bathing and natural sun treatment is more effective than uninterrupted treatment in the light department During the year 216 physicians and surgeons from all parts of the world visited that department and a large number remained to study the technique employed The result of the investigations of light therapy by Dr Bannerman the research pathologist is to emphasise the risks of over-dosage Thanks to the generosity of Sir Horace Plunkett and the Medical Research Council Dr Bannerman's services are being retained for another year

THE TREATMENT OF MENORRHAGIA

To the Editor of The Lancet

Sir,—In the recent discussion at the British Medical Association, and in your leading article of August 21st, it is surprising to find no mention of the method of intra-uterine ionisation for the treatment of obstinate menorrhagia Electrotherapists have long known of its efficacy, even in cases which have resisted every other method by drugs and endocrine preparations, and even curetting In 1917 the late Dr Samuel Sloan drew attention to the fact that copper ionisation cured almost every case of menorrhagia, except that arising from fibroids Over 20 years ago Dr A E Zimmern, of the Salpêtrière, published a large book on the subject, giving minute details of many cases of every type Dr Zimmern described his method and showed his instruments in London in January, 1922, at a meeting[1] of the Electro-Therapeutic Section of the Royal Society of Medicine His good results were confirmed by the experiences of several of the English electrotherapists present at the meeting In the *Practitioner* of July, 1921, I described fully the case of a young girl of 23 who was sent to me for ionisation as a last resort by the gynæcologist who had already twice curetted her It may be objected that intra-uterine ionisation is difficult to employ in virgins, but its use is not more complicated than the introduction of radium, and has at least the great advantage that it can never cause sterilisation

I am, Sir, yours faithfully,
Agnes Savill

Devonshire-place, W, August 27th, 1926

THE TECHNIQUE OF BLOOD TRANSFUSION

To the Editor of The Lancet

Sir,—In the course of his article on this subject in your issue of August 21st Dr P C Gibson is good enough to refer in favourable terms to the apparatus described by me in 1920 He claims, however, now to have introduced various improvements into the apparatus I may be allowed, perhaps, to express a doubt as to whether Dr Gibson's additions really are improvements I should view them as unnecessary complications which will in no way render blood transfusion easier of performance, but rather the reverse

The defects in my original apparatus he regards as being (1) the risk of contamination of the blood because the mouth of the flask is not closed by a bung, (2) the liability to the formation of a clot in the tube during the collection of the blood I dispensed with the bung in my apparatus because, with the tube hanging freely into the flask, the needle seemed to be less likely to be dislodged from the donor's vein by the movements of the flask during the mixing of blood and citrate At least one junction between rubber and glass tubes was also eliminated The risk of contamination of the blood by "infective material" falling into it I regard as a purely academic point which need not be considered by any competent operator

As regards the second point, I can only state that, during eight years' experience of the apparatus since I first used it, I have not been troubled by this supposed defect If the ordinary technique is properly carried out the rate of flow of the blood is quite as fast as most donors can stand without fainting Very occasionally a clot forms in the *needle* (never in the tube) before all the blood is collected if the amount needed is rather large Should this happen the remainder of the blood can easily be taken with a second needle from another vein Dr Gibson's additions will not prevent a clot from forming in the needle

Lastly, Dr Gibson's device for running in the citrate solution with the blood apparently results in his using nearly five times as much sodium citrate as is really necessary I understand that he uses 4 5 g of citrate for each 400 c cm of blood My own practice is to use 1 g of citrate for each 450 c cm of blood, and with the ordinary technique this need never be exceeded

I must apologise to Dr Gibson for thus criticising his apparatus, but I do so only in the interests of patients and operators If transfusion is to be used to full advantage the apparatus required must be as simple as possible and in view of the possible toxicity of more than a small quantity of sodium citrate the amount injected into the patient must be as small as possible —I am Sir, yours faithfully,

London, August 23rd, 1926 Geoffrey Keynes

THE PATHOLOGICAL SERVICE OF THE GENERAL HOSPITAL

To the Editor of The Lancet

Sir,—In your issue of August 14th Dr Dyke has some suggestions as to the relation of the hospital pathological department to outside practice In connexion with this I ask again as I have asked before Why should hospitals and universities compete with pathologists in their private practice when they do not do so with clinicians? It is a pitiful thing to see clinicians encouraging this competition with pathologists when they would not think of encouraging a similar competition in their own branches of medical practice Pathologists are consultants as much as are other specialists and should be treated as such

Dr Dyke apparently suggests that the hospital should undertake the outside work and should derive an income from it, paying part of the fees to the pathologist Such a scheme is, in my opinion, unfair to the pathologist The only way in which hospitals, &c, could fairly take part in outside pathological practice is somewhat on the following lines The hospital could —

(1) Provide and equip a laboratory in the hospital precincts,

(2) Pay a stipend to the pathologist to cover all work done for the hospital or, alternatively, pay the pathologist a retaining fee and agreed fees for hospital work, the hospital work, in either case, to take precedence over private work,

(3) Allow the pathologist perfect freedom to make his own arrangements as regards private practice and work for outside authorities,

(4) Allow the pathologist the use of the laboratory for private purposes on payment of expenses and a reasonable rent

The relation of the pathologist to outside work would thus be a personal one He would decide on the fees to be charged and would pay the hospital for expenses and rent The only income which the hospital ought to receive from outside work is that paid as rent by the pathologist It is iniquitous that a hospital should make an income out of the private practice of a member of its staff If the hospital pathologist were granted this independence there would be an inducement for him to settle down permanently in pathological practice

It is quite time that pathologists should combine to resist the idea that they are the tools of the clinicians —I am, Sir, yours faithfully

Charles Powell White

Manchester, August 16th, 1926

SOPHOCLES AND CONFUSIONAL INSANITY

To the Editor of The Lancet

Sir,—In the short résumé of a paper on the Madness of Ajax as Conceived by Sophocles, read before the Royal Medico-Psychological Association, which was published in The Lancet of July 24th (p 177), I am represented as maintaining that "in his delineation Sophocles probably had in mind an attack of malaria" This is however a complete perversion of the theory which I maintained but is clearly a reference to a suggestion which I put forward many years ago that in his description of the sufferings work, and a hearty capacity for sympathy with all other workers whatever their grade when he came into relation with them. In the Canadian metropolis, while he carried on his professional duties and acted as advisory pathologist to the two great hospitals of the city, he found time to preside over the Montreal Improvement League and the various organisations in behalf of child welfare. and throughout his tenure of the chair in Montreal he was a prolific and also a valuable contributor to scientific journals and the transactions of learned societies. He was elected F.R.S. in 1905, and it was at Montreal that he began to attract wide attention by his writings.

---

[1] The Lancet, 1922, i, 178

Adami was an original contributor to Allbutt and Rolleston's "System of Medicine," where his article on inflammation was recognised as an outstanding feature in the commencement of that great compendium, but shortly he made a claim upon individual notice by his great text-book of pathology. The "Principles of Pathology" appeared in 1909. and all Adami's special qualifications for its writing were put into evidence. His training had been wide, as has been indicated, for he had worked with Roux in Paris, with Heidenhain in Breslau, and with Michael Foster and Roy, among others, at Cambridge; he essayed boldly, and with a clear and forcible pen an exposition of a science which had spread and was rapidly spreading from the realms of morbid anatomy, and changes in cell histology, to the study of cellular function in disease and its basic disturbances. The result was a work which was catholic in its range and critical in its presentation of the prominent problems of the day, and as such it was acclaimed as the best British compendium of general pathology that had yet appeared. No second edition of these two massive volumes was published. Their success would have justified their regular appearance brought up to date, and expanded or contracted in accordance with the development of the science, but the inclusive nature of their range would have necessitated for such a purpose the cooperation of a band of special workers, and would have altered the whole original conception. But four years afterwards there appeared the Text-book of Pathology by Adami and his colleague at McGill University, John McCrae. This was a single volume within whose covers it was endeavoured to embody the features of the former work and to follow its main lines, but in the large section dealing with special pathology it was found necessary to write without any reference to the earlier work. The treatise by Adami and McCrae became rapidly popular, has been issued in revised and enlarged form, and many of our readers have been grounded in their work through its assistance.

In 1918 Adami published a series of Medical Contributions to the Study of Evolution, the first part of the volume consisting of the Croonian lectures which had been delivered the previous year before the Royal College of Physicians of London and published some in full and some in abstract, in the columns of THE LANCET. This volume was directed rather to the biologist than to the medical man, and in its pages the author called attention in an uncompromising manner to the unsatisfactory state of biological opinion on the problems of variation and adaptation. His main thesis was that congenital adaptation is not really different in kind from individual adaptability, and that as the individual adapts itself directly to changed environment so does the species give rise to germinal variations of an adaptive nature when the environment is such as to call them forth. Later papers in the book were not up to the standard of the Croonian lectures and, though the volume was full of valuable information and reflection, it was felt that there were contentious passages which the author himself would have removed had the times in which he was writing been leisurely instead of over full with the troubles of the war.

We are indebted to an authoritative source for the following estimate of Adami's place as pathologist and author:—"James Ritchie used to urge all his pupils to 'read Cohnheim,' which is easy to do in the three volumes of the Sydenham Society's translation of the 'General Pathology.' And reading Cohnheim is still probably about the most profitable introduction to the serious study of pathology, not so much for what he says (though that is important and still for the most part true enough) as for the tone and manner in which he shows how the principles of pathology may be traced out and woven together into a scientific study. But Cohnheim is long and students are impatient; if a teacher wants more than a few of them to get the right idea of how they should approach the post-mortem room, the classroom, and the wards it is better to press upon them Adami's article on Inflammation in Allbutt's System of Medicine, which is also published as a small book. They will find here equally well and much more briefly, an illustration of how they should think about disease and learn the outlook on pathology which made Adami the influence which he has been. It is not very remarkable that the two books should be akin. Cohnheim trained Smart Roy, and it was with Roy at Cambridge that Adami did his first serious research, familiar to physiologists as 'Roy and Adami: The Physiology and Pathology of the Mammalian Heart' (*Phil. Trans.*, 1892, vol. clxxxiii., B, p. 210). After Adami went to Canada in 1892 as the first professor of pathology at McGill he was not much given to doing laboratory work himself. He developed the department founded by Osler—who began by holding morbid anatomy classes in a cloakroom—and became interested in the possible relation of intestinal bacteria to cirrhosis of the liver. A variety of contributions to the pathology of the heart and especially the blood-vessels came from his laboratory, but he is probably best known for his classification of tumours (*Journal of Pathology*, 1903, vol. viii., p. 243) which provided a convenient arrangement of pigeon-holes into one or other of which most tumours could be fitted. It scarcely did more than this when it was published, and subsequent knowledge of the varied potentialities of cells has made the embryological basis on which it was founded insecure. What Adami will, however, be remembered for and remembered gratefully, is the first volume of the 'Principles of Pathology,' in which his studious life and wide biological training found expression in 1909. It is an attempt to develop pathology as a science. As he points out, books giving a presentation of pathological data were many and excellent, but 'what is needed in a text-book of pathology is not the mere record and description of phenomena, but the attempt to analyse these phenomena in an orderly manner,' and to bring them into relation with other branches of biological study—to do, in other words for the whole of the subject what he had already done for inflammation. The attempt may not be wholly successful, and the second volume on systemic pathology has nothing to distinguish it from several other text-books. But the book does not fall really short of being a great work and it certainly deserves to have been used much more than it has been, for it was never very popular and instead of being trimmed and improved in successive editions it has now practically gone out of sight. Perhaps it was written too early, and an audience which wanted diagnosis and names was impatient of its philosophic tinge or perhaps it has had more influence than is obvious. In Adami's old university Prof. Dean has begun the first course in advanced pathology in the Natural Science School along lines adumbrated by Adami, and at Montreal Adami's successor does not hesitate to weave classical philosophy into his pathological discourses. Adami's views were sound and in the end will prevail; it is only in some small way that he missed being a more effective missionary himself. Meanwhile those who would get an idea of his mind without too much technical detail should read the 'Medical Contributions to the Theory of Evolution.'"

During the war Adami served in the Canadian Army Medical Corps with the rank of colonel. He was eventually made Assistant Director of Medical

The Services.

RETIREMENT OF SURGEON REAR-ADMIRAL BEADNELL.

Surgeon Rear-Admiral C M Beadnell, C B, is retiring at his own request, thus facilitating the promotion of his juniors. He had reached the top of his rank, there being no further employment for a surgeon rear-admiral after the completion of three years' full-pay service in that position, save selection as Director-General He is five years under the age-limit owing to early promotion for good service, a fact which unfortunately will be reflected in his pension

ROYAL NAVAL MEDICAL SERVICE

The following appointments are notified Surg Lts E T S Rudd to *Royal Sovereign*, H Gow to *Ajax*, J M MacWright to *Victory*, for R N Hospl, Haslar, for 14 days' training, W F. Lascelles (proby) *to Victory*, for R N Hospl, Haslar, for 28 days' training, and J L Cox to *Erebus*, for 14 days' training

Surg Comdr M J Laffan, appt to *Malaya* cancelled

Surg Comdr T E Blunt is placed on the Ret List at his own request with rank of Surg Capt

Surg Comdr (D) E E Fletcher to be Surg Capt (D)

Surg Lt-Comdrs (D) J R Palmer, W C Murray, and H M Meek to be Surg Comdrs (D)

W C Sloan to be Surg Lt

ROYAL NAVAL VOLUNTEER RESERVE

Proby Surg Lts J B Oldham and H Winstanley, and Sub-Lt J B Hutchinson to be Surg Lts

R S Allison entered as Proby Surg *Lt* and *attached* to the Ulster Division

ROYAL ARMY MEDICAL CORPS

The undermentioned Capts to be Majs L M Routh, F. D Annesley, C D M Buckley, J C A Dowse, Bt Maj R E Barnsley (Prov), H B F Dixon, G R Grant (Prov) (and remains secd), W Walker, E F W. Grellier, G D Jameson (Prov), D W Pailthorpe, Bt Maj C S P Hamilton, S J A H Walshe, J F. la Lauder (Prov), J Walker, S Arnott, T L Fraser, R A. Hepple, J G Ronaldson (Prov), C O Shackleton, H. Walker, W D Arthur (Prov), H D F Brand (Prov), H G Peake, Temp Maj F G A. Smyth, J P. Little, K P MacKenzie, A. L. Robertson, D C Monro, F C A. *Fleming*, W Foot, F C K Austin, S Smith, and F G Flood

The undermentioned to be Lts (on prob)· Hugh McVicker, Temp Lt J D Borham (and relinquishes the rank of Temp. Lt), Lt E W. Hayward (from 4th Bn R. Berks R), C E Eccles, Temp Lt Philip F Palmer (and relinquishes the rank of Temp Lt), D Bluett, and F P M Anderson.

The undermentioned Lts (on prob) are confirmed in their rank T. A J M Dodd, J. M Johnston, and R J G Hyde

Lts H McVicker and E W Hayward are seconded

ARMY DENTAL CORPS

Majs to be Lt-Cols W T Finlayson, J A. Seymour, C L Colbran, and A. B W Rust

RESERVE OF OFFICERS.

Maj H G Traver resigns his commn and retains the rank of Maj

TERRITORIAL ARMY

Capt L T Challenor relinquishes his commn and is granted the rank of Major

Capt B Kelly resigns his commn. and retains his rank

Capt J P Kitson, having attained the age limit, is retd and retains his rank

Lt J H Mellotte to be Capt

ROYAL AIR FORCE

Flight Lt F J Murphy is promoted to the rank of Squadron Leader

Flight Lt J A Musgrave is *transferred* to the Reserve, Class D 2

Flying Officer J Parry-Evans is granted a permanent commn in this rank.

INDIAN MEDICAL SERVICE

The King has approved the retirement of Lt-Col W S J Shaw, Lt-Col J W Cornwall, and Maj W. L Forsyth

Capts Probodh Chandra Banerjee, Ambuj Nath Bose, Madan Gopal Bhandari, and M M Cruickshank to be Majs

To be Temp Lts. Karam Chand Virmani and Tolo Bhojsing Pahlajani

QUEEN ALEXANDRA'S MILITARY NURSING SERVICE FOR INDIA.

The following promotion has been made —Lady Superintendent to be Chief Lady Superintendent. Miss W Walker

Obituary.

JOHN GEORGE ADAMI, C B E, M D CAMB, F R C P LOND, F R S,

VICE CHANCELLOR OF THE UNIVERSITY OF LIVERPOOL

WE regret to announce the death of Prof Adami, Vice-Chancellor of the University of Liverpool, which took place in a nursing home in Liverpool on Sunday evening last in the sixty-fifth year of his age His health had given cause for anxiety for two years, an improvement which took place a short period ago was not maintained, and for several weeks there had been little hope of his recovery

John George Adami was the son of a Manchester man bearing the same name, and his mother was the sister of Prof D J Leech, the well-known Manchester pharmacologist This association with Manchester was maintained by education at the Grammar School and at Owens College, whence he proceeded with a scholarship to Christ's College, Cambridge, to take a first class in the Natural Science Tripos and be also Darwin Prizeman Then he studied abroad for a time both in Paris and Breslau, and, having graduated in medicine at Cambridge, became house physician to the Manchester Royal Infirmary At the termination of his residency he returned to Cambridge as demonstrator of pathology, was awarded the John Lucas Walker Studentship, and was elected a Fellow of Jesus College At Cambridge he worked particularly under Smart Roy, and their combined observations in comparative pathology established his reputation as a coming man He was just 30 when, in 1892 he accepted the position of Strathcona Professor of Pathology and Bacteriology at McGill University, Montreal He immediately began to earn a name for himself by his clear and thorough methods of dealing in class-room and laboratory with the simple and with the advanced sides of his subject, as well as by his general *outlook upon* scientific education As time went on he displayed the qualities which afterwards were *notable* in Liverpool his intellectual capacity being combined with a great aptitude for business *routine*, a robust appetite for

J G ADAMI

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates passed in the subjects indicated :—

Surgery—A. K. A. Carter, Univ Coll. Hosp ; M. E M Carter, Univ Coll. and St Mary s Hosps C E. Nicholas, London Hosp , J Pattis, Innsbruck and Univ Coll. Hosp. ; A. Purvis, Durham , M. Stinnisbeck, Freiburg and Royal Free Hosp , and N W Wood, Middlesex Hosp

Medicine.—J Dywien Guy s Hosp ; R. C Glover, Leeds and St. Bart.'s Hosp , K. G B McMahon, Charing Cross Hosp , T. C Pain Guy's Hosp , P H Row and L Schapera, London Hosp , R. S S Smith St Bart 's Hosp , J A. H. Sykes, Edinburgh , and L. D Williams, Cardiff.

Forensic Medicine—N. H. Allen, Guy s Hosp F. W Barton, Middlesex Hosp . S B Browning, Guy s Hosp , M. E. M. Carter, Univ Coll. and St. Mary's Hosps , F G Hardaker, St. Mary's Hosp C E. Nicholas, London Hosp K. Roberts Liverpool L D Williams, Cardiff , and N W. Wood, Middlesex Hosp

Midwifery—C B Ball, Sheffield ; A. Heukamp, Gottingen and Royal Free Hosp , W Hinds, Durham ; S Jenkinson, St. Bart s Hosp , H S. Littlepage, Birmingham ; J. B Lurie, St Thomas's Hosp . A. Purvis, Durham ; R. J Richards, St George s and St. Bart 's Hosps : T W Riseley, Cardiff , and J M. F. Whitby, St Thomas's Hosp

The Diploma of the Society was granted to the following candidates entitling them to practise medicine, surgery, and midwifery N H Allen C B Ball, A. K. A. Carter, W. Hinds, J B Lurie, K. G B McMahon, T C Pain, A Purvis, P H Row, L. Schapera, M. Stinnesbeck, J A. H. Sykes, and J M. F Whitby

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION—Each week the City of London Maternity Hospital holds a course in obstetrics, including ante- and post-natal clinics and children's welfare clinics Personal application to attend this course must be made to the Secretary of the Fellowship During September courses will be given as follows At the Central London Ophthalmic Hospital from Sept 6th to Oct 2nd, occupying the whole of each afternoon , at the Bethlem Royal Hospital, the course taking the form of lecture-demonstrations on Tuesdays and Saturdays at 11 A.M. from Sept 7th to Oct. 2nd ; at the Infants Hospital, from Sept 13th to 25th, occupying every afternoon and including one Sunday visit to Thavies Inn V D Centre , at the Royal Free Hospital, where Dr. C B Heald will give four lecture-demonstrations on treatment by electrotherapy on successive Wednesdays at 5 15 P.M., beginning on Sept. 22nd , at the Royal National Orthopædic Hospital, *from Sept 20th to Oct* 2nd, where a comprehensive course in orthopædics will be given covering all branches of the subject and occupying all of each day. Finally, there will be an intensive course in medicine, surgery, and the specialties at the Westminster Hospital, from Sept. 20th to Oct. 2nd, from 10 30 to 5 30 daily Early in October the National Hospital for Diseases of the Heart will give a fortnight's course Entries are limited to 16 so early application is advisable. Other courses starting the first week in October are as follows : a series of demonstrations on Tuesday and Thursday afternoons at the London School of Tropical Medicine and an all-day course in diseases of the throat nose and ear at the Central London Throat Nose and Ear Hospital, where there will also be a practical operative surgery class Copies of all syllabuses of the General Course programme. and of the *Post-Graduate Medical Journal* may be obtained from the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1.

THE LATE DR. D E FLINN—On August 18th the death occurred at Kingstown co Dublin, of Dr David Edgar Flinn, who was well known for his interest in the medical aspect of reformatories and prisons Dr Flinn was born in 1850 at Buenos Ayres, and educated at Clongowes College, the University of Dublin and the Royal College of Surgeons in Ireland. He qualified in 1874, becoming M R C.P I in 1882, F.R C S I in 1885, and D P H in 1890 For a time he acted as medical officer of health to the East Staffordshire urban and rural combined districts and from 18[illegible] to 1901 was editor of the *Health Record*. During this period he published several books on public health subjects, and in 1893 served on the Dublin Typhoid Inquiry Committee. In 1907 he was made a member of the Vice Regal Commission appointed to inquire into the causes of the high death rate in Belfast From 189[illegible] to 1910 Dr Flinn was medical inspector of the Local Government Board Ireland and from 1910–17 a medical member of the Prisons Board and chief inspector of reformatory and industrial schools Though he had long retired from active participation in the attempt to improve prison conditions, he followed the modern developments in this direction with keen interest, though not always with approval Dr Flinn was an enthusiastic Volunteer and later a Territorial attaining the rank of colonel before his retirement in [illegible].

ST. MARY'S HOSPITAL—The annual dinner of past and present students will take place at the Connaught Rooms, Great Queen-street, London W.C , on Oct. 4th at 7.30 P.M. Dr G W H. French will be in the chair, and the hon. secretary is Dr. A. Hope Gosse.

ROYAL SANITARY INSTITUTE.—The thirty-eighth congress and health exhibition of this institute will be held at Hastings from July 11th to 16th, 1927, under the presidency of Sir William Joynson-Hicks.

WESTMINSTER HOSPITAL—The report for the first complete year since the reconstruction of the building states that there has been a remarkable increase of work in every department and that 221 out of the 234 beds have been constantly in use. The X ray and electrical department treated 3655 patients and the private wards were now occupied by 206 patients Annual subscriptions increased by 58 per cent , and patients paid £19,000, including £6000 from those in the private wards

WESTMINSTER HOSPITAL MEDICAL SCHOOL.—The annual dinner of past and present students will take place in the Royal Adelaide Gallery, Gatti's Restaurant, Strand. W C 2, with Mr William Turner in the chair, on Friday, Oct. 1st, at 7 P.M.

GUY S HOSPITAL.—Of £167,000 received by this hospital in 1925, £64,000 was from endowments Subscriptions produced only £5000, which leaves nearly £100,000 to be obtained from other sources The bicentenary appeal to relieve the hospital and medical school of debt produced nearly £90 000, which is less than had been anticipated. The average stay of the 10,395 in-patients was 20 days and their cost £11 10*s* 9*d*.

KING'S COLLEGE HOSPITAL: RE-OPENING OF WARDS—Last week two small wards containing between them 34 beds were reopened a course justified, from the financial point of view, by a drop of 5*s* 8*d*. per week in the cost of maintaining a patient. One-half of the liberated beds have been assigned to the nose, throat, and ear department, which has the longest waiting list

SHEFFIELD HOSPITALS.—The annual report of the Sheffield Hospitals Council, which has just been issued, shows that on Dec. 31st. 1925, the four Sheffield voluntary hospitals were in debt to the extent of £102,000. During the year 20,886 new contributors joined the "Penny-in-the-Pound" Fund, and the amount received from employers and workpeople exceeded £107,000 A total number of 44 000 casualties were treated The council's most urgent problem is that of giving early admission to the large numbers on the waiting lists

POST-GRADUATE HOSTEL.—On Tuesday, August 17th with Dr L. Long (Oklahama) in the chair, Mr. Donald Armour opened a discussion on Head Injuries He pleaded for an ipsolateral decompression in all cases of compression due to injury as the patient was too ill to deal with the cause, moreover even symptoms from contrecoup would often prove amenable. He deplored the present methods of cerebral topography. Lumbar puncture was valuable in treating traumatic neuroses, but was dangerous in the presence of high intracranial pressure due to the possible formation of a "pressure cone." Trephinings for decompression should be large During discussion Dr Long emphasised the importance of prolonged rest after head injury if sequelæ were to be avoided. On Thursday (August 19th) Dr Harold Scott pathologist of the Zoological Society, opened a discussion on Some Points on Tuberculosis among Wild Animals in Captivity, Dr Simpson Wells (Cape Town) being in the chair Dr Scott said that tuberculosis took on different characteristics in animals birds, and reptiles, and it was important to consider that they were intercommunicable Dr Wells, in the discussion said that Macewen's theory that tuberculosis nearly always started in childhood later appearance being far more fatal found an analogy in Dr Scott's statement that wild animals only suffered from tuberculosis when placed in captivity. The disease was then very fatal and was found in an advanced stage when the animal had appeared healthy

In the coming week on Sept. 8th Mr. A. Rocyn-Jones will open a discussion on Manipulative Surgery and the Bone-setter On the following day Dr G Clark Trotter will open a discussion on the General Practitioner and the Medical Officer of Health These discussions will take place at [illegible] P.M. at the rooms allotted to the hostel at the Imperial Hotel Russell-square London W C No introduction beyond the presentation of a visiting card is required and there is no entrance fee or subscription.

Services, was appointed to the War Office Committee on the Medical History of the War, and became the historical recorder of the medical services of the Canadian Expeditionary Force His history, the first instalment of which appeared in 1918, was based as much upon the diaries of individual medical officers as upon official documents, and aimed at giving the professional reader a bird's-eye view of the development of military medicine as exemplified by the work of the C A M C. A mere list of the historic events which passed under Adami's notice would show how deeply interesting his volumes are Four short chapters in the first volume give, for example, the medical history of the second battle of Ypres, and are noticeable for a moving description of the introduction of poison gas, the C A M C being the first corps to incur the terrible experience The corps were fortunate in their biographer, for Adami was not afraid to call attention to defects in the official records, while he supplied an interesting historical background to events which are detailed as episodes in a great adventure He was appointed C B E. in 1919

Adami did not return to Montreal after the war, but accepted the post of Vice-Chancellor of the University of Liverpool on the retirement, in 1919, of Sir Alfred Dale, and speedily justified his choice He did little more scientific work, though both in writing and in public speaking he ever displayed keen interest in research and a laudable receptivity in regard to the teachings of his successors He concentrated on the official side of his duties He had the personal appearance rather of a man of affairs than of a student, and in that capacity he showed himself successful He brought University affairs unceasingly to the notice of Liverpool to the considerable benefit of the finances of the institution, and to the benefit of the citizens also who were taught to use as well as appreciate the opportunities offered by a centre of education in their midst If he was not always judicious in his many public utterances, his indiscretions were clearly due to his enthusiasm that had the greater chance through public comment of becoming contagious In all Liverpool circles and in all grades of the University his active and stimulating personality will be sincerely missed "At the age of 64," writes our Liverpool correspondent in appreciation of a dead friend, "Adami was still carried forward by an eager interest in all that concerned the welfare of the University in its widest aspect, and he still found time, in spite of multifarious public duties, to read papers on scientific and literary subjects, and to join in the activities of widely varied interests designed to advance the public weal It is true that for the last two years his health has not been equal to the strain, but the spirit remained undaunted, shone out in a glowing face, and was betrayed by an ever-hurried gait It is recognised by all that, especially in these last seven years, Adami has done a great work for Liverpool by getting rid of that isolation from the life of the community, which is so apt to mark, and mar, the existence of newer universities With the students the Vice-Chancellor was a very popular figure, and to see him at their gatherings, his face beaming with enjoyment over some humorous piece of byplay or some quieter sally of his own, was in itself a great delight He entered very fully into their interests and spent himself freely when he felt his influence or action was needed in their behalf In later years he had been feeling the necessity for the more general and systematic cultivation of health as a vital activity of the University amongst its undergraduates By all with whom he came in contact he will be mourned, by his colleagues and his students no less than by the prominent men in the civic life of the city on whom he had made a deep impression Still deeper, of course, will be the loss to those who were his personal friends They best knew how he could blend with his sterling qualities a happy almost sprightly spirit whose influence it was impossible to resist"

Adami received, as might be expected, and in addition to those already mentioned, many academic honours He was an honorary F R.C S Eng, and was similarly complimented in Scotland and Canada, he was an honorary M D of three universities, an LL D of three more, and a Sc D of Trinity College, Dublin He was a Fellow both of Jesus College and his own college (Christ's), he was a past President of the Association of American Physicians, and Fothergillian Medallist of the Medical Society of London

He was twice married, first to Mary, daughter of J A Cantlie, of Montreal, by whom he had two children, and, secondly, four years ago, to Marie Wilkinson, daughter of the Rev Thomas Wilkinson, vicar of Litherland, who survives him

---

Donations and Bequests —Under the will of the late Mr Jeremiah Edward Bles, M A., D Sc, F R C S, of Cambridge, the testator left all his scientific instruments, scientific books, and the fittings and contents of his private laboratory to the Chancellor, masters, and scholars of the University of Cambridge, and he empowered his trustees to expend a sum not exceeding £500 in completing any researches made by him and publishing the results of any researches not published at the time of his decease Failing issue who shall attain an interest, and subject to his wife's life interest, he left the residue of his property, after certain bequests, to the Chancellor, masters, and scholars of the University of Cambridge, upon trust, if a professorship of animal embryology be not in existence at his decease, or, if existing, be not adequately endowed, then for such professorship (and assistants, &c) or its further endowment, this professorship being called the "Charles Darwin" Professorship, for research and teaching in this subject from a purely scientific aspect, and subject thereto upon similar terms for a professorship of biophysics If both of these be already constituted and adequately endowed, then he left it for such purpose as may best serve the interests of biological science —By the will of the late Miss Annie Mary Fraser, of Aberdeen, the following, among other, bequests are made £3000 to the Aberdeen Royal Infirmary, £2000 to the Aberdeen Royal Hospital for Sick Children, £500 to the Morningfield Hospital, Aberdeen, £250 each to the Aberdeen Dispensary, the Aberdeen Maternity Hospital, and Aberdeen Convalescent Hospital and the residue of the property, about £30,000, for a nursing home in Aberdeen for those not able to pay the charges of ordinary nursing homes —The directors of the Prudential Assurance Company have voted a sum of £1200 for the purchase of radium to be used in the treatment of cancer at the Westminster Hospital —Miss Mary Agnes Clarke, of Morecambe, Lancs, left £1000 to the Queen Victoria Hospital, Morecambe, for a bed to be known as the "Mary Clarke" Bed —Miss Elizabeth Wills, of Crewkerne, Somerset, left £1000 to the Crewkerne Cottage Hospital —The Middlesex Hospital is to receive a sum of £10,000 from an anonymous donor, who has promised to add to this sum as circumstances permit, for the special purpose of building a new home for nurses —Miss Jane Eliza Turner, of Peckham, besides other bequests, left £1000 to St Mark's Hospital, City road, E C, £200 to the Cancer Hospital, Brompton, S W, and £500 to the Royal London Ophthalmic Hospital —Dr William John Miskelly, M D, B S, Everton, Liverpool, who left £10,070, gave the whole of his property in trust for his wife and daughter, and on the death of the survivor of them to the Royal Medical Benevolent Fund —Miss Alice Maud Ridgway, Stoneycroft, Liverpool, who left £7673, gave the residue of her estate for such hospitals or sanatoriums for the treatment of tuberculosis as the executors may select.—Dr Ernest Septimus Reynolds, M D, D L, F R C P, D Sc, of Manchester, formerly professor of clinical medicine in the University of Manchester and physician to the Royal Infirmary, left £1000 to the Manchester Royal Infirmary to endow a bed in memory of his work in that institution —Sir Frederick George Painter, of The Boltons, South Kensington, S W, left £1000 to the Bristol Infirmary for general purposes, £500 similarly to the Bristol General Hospital; £500 each to several other institutions, including the British Home and Hospital for Incurables, Streatham, the Royal Female Orphan Asylum and the Blue Maids Orphanage, Bristol, and £200 to his "valued friend and medical attendant for over 10 years," Mr Philip Birch, of Gunterstone-road West Kensington —Mr John Edward Potts, of Hampstead, gave £100 each to the Royal Chest Hospital, City-road and the Royal Northern Hospital —Major James Joicey, Poulton Priory, Fairford, Glos, left property of the value of £188,123 After certain annuities and bequests he left all his other property to his wife for life, with remainder to such charities or charitable objects as his wife may appoint

St Helen's Hospital, Lancashire —Res M O £250

St John's Hospital, Lewisham, S E —Cas O At rate of £100

St Mary's Hospital W —Asst M O for X Ray Dept

St Peter's Hospital for Stone, &c —H S At rate of £75 p a

Samaritan Free Hospital for Women, Marylebone-road, N W —H S At rate of £100.

Sheffield Royal Infirmary —H P At rate of £80

Sydney University, New South Wales Australia —Professorship of Psychiatry £1100

Warrington Infirmary and Dispensary —Sen H S £250

Western Ophthalmic Hospital, Marylebone road N W —Sen and Jun Non Res H S 's At rate of £150 and £100 respectively Also Hon Asst S £100 guineas

West End Hospital for Nervous Diseases, Regent's Park, N W —Jun H P At rate of £100

West London Hospital, Hammersmith-road, W —One H P and Two H.S s Each at rate of £100

The Chief Inspector of Factories announces vacant appointments for Certifying Factory Surgeons at Wolsingham (Durham) Ormskirk (Lancashire), Witham (Essex), Gosport (Hants), Measham (Leicestershire), Thame (Oxfordshire), and Newhaven (Sussex)

Births, Marriages, and Deaths.

BIRTHS

BRAIN —On August 30th to Stella, the wife of W Russell Brain, M.D, M.R.C P Lond., of Stonehill-road, East Sheen—a son.

CLARK —On August 15th, at Harthill, Sheffield, the wife of John Nichol Clark, of a son

LOW —On August 22nd, at Gloucester place, W, the wife of Dr W Alexander Low, of a son.

MACKEITH.—On August 18th at a nursing home, Oxford, the wife of Dr M H MacKeith, of a daughter

MILLER.—On August 25th, at Morven House, Lampton, Middlesex, the wife of Dr F. Currer Miller, of a daughter

MONTGOMERY —On August 21st, at Parkside, Feltham, Middlesex, the wife of Dr V C Montgomery, of a daughter

ROBERTS —On August 23rd at Vellore, S India, the wife of C L Digby Roberts, M B, Ch.B Edin., D T M. and H Eng, of Mariani, Assam, of a daughter

WAKELEY —On August 27th at Sussex House Sutherland-avenue, W 9, the wife of Cecil P G Wakeley, F R C S, F R.S E, of a son

WARWICK.—On August 30th, at Heathcroft, Hampstead Way, to Joan Warwick, M.R.C S, L R.C P, the wife of W. Turner Warwick, F R.C S—a daughter

MARRIAGES

HAMLETT—WATSON —On August 26th, at St Martin in the Fields London Ronald W Hamlett of Winsford, Cheshire, to Constance C M. Watson, M.R C S, L.R.C P Lond., of London.

MACKIE—ELWES —On August 24th, at St George's Bloomsbury by the Rev Charles Mackie Lieut -Colonel F Percival Mackie, M D F R C S, F R C P, Indian Medical Service, to Mary Elizabeth Haddon, widow of Gervase Frank Weston Elwes

DEATHS

ADAMI —On August 29th J George Adami C B E. M.D, F R S Vice Chancellor of the University of Liverpool.

DEPREE.—On August 30th, Hubert Templer Depree, M B B Ch. Camb M R.C S Eng, L R.C P Lond, of 1, Higher Summerlands, Exeter

FRASER.—On August 19th, at Raipur India, of cholera Lieut-Colonel W J Fraser F R C S E, I M S, third son of the late John Fraser, Abbotsford, Ceylon, and Wolf Crag, Bridge of Allan aged 45

GASPERINE.—On August 13th suddenly in New York U S A, John Jones Gasperine M R C S Eng L.R.C P Lond, D P H of Willoughby road, Hampstead

GLOVER.—On August 25th in Spain of diabetes after ten years illness heroically borne James Glover M B, Ch.B, of Bentinck street W, aged 44

MOLONY —On August 20th at Porlock, Somerset, FitzJames Molony L.R.C P & S.I, aged 65

POWELL.—On August 28th after a few hours illness at The [illegible] Worcester road Sutton Samuel Arthur Powell O B E, M D Bom of Harley street W, and late of Bombay

PRICE.—On August 16th, at Upperhill David Price M R.C S, L.R.C P

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages and Deaths

Notes, Comments, and Abstracts.

FOCAL SEPSIS IN ITS RHINOLOGICAL ASPECT.*

BY T B LAYTON, D S O, M S LOND.

SURGEON TO THE THROAT AND EAR DEPARTMENT, GUY'S HOSPITAL.

EXCLUDING direct extension through the tissues or along a surface an infection may spread by a lymphogenous or an hæmatogenous route The idea of the spread of acute disease from one site in the body to another by the blood stream has long been present in the mind of the physician It preceded the discovery of micro-organisms; it is one of the first that the student grasps on his entry into the wards He realises the danger of suppuration in a distant joint from acute osteomyelitis, whether of the temporal bone or of the head of the tibia He is on the look-out for an abscess of the liver in appendicitis or of the lungs in mastoiditis, and he calls the resulting condition " pyæmia " The idea that a chronic disease may have a similar causation is more recent, and the student meets it at a later stage. It is prominently before us at present, and is in my opinion destined to have a permanent place of growing importance among our concepts of disease This, like all new ideas, requires careful thought

Sepsis as a Cause of Chronic Disease

We mean by it that many chronic diseases are due to the constant absorption into the blood of organisms or of their toxins from some site distant from any lesions produced in the course of the chronic disease The name of ' focal sepsis " has been given to this idea, and the place in which the organisms are developing or are manufacturing their toxins is known as the " focus of infection " or the " site or source of sepsis " These organisms may be residing in this site without ever having given rise to any symptoms therein or to so few and trivial that the patient has taken no notice of them. On the other hand they may have caused one or more attacks of acute symptoms which have entirely subsided but which the patient has not connected with the chronic disease from which he is suffering It is clear that if this concept of disease be correct the right line of treatment is to stop the constant absorption of organisms or of toxins into the blood-stream by removing or otherwise dealing with the source of sepsis If we can do this we may expect, if not to cure the disease, at any rate very materially to alleviate the sufferings of the patient and to stay the further progress of the malady It is also clear that if this prove to be the correct explanation of the pathology of any given chronic disease, it may also be the explanation of any other chronic disease of unknown pathology Therefore it is right for us to investigate this latter disease along similar lines, so long as we are not doing our patients any harm thereby or subjecting them to any unnecessary risk. The situations in the body which have been found to be possible foci of infection may be put under three groups First, there is the alimentary group, which includes such sites as the gall-bladder, the appendix, or the colon as a whole; secondly, there is the genito-urinary group, which includes the glands of the prostate in the male and the cervix uteri in the female; and thirdly, the group in the upper respiratory tract which is our more immediate business

When then, we have a patient suffering from some chronic disease the pathology of which we think, might be explained on this concept of focal sepsis, we should if we were scientific, investigate all the sites in each of these three groups, we should see whether there is any disease in all or any, and whether we can cultivate a pathological organism therefrom. But in clinical medicine we can never be scientific, we can only apply the advances which science gives us to our art of healing Or put differently, the science of the clinician differs from the science of the laboratory worker and the former is most truly scientific when he realises his limitations and does not try to plan his investigations on a patient along the same lines as the laboratory worker plans experiments which are subject to controls

Thus in the hypothetical case before us the routine investigation of the first two groups is ruled out, the first by danger and by expense the second by decency. To the investigation of the third group these objections do not apply, and this may explain why, in spite of certain brilliant successes there have been many disappointments For the person who examines such a case may be a believer, who quite subconsciously sees what he wants to see or what he is asked to see, or he may be a conscientious sceptic who will not make a deduction until he has proof, who will not report definitely that there is a source of sepsis in the upper respiratory tract unless he is certain that it is there, and

---

[*] Based on a clinical lecture delivered at Guy's Hospital

Middlesex Hospital —Notwithstanding that, for reasons that are familiar, this great hospital has been working under serious difficulties, the report for 1925 is, the governors say, very satisfactory The number of patients dealt with was 5103, a slight falling off on the other hand, the out-patients, at 39,579, showed an increase of 1320 The attendances numbered nearly 197,000, a growth of more than 14,000, and it is a notable circumstance that 60,452 of these attendances were dealt with in the electro-therapeutic and massage department Each in-patient cost an average of a fraction over £13 During the year the Cancer Charity of the hospital, which is £17,000 in debt, treated 718 in-patients and 233 new out-patients Each in-patient cost £28 12*s* 11*d*

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS

Parliament was summoned from its holiday on Monday and Tuesday last to reconsider and renew the Emergency Regulations, in view of the coal dispute No other business was taken, but the following question of medical interest was answered

After-effects of Encephalitis Lethargica

In reply to Mr Rhys Davies, Mr Neville Chamberlain (Minister of Health), on August 31st, said that the provision of suitable accommodation for persons suffering from the after-effects of encephalitis lethargica was receiving his careful attention An experimental unit for the treatment of 100 cases had already been opened by the Metropolitan Asylums Board at Winchmore Hill A certain number of persons certified under the Lunacy Acts were suffering from the after-effects of encephalitis lethargica, and arrangements had been made by the London County Council to provide for the treatment of London cases at the West Park Mental Hospital, so that the study of the problem might be concentrated A measure had also been introduced into Parliament to amend the Mental Deficiency Act so as to facilitate the admission into mental deficiency institutions of cases suitable for treatment therein

---

THE LANCET: SUBSCRIPTION RATES

Inland	One Year	£2	2	0
	Six Months	1	1	0
	Three Months	0	10	6
Abroad	One Year	2	10	0
	Six Months	1	5	0
	Three Months	0	12	6

Subscriptions not paid in advance are charged out at the published price of 1*s* per copy, plus postage Cheques and P O 's (crossed "Westminster Bank, Ltd, Covent Garden Branch") should be made payable to The Manager, The Lancet Offices, 423, Strand, London, W C 2

SMALL ADVERTISEMENT RATES.

Books and Publications Official and General Announcements Trade and Miscellaneous Advertisements	Four lines and under 6*s* 0*d*

Every additional line 1*s* 6*d*

For complete scale of advertisement charges apply to The Manager

---

INDEX TO "THE LANCET," Vol. I, 1926

The Index and Title-page to Vol I, 1926, which was completed with the issue of June 26th, is now ready A copy will be sent gratis to subscribers on receipt of a post-card addressed to the Manager of The Lancet, 1, Bedford-street, Strand, W C 2 Subscribers who have not already indicated their desire to receive Indexes regularly as published should do so now.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, London, W

Monday, Sept 6th, to Saturday, Sept 11th —Central London Ophthalmic Hospital, Judd street, W C Series of lecture-demonstrations every afternoon for one month on all branches of Ophthalmology—Bethlem Royal Hospital, St George's Fields, S E. Course in Psychological Medicine beginning Sept 7th Every Tuesday and Saturday at 11 A M, lecture demonstrations Copies of syllabuses of above course and information on post graduate work generally obtainable from Fellowship of Medicine

Appointments.

Anderson, J C, M B, Ch B, F R C S Edin, has been appointed Surgical Registrar to the Sheffield Royal Hospital

Richardson, R P, L R C P Lond, M R C S, Certifying surgeon under the Factory and Workshop Acts for the Bruton District of the County of Somerset

Russell, G B, M B, Ch B Dub, to be one of the Medical Referees under the Workmen's Compensation Act for the Districts of the Bishops Waltham, Petersfield, Portsmouth, and Newport and Ryde County Courts

Westminster Hospital Sorley, J T M.B, Ch B Aberd, and Livingstone, G H, M R.C S, L R C P, House Surgeons Daniel, G M, M B, B S Lond, and Cutting, P E. J, M B, B S Lond, House Physicians

Vacancies.

For further information refer to the advertisement columns

Bootle Borough Hospital —Sen M O and two Jun M O 's £150 and £125 respectively

Brighton, Royal Sussex County Hospital —H S £150

Brighton, Sussex Maternity and Women's Hospital —H S £125

Burma Railways Co, Ltd —Dist M O Rs 1200 per mensem

Canterbury, Kent and Canterbury Hospital —Res M O At rate of £125

Chesterfield and North Derbyshire Royal Hospital —Res Surg O £300

Devonport, Royal Albert Hospital —H S £150

Dover, Royal Victoria Hospital —H S £180

Edinburgh, Royal Mental Hospital, Morningside —Asst M O £350

Exeter, Royal Devon and Exeter Hospital —H P, H S, and Cas O, H P and H S, at rate of £130, and Cas O, £100

Greenwich, Dreadnought Hospital,—H P and H S Each at rate of £110

Leicester, Isolation Hospital and Sanatorium, Groby road —Res M O £350

Leicester Royal Infirmary —H S At rate of £125

Manchester, Ancoats Hospital —H S At rate of £100

Manchester, Babies' Hospital, Burnage lane, Levenshulme —Res M O At rate of £125 Also Res Clin Asst At rate of £50

Manchester, Royal Children's Hospital, Pendlebury —Res M O At rate of £120

Manchester, Royal Children's Hospital, Gartside street —Asst M O At rate of £150

National Hospital for Diseases of the Heart, Westmoreland street, W —Res M O At rate of £150

New End Hospital, Hampstead —Jun Res Asst M O At rate of £150

Newcastle-upon-Tyne Hospital for Sick Children —Sen and Jun Res M O 's At rate of £120 and £100 respectively Also Hon Asst S

Oswestry, Shropshire Orthopædic Hospital —Two H S 's £150

Rochdale Infirmary and Dispensary —Jun H S £200

Rochester, St Bartholomew s Hospital —Hon Pathologist £150

Royal National Orthopædic Hospital, 234, Great Portland street, W —H S At rate of £150

St Helen's County Borough —Asst M O H £650

Helen's Hospital, Lancashire —Res M O £250
John's Hospital, Lewisham, S E —Cas O At rate of £100
Mary's Hospital, W —Asst M O for X Ray Dept
Peter's Hospital for Stone, &c —H S At rate of £75 p a
amaritan Free Hospital for Women, Marylebone-road, N W —H S At rate of £100
heffield Royal Infirmary —H P At rate of £80
ydney University, New South Wales, Australia —Professorship of Psychiatry. £1100
arrington Infirmary and Dispensary —Sen H S £250
estern Ophthalmic Hospital, Marylebone road N W —Sen and Jun Non Res. H S 's At rate of £150 and £100 respectively Also Hon Asst S £100 guineas
est End Hospital for Nervous Diseases, Regent's Park, N W —Jun H P At rate of £100
est London Hospital Hammersmith-road, W —One H P and Two H S 's Each at rate of £100

he Chief Inspector of Factories announces vacant appointments for Certifying Factory Surgeons at Wolsingham (Durham), Ormskirk (Lancashire), Witham (Essex), Gosport (Hants), Measham (Leicestershire), Thame (Oxfordshire), and Newhaven (Sussex)

Births, Marriages, and Deaths.

BIRTHS.

Brain —On August 30th, to Stella, the wife of W Russell Brain, M D , M R.C P Lond., of Stonehill-road, East Sheen—a son.

Clark —On August 15th, at Harthill, Sheffield, the wife of John Nichol Clark, of a son

Low —On August 22nd, at Gloucester place, W , the wife of Dr W Alexander Low, of a son.

MacKeith.—On August 18th, at a nursing home, Oxford, the wife of Dr M H MacKeith, of a daughter

Miller.—On August 25th, at Morven House, Lampton, Middlesex, the wife of Dr F Currer Miller, of a daughter

Montgomery —On August 21st, at Parkside, Feltham, Middlesex, the wife of Dr V C Montgomery, of a daughter

Roberts —On August 23rd, at Vellore, S India, the wife of C L Digby Roberts, M B , Ch.B Edin., D T M. and H Eng , of Mariani, Assam, of a daughter

Wakeley —On August 27th at Sussex House Sutherland-avenue, W 9, the wife of Cecil P G Wakeley, F R C S , F R S E , of a son

Warwick.—On August 30th, at Heathcroft, Hampstead Way, to Joan Warwick, M.R C S , L R C P , the wife of W Turner Warwick, F R.C S —a daughter

MARRIAGES

Hamlett—Watson —On August 26th, at St Martin in-the Fields, London, Ronald W Hamlett, of Winsford, Cheshire, to Constance C M Watson, M.R.C S , L R.C P Lond., of London.

Mackie—Elwes —On August 24th, at St George's, Bloomsbury, by the Rev Charles Mackie, Lieut -Colonel F Percival Mackie, M D F R C S , F R.C P , Indian Medical Service, to Mary Elizabeth Haddon, widow of Gervase Frank Weston Elwes

DEATHS

Adami —On August 29th, J George Adami, C B E , M D , F R S , Vice-Chancellor of the University of Liverpool.

Depree.—On August 30th, Hubert Templer Depree, M.B , B Ch. Camb M R.C S Eng , L R.C P Lond., of 1, Higher Summerlands, Exeter

Fraser.—On August 19th, at Raipur India, of cholera , Lieut -Colonel W J Fraser, F R.C SE , I.M S., third son of the late John Fraser, Abbotsford, Ceylon, and Wolf Crag, Bridge of Alan, aged 45

Gasperine.—On August 13th suddenly in New York, U S.A., John Jones Gasperine, M R.C S Eng , L R.C.P Lond , D.P H , of Willoughby road, Hampstead.

Glover.—On August 25th, in Spain, of diabetes after ten years' illness heroically borne, James Glover, M.B , Ch.B , of Bentinck-street, W , aged 44

Molony —On August 20th, at Porlock, Somerset, FitzJames Molony, L.R.C P & S I , aged 68

Powell.—On August 28th, after a few hours' illness at The Firs Worcester road Sutton, Samuel Arthur Powell, O B E., M D Belf., of Harley-street, W , and late of Bombay

Price.—On August 16th, at Uppermill, David Price, M R.C S , L.R.C P

N.B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

Notes, Comments, and Abstracts.

FOCAL SEPSIS IN ITS RHINOLOGICAL ASPECT *

By T B Layton, D S O . M S Lond ,

SURGEON TO THE THROAT AND EAR DEPARTMENT, GUY'S HOSPITAL

Excluding direct extension through the tissues or along a surface an infection may spread by a lymphogenous or an hæmatogenous route The idea of the spread of acute disease from one site in the body to another by the blood stream has long been present in the mind of the physician It preceded the discovery of micro-organisms , it is one of the first that the student grasps on his entry into the wards He realises the danger of suppuration in a distant joint from acute osteomyelitis, whether of the temporal bone or of the head of the tibia He is on the look-out for an abscess of the liver in appendicitis, or of the lungs in mastoiditis, and he calls the resulting condition " pyæmia " The idea that a chronic disease may have a similar causation is more recent, and the student meets it at a later stage It is prominently before us at present, and is in my opinion destined to have a permanent place of growing importance among our concepts of disease This, like all new ideas, requires careful thought

Sepsis as a Cause of Chronic Disease

We mean by it that many chronic diseases are due to the constant absorption into the blood of organisms or of their toxins from some site distant from any lesions produced in the course of the chronic disease The name of ' focal sepsis " has been given to this idea, and the place in which the organisms are developing or are manufacturing their toxins is known as the " focus of infection " or the " site or source of sepsis " These organisms may be residing in this site without ever having given rise to any symptoms therein, or to so few and trivial that the patient has taken no notice of them. On the other hand, they may have caused one or more attacks of acute symptoms which have entirely subsided, but which the patient has not connected with the chronic disease from which he is suffering It is clear that if this concept of disease be correct the right line of treatment is to stop the constant absorption of organisms or of toxins into the blood-stream by removing or otherwise dealing with the source of sepsis If we can do this we may expect, if not to cure the disease, at any rate very materially to alleviate the sufferings of the patient and to stay the further progress of the malady It is also clear that if this prove to be the correct explanation of the pathology of any given chronic disease, it may also be the explanation of any other chronic disease of unknown pathology Therefore it is right for us to investigate this latter disease along similar lines, so long as we are not doing our patients any harm thereby or subjecting them to any unnecessary risk. The situations in the body which have been found to be possible foci of infection may be put under three groups First, there is the alimentary group, which includes such sites as the gall-bladder, the appendix, or the colon as a whole , secondly, there is the genito-urinary group, which includes the glands of the prostate in the male and the cervix uteri in the female . and thirdly, the group in the upper respiratory tract which is our more immediate business

When, then, we have a patient suffering from some chronic disease the pathology of which, we think, might be explained on this concept of focal sepsis, we should, if we were scientific, investigate all the sites in each of these three groups , we should see whether there is any disease in all or any, and whether we can cultivate a pathological organism therefrom But in clinical medicine we can never be scientific , we can only apply the advances which science gives us to our art of healing Or put differently, the science of the clinician differs from the science of the laboratory worker, and the former is most truly scientific when he realises his limitations and does not try to plan his investigations on a patient along the same lines as the laboratory worker plans experiments which are subject to controls

Thus, in the hypothetical case before us, the routine investigation of the first two groups is ruled out, the first by danger and by expense, the second by decency. To the investigation of the third group these objections do not apply, and this may explain why, in spite of certain brilliant successes, there have been many disappointments For the person who examines such a case may be a believer, who quite subconsciously sees what he wants to see or what he is asked to see , or he may be a conscientious sceptic who will not make a deduction until he has proof, who will not report definitely that there is a source of sepsis in the upper respiratory tract unless he is certain that it is there, and who requires the more proof to give this report the more often he hears of its being given by other observers on what he believes to be insufficient evidence The relative ease with which the potential foci are investigated forms, then, one difference between the third and the other two groups

---

* Based on a clinical lecture delivered at Guy's Hospital.

Various Sites of Origin

The various sites in the upper respiratory tract which are or may be foci from which sepsis spreads to different parts of the body fall under three subheadings those connected with the teeth, those connected with the submucous lymphoid tissue, and those connected with the mucous membrane of the nose and its accessory sinuses It would as ill behove a rhinologist to give opinions on dental surgery as upon urinary surgery, were it not that the former is so near his own part of the body that he is bound to acquire opinions on certain points which must be considered later Of the lymphoid tissue it is the faucial tonsils with their deep crypts which form the important masses, the pharyngeal and lingual tonsils and the smaller masses of lymphoid tissue scattered about the lateral and posterior walls of the pharynx have not as yet been accused of being sites of sepsis, nor would it appear that they are likely so to become. With the nose it is different Up to now it has been the sinuses to which attention has been paid ; it may be a profitable line of investigation to consider whether the mucous membrane of the nasal fossæ proper, with the nasopharynx added, may not equally be a site from which organisms or their toxins may spread to distant parts of the body For the present, however, we may say that the two structures which have to be considered are the masses of lymphoid tissue which form the faucial tonsils and the mucous membrane lining the accessory sinuses of the nose Now both these structures have this in common—that it is a part of their function to destroy the organisms which are constantly entering the nose and mouth This paradox is therefore true that these structures are most normal when they show signs of resistance to infection—in other words, when they are inflamed In this lies the second great difference between these and the sites of sepsis in the other groups that I have mentioned If the bacteriologist can find a streptococcus in the fæces, it is probable that this organism is present in the colon to an extent which is above the normal If after massage of the prostate organisms can be found in the threads that are in the urine, it may be considered conclusive evidence that here is a potential focus of infection, and the same may be said when a pathogenic organism is cultivated from the cervical canal. But, in the present state of our knowledge, it cannot be said that the mere finding of an organism in the crypts of the tonsil before or after removal, or the mere presence of an organism in the washings from a sinus, is evidence that either of these positions is a site from which focal sepsis may arise In other words, a minor degree of infection of the tonsil or of an accessory sinus is neither a clinical nor a pathological "entity," whatever that term may mean.

Condition of the Tonsils.

In considering whether the tonsils may be a source of sepsis there is a considerable number of cases in which the rhinologist can say that there is no doubt the tonsils should be removed, whether there be some distant disease or no ; when this is done it is possible to watch the effect of their mere removal upon the course of disease and to make cultivations from them and see the effect of autogenous vaccines made from any pathogenic organism found therein When all the evidence has been obtained one may say whether the condition of the tonsils had any relation to the disease in question At the other end are a few patients in whom the rhinologist may say he does not think the tonsils can be a source of sepsis Here he can seldom speak with dogma, and, indeed, it is doubtful whether he can ever long withstand cross-examination on this point In fact, we may say without much fear of contradiction that the rhinologist can never be absolutely certain that the tonsils in any given case may not or cannot be a sourse of sepsis Between these two there lies a large number of cases, perhaps the majority, in which it is a nice point whether or no the tonsils are a source of sepsis, and where the question of removal depends upon the importance to the patient of excluding every possible site from which the sepsis may arise The decision on this point must lie with the physician He alone can weigh all the pros and cons ; he alone can weigh the likelihood of improvement of the general disease as the result of the report of the rhinologist, against the risk of the operation and in the light of other reports of other specialists who deal with different parts of the body—parts which may be, as it were, competitors with the tonsil for priority as sources of sepsis The relation of the physician to the rhinologist may be a three-fold one The former may, in the first place, instruct the latter to remove the tonsils, having made his own decision as to their condition The rhinologist is then the mere hand-worker, devoid of responsibility for the decision, except that he should give warning if he thinks the physician has not adequately estimated the risks of the operation In the second place, he may ask the rhinologist his opinion as to whether the tonsils are a source of sepsis without relation to the specific disease This is perhaps the best relationship of the three. The rhinologist will consider the condition of the tonsils and the history of any symptoms which may be referred to the throat This two-fold investigation is very necessary It is a condition in which the history, where properly obtained without suggestion and without vagueness, is almost as important as is the observation of the parts It is but seldom that the tonsils can definitely be said to be a source of sepsis unless some symptoms referred to the throat have occurred There must always be doubt in those cases in which the patient has never had a suspicion of any trouble with his throat until some general disorder has suggested the possibility of the tonsils being foci of infection Lastly, the physician may ask whether the condition of the tonsils bears any relation to the disease from which the patient suffers In this the rhinologist should be careful how he approaches the case ; it is not for him to give opinions based on general observations of disease, but only such as can be based upon such evidence that he may obtain from the case before him This evidence is limited to the association in time, of some acute infection of the throat, and either the onset or an exacerbation of the general disease. The patient may have observed that such exacerbations coincide with or follow after an acute tonsillitis or that the original onset came after a very severe or initial attack of this disease Sometimes it is possible to observe changes in the throat during such an exacerbation, though the physician usually has a greater opportunity of watching these than has the rhinologist

Sinus Infection

The problems connected with the sinuses are similar There are those cases in which suppuration in some cell is found, and the treatment of this is likely to lead to great improvement in any disease At the other end of the scale it is impossible for any rhinologist dogmatically to say that, in the case before him, there is no sinus disease Tucked away in some far distant cell may be a bead of pus which gives no evidence within the nose either by anterior or posterior rhinoscopy Perhaps it is this impossibility of giving a negative opinion that causes a positive one to be made so often The extent to which investigations should be made to find such a possible bead of pus is again a matter for the physician to decide The puncture of the antrum is an easy operation, relatively devoid of danger, which yields results that are generally trustworthy Not so the similar exploration of the sphenoidal or posterior ethmoidal cells ; the results obtained from the washings are much less reliable , less easy and certainly not devoid of danger ; sometimes even the cannula cannot be passed without a preliminary operation to relieve some obstruction at the front end of the nose, as when a deviation of the septum blocks the whole nasal fossa How far the rhinologist should go in such an investigation must be a matter for the physician It seems to be quite wrong to do so in any and every case where the disease has gone so far that much relief cannot be expected, or where the nasal examination reveals so healthy a mucous membrane that the chances of finding sepsis are minimal Where the disease is in some early state, where if not checked it will cripple some young person, or spoil some vigorous life, almost any line of investigation may be justified The physician alone can decide when he has received the rhinologist's report

Short of suppuration there may be inflammation in the sinuses, and this brings us to a most difficult problem. difficult to diagnose when the mucous membrane of a sinus is so inflamed, and to decide whether such a minor inflammation may act as a source of sepsis causing some distant lesion In the present state of our knowledge, it would seem that we must observe the utmost caution in any such case We must bear in mind the possibility of such a condition being present and acting as a source of sepsis, but we must not open every sinus from which a few organisms and pus cells may be extracted.

Dental Sources.

The dental diseases which are said to act as sources of sepsis are periodontitis, apical suppuration, and general caries of the teeth There is no doubt that the last should always have attention paid to it before anything else is done It is remarkable that physicians seem to look upon this as the least likely of the three to be the cause of focal sepsis ; they have even been known to send to the rhinologist for report patients with mouths full of broken off stumps and of molars with large cavities The other two, again, are diseases about the presence of which there may be room for great differences of opinion among dental surgeons In deciding whether the tonsils should be first removed or the mouth made edentulous the former may well claim priority, unless the evidence in favour of the latter is overwhelming

It is a great loss for a patient to have every tooth removed, especially a woman approaching middle age There is many a one who has been changed from youth to old age in a few days by the loss of all her teeth Further, the very plates the dentist makes may themselves act as a source of sepsis as much as the teeth he has previously removed I am not yet sure that this is so, but I shrewdly suspect it, and I ask you to follow up this train of thought and see whether you can get any evidence on the point

---

HELIOTHERAPY NATURAL *VERSUS* ARTIFICIAL.

To the Editor of THE LANCET

SIR,—In your review on July 10th of Dr Saidman's book, "Les Rayons Ultra-Violets en Therapeutique," the following passage occurs —

> "We think it unfortunate that the author pins his faith so exclusively upon a photo electric explanation of all the complex effects in living things which follow upon ultra violet exposure No doubt it plays some part in some of the processes, but there is so little direct experimental work in support of the theory that it would seem better to keep an open mind on the subject, rather than to reject summarily other facts which may bear upon the vital processes which are quickened so amazingly by judicious exposure to the rays "

I wish to confirm the reviewer's opinion from considerable personal experience

Heliotherapy was well known to the ancients, but when science discovered the curative properties due to the ultra-violet or invisible actinic rays outside the solar spectrum, medical attention turned to devising apparatus by which those rays could be produced artificially whenever and wherever required Thus were brought about the quartz lamp and other electrical devices which generate ultra-violet rays, and these have been used with marked success in urban communities where the upper atmosphere is nearly always laden with soot and other impurities, or where the geographical position and general physical conditions tend to the frequent occurrence of fog, cloud, and lack of sunshine

At first it was considered possible that exposure of the body, either wholly or in part, to artificial sunlight would be as efficacious as exposure to the sun itself, but this is now proved by actual experience to be an error Natural heliotherapy possesses further advantages derived from climate and locality, whether on the seashore or in the higher altitudes of the Alps This can be partially explained by the inability to reproduce in our hospitals, nursing homes, and sanatoria the scenic surroundings, the exhilarating effects of the pure and bracing atmosphere, and the results of solar radiation due to reflection from the immense mirror of the sea or from the snow fields in the mountains This is not to say that heliotherapy cannot be used with great advantage where the atmospheric and climatic conditions are less favourable, as will be realised by all who have read the recent note on heliotherapy in pulmonary tuberculosis, published in THE LANCET by Dr Wood, the medical superintendent of the Sanatorium for Sailors at Liphook

It is to the phenomenon of reflection and consequent multiplication of the actinic rays that Prof Gioseffi and other specialists attribute the rapid curative power of natural heliotherapy in the case of children and young people suffering from anæmia, rickets, enlarged glands, and naso-pharyngeal trouble, where the treatment by artificial heliotherapy is tedious and uncertain The success of the treatment of surgical tuberculosis by exposure to the sun combined with sea-bathing, was well illustrated in the columns of THE LANCET in an article by Mr Battle describing the treatment at Dr Pascal's institution of Santa Maria, Cannes For lupus and other skin diseases, where the general health of the patient is otherwise good, the artificial treatment has the advantages that the rays can be restricted to the affected part and the patient can be cared for in strict privacy, but in many other circumstances, and especially where there is mental depression, treatment by natural heliotherapy, particularly in a special home, affords that most useful adjunct, the involuntary suggestion of the other patients My experience at the Villa Iris, Alassio, confirmed by sojourn in other heliotherapeutic institutions, convinces me how much the general environment conduces to the betterment of many classes of patients, especially those of the neurasthenic type

Such patients on their arrival at the home are inclined to keep to their own rooms and when out of doors to sit alone or wander about by themselves This is encouraged here for the first few days and the newcomers are not asked to do anything except to take their sunbaths and to rest during prescribed hours Rested and soothed they gradually become aware—at first subconsciously, but in a few days consciously—of the happiness of their fellow patients They notice their merriment when going into the sea or basking in the sun in bright bathing costumes until it is time for another bathe After a few days the depressed subjects begin to think that life is worth living and gradually they mix with the other patients, enter into their interests, and take part in games At the end of the first fortnight they feel the improvement in both mental and physical condition following on the exposure to the sun and air, the sea bathing, the mental diversion, the prescribed periods of rest, and the suitable food, and from this point the progress should be satisfactory.

At Alassio, on the Italian Riviera, the temperature of the Mediterranean varies from 70° to 78°F during the months of July, August, and September, and it is no uncommon thing for people to bathe four and five times a day Nor are the summer months unendurable on account of the heat. At Alassio, speaking from personal experience, although the temperature is high it is always tempered by breezes, and the atmosphere is dry so that the heat is never oppressive This fact should be more widely known. The "sabbiatura," or hot sand bath, we have found is most valuable for the treatment of muscular rheumatism, neuritis, synovitis, and forms of osteo-arthritis Finsen said : "Nothing can replace the light of the sun which is the only, the indispensable, the irreplaceable source of vital energy "

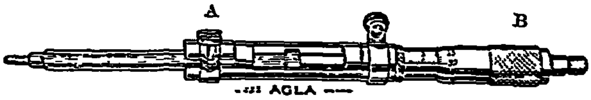
I am, Sir, yours faithfully,

F. ALEX BARTON

Villa Iris, Alassio, Italy, August 20th 1926

THE "AGLA" MICROMETER SYRINGE APPARATUS

THE accurate instrument for the measurement of extremely minute quantities of liquids, described by Dr J W Trevan in the *Biochemical Journal* (vol xix , No 6, pp 1111), is now obtainable from Burroughs Wellcome and Co It is known as the "Agla" Micrometer Syringe Apparatus and is suitable for the measurement of volumes from 0 5 c cm (with an error of less than ±0 1 per cent) to those as small as 0 001 c cm (with an error of less than 5 per cent) In immunological work the instrument can measure volumes of the order of 0 01 c cm with an error of less than ±1 per cent In the illustration the instrument is shown assembled for use The syringe is firmly clamped at A and should be so arranged that it is not quite empty when the micrometer is screwed down to the zero mark Supplied with the apparatus is a syringe of such a size that a 0 5 mm movement of the piston (one turn of the micrometer head B) will eject 0 01 c cm The syringe is filled by unscrewing the micrometer head and drawing up fluid by moving the piston by hand If the filled instrument is allowed to stand for any considerable length of time, evaporation will cause the liquid to retreat slightly from the end of the needle so that, after standing, the first 0 01 c cm should be rejected



The apparatus enables a fine degree of accuracy to be attained in various delicate laboratory processes such as immunological titrations with very small quantities of serum , the calibration of pipettes of small volume (for this purpose an ordinary fine hypodermic needle should be used and the required volume injected into the pipette by inserting the needle just inside the end of the capillary), microchemical titrations and micro-gas analyses, in which the instrument may be used as a burette

EVACUATION OF WOUNDED BY AIR

IN the French Army 3000 wounded men have been evacuated by aeroplane during the last six years, and the *Archives de Medecine Militaires* proposes to issue from time to time reports upon the current methods The original idea was to make the wounded more comfortable, but that motive has dropped into the background, the main aim now being to save life by swifter transit to hospital A perforating wound of the abdomen must be operated on within six or at most eight hours if it is to recover, and the best treatment for other wounds is primary suture, quite likely to succeed if done within six hours with gradually lessening hope to the forty-eighth hour, after which it will do no good Then, too, the dangerously wounded with fractures of thigh, spine, or skull should be taken at once to base hospitals The great difficulty of aerial evacuation is the want of landing grounds near to the fighting line and near to the hospital Some earth travel is unavoidable on each side of the air trip but it must be shortened as much as possible The general service French air-ambulance is the Breguet limousine, which carries two patients lying and one sitting, weighs two tons loaded, and travels at 100 miles per hour, but that requires a landing ground of 660 yards square, not so easy to find, especially at the front Another type of air ambulance has now been put in service, the Hanriot HD 14, which carries only one lying case, weighs three-quarters of a ton, has a speed of but 70 miles per hour, and requires a much smaller landing area. These gave satisfaction in Morocco last year as they could go up close to the front line. They work together in pairs, pick up each one wounded man, and take him back to an arranged landing place where their loads are transferred to a waiting *Breguet*, and then return to the front for more There were 26 of them in Morocco, and 10 are promised for Syria They are considered to give the best results that can be expected until the helicopter is further developed

PUBLIC HEALTH IN NORTHERN RHODESIA

A REPORT on the affairs of this Protectorate for the year 1924–25, signed by Mr Richard Goode, the chief secretary, has been issued by the Colonial Office In this it is stated that there has never been a complete census of all persons in the protectorate, but that the figures relating to the European population are known, whilst a fairly accurate estimate of the native population may be obtained from the native tax returns By this means it is computed that the native population numbers rather more than 1,100,000 No figures to show the birth- and death-rates among natives, or their immigration and emigration, are available The European population on April 1st, 1924, numbered 4182, of whom 1919 were adult males and 1016 adult females During the year 107 births and 40 deaths occurred The Asiatic population is estimated to be approximately 60, and the number of "coloured" persons about 150 The total of immigrants, exclusive of natives, was 438, of whom 407 were British subjects, 15 were American, and 16 belonged to other nationalities

The Government maintains European hospitals at Livingstone, Broken Hill, Lusaka, Mongu, Fort Jameson, and Kasama Native hospitals are also maintained at these places and at Magabuka, Fort Rosebery, and Ndola During the year 495 Europeans were admitted to hospitals, and of these nine died No figures as to the number of Europeans treated outside the hospitals are available The total number of deaths among Europeans was 40, of these 8 were due to blackwater fever, 2 to malaria, 2 to enteric, 1 to dysentery, and the remainder to various non-climatic diseases, besides 1 from accident, 1 from suicide, and 3 from premature birth In the same period 5887 natives were treated as in-patients and 49,575 as out-patients Among these there were 368 deaths Amongst the natives influenza accounted for 1500 cases, of which 74 died, 1183 of these cases and 51 of the deaths occurred at Broken Hill

The Incidence of Disease

Syphilis is widely distributed, but it has not been found possible to do more than provide treatment for those who make application for it, and they are few Similarly, the spread of tropical ulceration is due largely to the return to their homes from places of employment of untreated or incompletely treated natives, who will rarely consent to the rather lengthy treatment necessary for a cure Leprosy cases reported numbered 2789, an increase of 120 on the total reported in the previous year, but it is doubtful if these figures show the full extent of the disease No compulsory segregation has been attempted, such a policy could only be made effective by stringent regulations, backed by a larger expenditure of money than can at present be made available Most satisfactory results in the treatment of yaws have been obtained from the use of bismuth and sodium tartrate This treatment was actively carried out in the districts on the Congo border where the disease is most prevalent Arrangements have been made to provide treatment for the old or infirm who are unable to travel to a hospital to get it

Small-pox, originating in Angola, appeared in the Balovale sub-district of Barotseland in August and spread to two neighbouring sub-districts, 128 cases and 27 deaths being reported By stringent preventive measures the outbreak was soon controlled Another outbreak, introduced from the Belgian Congo, occurred in the Kasempa and Mweru-Luapula districts, but it was also kept under control Altogether, in the whole territory, 201,366 persons were vaccinated in the course of the year

Sleeping sickness and the existence of tsetse-fly continue to provide a problem, the solution of which is of vital importance to large areas of the territory Nevertheless, during the year, investigation into the disease could be carried on in only one area, that of the Luangwa Valley, where Dr. Kinghorn was at work That part of the valley which was the subject of this year's investigation stretches from Fundu at the southern end for a distance of 400 miles, in a north-westerly direction to where the Wira River joins the main stream, and as the valley may be said to average 30 miles in breadth, comprises an area of some 20,000 square miles The mean altitude is about 2300 feet above sea-level, and the climate is more tropical than most of the rest of the territory Dr Kinghorn found that an exceptionally large proportion of waterbuck and bush-buck were infected with *Trypanosoma rhodesiense* and noted that waterbuck were extremely plentiful in the vicinity of certain villages which had suffered severely from sleeping sickness He lays stress, however, on the fact that the infection has never assumed epidemic proportions The oldest natives stated that they had known the disease all their lives, and such evidence as is available tends to corroborate this Their testimony also agrees with the results of this and previous investigations to the effect that the disease appears in an extraordinarily sporadic manner, that cases are widely scattered, and that its incidence is small Dr Kinghorn's conclusions support the theory that the trypanosoma is essentially a parasite of game, and that man is ordinarily resistant to infection There is no evidence, however, to show that he acquires any immunity from it Limited resettlement was permitted during the year in the de-populated areas on the shore of Lake Tanganyika, but, though *Glossina palpalis* is still abundant there, no case of sleeping sickness has been reported It is difficult to account for this, but the suggestion has been made purely as a conjecture, that the trypanosomes may possibly have died out during the intervening years

PROGRESS IN FIJI

In his report for 1924 the Hon D R Stewart, Acting Colonial Secretary, mentions that, historically, the most important feature of the year was the celebration at Levuka, on Oct 10th, of Fiji's jubilee as a Crown colony Fifty years have brought about a vast change in the constitution of the colony's population, which at the time of cession consisted almost entirely of aboriginal natives and some 2000 Europeans and other whites The native population at the present time, while being still the largest section of the community, numbers only approximately 20,000 more than the total Indian population, and, notwithstanding repatriation, less than three times the number of Indians born in the colony since immigration first commenced in 1879 The total population, according to the 1921 census, was 157,266 (84 475 native Fijians, 60,634 Indians, 3878 Europeans, and some Polynesians and others) The health of the colony during 1924 was satisfactory There were very few cases of dysentery, and, apart from a localised epidemic at Nadi, very little typhoid fever In the later months of the year influenza was prevalent throughout the colony, it was of a mild type Infantile mortality, which is satisfactorily low among other races in the colony, is still too high among Fijians The campaign against ankylostomiasis was continued during the year, and nine-tenths of the population have now received treatment Marked improvement in general health has resulted. Examination shows that after the second treatment the number cured is 73 per cent and that the infection remaining is slight The Colonial War Memorial Hospital of 113 beds at Suva and the Lautoka Hospital of 40 beds for East Indians, serving a population of 35,000, are now completed Over 5000 Fijians received salvarsan treatment for yaws. Fourteen lepers were discharged from Makogai Asylum, as all signs of active disease had been absent in each case for over two years The births during the year were Europeans, 136, Fijians, 3015, Indians, 2280, and others, 139 The deaths were Europeans, 42, Fijians, 1080, Indians, 325, and others, 42 The vaccination of native children was continued, over 1400 being inoculated in the course of 1924 The Indian population, which has now increased to 65,000, is for the most part resident in Suva and the sugar centres of the colony, it is in the main an agricultural population, though the numbers of Indians who are engaged in commercial pursuits tend to increase annually The progress of the Fijian native has been considerable during the last 50 years. The mean shade temperatures at Suva for the year were 71 3° minimum and 82 4° F maximum, and the total rainfall at the same place was 108 80 inches

THE EFFECT OF ZINC ABSORPTION UPON HEALTH.

ZINC is so commonly associated with lead, arsenic, and cadmium that symptoms among workers where zinc ores are smelted and refined, and zinc products are made, may possibly be due to other substances In the August number of *Industrial Hygiene* R P Batchelor, J W Fehnel, R M Thomson, and K R Drinker discuss cases reported by others from this viewpoint, and find them wanting A crucial test is then described in detail wherein 24 workmen who, over a period of years from 2 to 35 had been regularly exposed in atmospheres dusty with metallic zinc, zinc oxide, and zinc sulphide, were placed under observation in hospital and thoroughly overhauled The interest in the test centred on the fact that the ore, Franklinite, from which the various dusts originated contained only minute and negligible traces of lead, cadmium, or arsenic Three case-reports are given in detail, in addition to past history each system of the body was examined intensively, including radiography of the chest Nothing abnormal could be detected, even though the zinc content of the blood per 100 c cm was 0 153 mg as against 0 387 for controls and of the urine was 1 06 mg as against 0 80, while zinc in 24 hour fæces was 10 77 mg as against 0 32 The evidence is clear that abnormal amounts of zinc may enter and leave the body for years without causing symptoms detectable clinically or by laboratory examinations

Cameron Prize Lectures

ON

SOME RESULTS OF STUDIES IN THE PHYSIOLOGY OF POSTURE

Delivered at the University of Edinburgh, May 19th and 20th, 1926,

BY RUDOLPH MAGNUS,
PROFESSOR OF PHARMACOLOGY, UNIVERSITY OF UTRECHT

PART I

THE study of the physiology of movement is of old origin Movement affords many points of attack for research because by movement changes in the condition of the body or its parts occur, which attract the attention of the observer and can be recorded and measured This is not the case when posture is studied Here we have to deal with a constant condition without apparent changes so that our desire for causality is not stimulated, and we therefore do not immediately suppose that active processes are at work In consequence of this the physiology of posture is of relatively recent date and many facts to be described in these lectures have been discovered by still living physiologists during the last 40 years, among whom Sherrington must be named in the first place The chief result of these investigations is that posture is an active process, and is the result of the cooperation of a great number of reflexes, many of which have a tonic character Many parts of the central nervous system contribute to the function of posture, the importance of the spinal cord and the brain-stem we understand up to a certain limit, whereas the activities of other parts, especially of the cerebellum and basal ganglia, are still obscure

For the purpose of these lectures I class postural activities under the following headings —

1 *Local static reactions*, in which only one part of the body—e g , one limb—is concerned

2 *Segmental static reactions*, which involve one segment of the body—e g , both hind-limbs, both fore-limbs, or the neck

3 *General static reactions*, in which more than one segment or even the whole body comes into action

The aspects of these general static reactions vary considerably in accordance with the part of the central nervous system which governs in different experiments the posture involved We can thus distinguish (*a*) static reactions of the oblongata animal (decerebrate preparation), in which the spinal cord is in functional connexion with the medulla oblongata only, (*b*) static reactions of the mid-brain and thalamus animal, in which in addition to the bulb the mid-brain centres also take an active part, (*c*) static reactions of the intact animal, in which the cortical centres cooperate

The importance of the cerebellum and of the basal ganglia will not be discussed in these lectures.

LOCAL STATIC REACTIONS

The limbs of mammals, as of other vertebrates are built up of bony segments, linked by a complicated arrangement of ligaments and moved and fixed by muscles, fasciæ also play a role The whole system is easily movable in different directions Our problem is to explain how such a movable limb is at times used as an *instrument* for very different purposes (such as scraping, scratching, fighting &c) and moved freely in all joints, whereas at other times it is transformed into a stiff and strong *pillar*, which gives the impression of being one solid column, able to carry the weight of the body Experiments have shown that this is accomplished by a series of local static reflexes

We were confronted in the laboratory with this problem during the investigation of decerebellated animals, which had been operated upon by Dr. G G J Rademaker, and of which the condition of muscle-tone had to be followed during the course of many months It soon became evident that this was not a simple task, and that the state of tone of a limb at any given moment depended greatly upon the way in which the tone is investigated If, for instance, a dog is lying down in the lateral position and the resistance of one fore-limb against passive flexion is measured with the hand and fingers flexed, often no resistance can be felt But if the latter are extended and pressure exerted against the pads of the foot, then the fore-limbs become strongly extended and can hardly be flexed at all The same difference can also be demonstrated in intact animals We therefore decided to make a more detailed investigation of these reactions In addition to Dr. Rademaker, Dr R Schoen (Würzburg) and Dr E A Blake Pritchard (London) took part in this research, Dr Schoen experimenting on the general conditions for these reflexes and on a graphical analysis of the muscles of the fore-limbs, while Dr Pritchard investigated the hind-limb in the same way

The best way to evoke this static reflex is to press against the pads of fingers or toes and to dorsiflex the hand or the foot Then the limb becomes more or less stiff, and is, in the prone position of the animal, able to carry the weight of the body

Two different stimuli cooperate in evoking this reflex

1 The *proprioceptive* stimulus evoked by the dorsiflexion of the distal parts of the limbs (fingers and hand, toes and foot) These proprioceptive influences can be isolated by cutting the local sensory nerves for the skin of hand and foot They disappear after cutting the tendons of all plantar or volar flexor muscles to the distal part of the limb

2 The *exteroceptive* stimulus evoked by the contact of the pads of the feet with the ground If a decerebellated dog be placed in the supine position with the head ventroflexed by 90°, then the hind-limbs are usually flexed in all joints A very slight touch to the pads of the foot is sufficient to evoke a strong tonic extension of the whole hind-limb, even if dorsiflexion of foot or toes is carefuly avoided by keeping the fingers only just in contact with the foot It appears as though the slowly extended foot were being drawn after the receding finger by some magnetic force The reflex has therefore been called the "magnet reaction" As soon as the finger is removed, the limb goes back into flexion The exteroceptive stimulus can be isolated by cutting all the tendons to the foot or hand and disappears only after severing the sensory cutaneous nerves to the foot

The static response ends and the whole limb is loosened and becomes free for movement by the removal of the two above-named stimuli, which takes place as soon as the limb in the standing animal is lifted from the ground, but, as is usual in very important functions, an active process cooperates As soon as the distal part of the limb is flexed in the volar or plantar direction, the limb is reflexly loosened and prepared for movement

We call the whole process the *supporting reaction* The passing from the flexible condition to the stiffness of a support is called the *positive supporting reaction*, whereas the loosening of the limb is called the *negative supporting reaction*

A *The Positive Supporting Reaction*

This reflex can be studied in the intact animal as well as after extirpation of the whole cerebrum or cerebellum It is also present in certain stages of general narcosis The following description is based especially upon the findings in the fore-limbs of cats The results on the hind-limbs will only be mentioned if necessary The effective stimulus for this reflex is stretching of the flexor muscles of fingers and hand The deep flexor muscle of the fingers alone is sufficient to evoke the reflex But also other flexor muscles can serve this purpose The exteroceptive stimuli from the pads of the toes coöperate to the same effect

1. The *anatomical arrangement* plays only a rôle of secondary importance for the establishment of the supporting reaction Formerly there was a general belief in the importance of the ligaments for the fixation of the joints, but at present there is a tendency to believe that the tonic activity of muscles is the most important factor

That the arrangement of ligaments cannot explain the supporting reflex follows from the fact that in cats and dogs during ordinary standing all three main joints of the hind-limbs are semiflexed, and can be moved from the resting position in both directions Also in man in easy standing the ligaments of the leg are only of secondary importance. The muscles have the function of supporting each part of the limb and the body as a whole For that purpose they are brought into tonic contraction by impulses from the central nervous system The supporting reaction is reflex This is already proved by the fact that simple pressure against the pads of the foot is sometimes sufficient to evoke the reflex by exteroceptive stimulation The following observations point in the same direction

In the first hours after extirpation of the fore-brain the supporting reaction is absent in spite of the presence of sufficient muscle tone The post-operative shock has suppressed the reflex in an animal, which can right itself and even walk Several weeks or months after severing the posterior roots to a fore- or hind-limb the movements are fairly well restored, and it is possible, by changing the position of the head, to increase the tone of the desensitised limb , in spite of this no trace of a supporting reaction can be felt. In deep narcosis it is impossible, by changing the position of its most distal part, to transform the limb into a supporting pillar

All these facts show that the anatomical arrangement alone, even if the muscles have some tone, cannot explain the supporting reaction

One arrangement deserves special attention the two-joint muscles A part of the flexors of hand and fingers stretched during standing takes its origin from the medial epicondyle of the humerus, and can extend the elbow In doing this the biceps is stretched and, if this muscle comes into tonic contraction, it can extend the shoulder, which in turn stretches the caput longum of the triceps, so that contraction of this muscle can extend the elbow Simultaneous contraction of biceps and triceps fixes not only the elbow, but also the shoulder In the completely relaxed limb under deep narcosis or immediately after death this mechanism does not act, only extension of the elbow can be evoked by extension of the shoulder , but in the normal animal or when, after death, the muscles become rigid from rigor mortis, the two-joint muscles exert their influence For this effect therefore reflex tension of the muscles is a necessary condition

From the foregoing remarks it follows that the anatomical arrangement by itself cannot explain the supporting reaction, but constitutes the mechanism through which the physiological processes can play their rôle

2. Of great importance are the *myotatic reflexes* of Liddell and Sherrington These authors found in decerebrate preparations tonic reflex contractions caused especially in the extensor muscles by even slight stretch of the muscle The increase of tension is confined to the muscle, which is stretched, and even one part of a muscle can show this purely proprioceptive reflex, if this part only is subjected to stretch According to Forbes, Cobb, Fulton and Liddell, contraction may be confined to only a part of all the fibres of a muscle, just sufficient in number to counterbalance the stretch, or to carry the weight which causes the increase of tension If these muscle-fibres become fatigued, other fibres go into contraction, and alternation of the active fibres makes it possible for the muscle as a whole to be indefatigable during myotatic activity The reflex begins with a stretch and an increase of tension, and continues as maintained tension at a constant, increased length The weight being thus just counterbalanced by the particular muscle-fibres in action at the moment, the others are prepared to move the limb or body, just as smoothly as if no weight at all was present.

This myotatic reflex comes into play in the flexor muscles of hand and fingers, which are stretched during standing by the dorsiflexion of these parts of the limb, and therefore react by increase of tension In other muscles of the limb also, especially in the extensors of elbow and shoulder, if they become stretched during static activity, myotatic reflexes may coöperate with the direct supporting reflexes

But besides these myotatic reactions many other reflexes cooperate in the supporting function

3 According to Liddell and Sherrington, the myotatic reflexes in the decerebrate preparation are limited to the stretched muscles, or parts of muscles This is not the case with the supporting reaction in normal or thalamus animals If in experiments with graphic registration one or other flexor tendon to the hand or to one or more fingers is severed from its insertion and connected with a recording lever, it is seen to contract, although not stretched, when the hand and toes are dorsiflexed In the course of the experiments the contraction of all the different flexor muscles during the static reflex has been in turn recorded These facts show that the extension of the flexor muscles during standing sets up reflexes, which tend to bring into play the whole group of flexor muscles on the fore-arm, and that we have to deal with synergistic reinforcement of tonic contraction

4 How do the *extensor muscles* react in the positive supporting reaction ? They are not stretched at all In a long series of marvellous investigations it has been shown by Sherrington that in ordinary *movements* antagonistic muscles obey the law of reciprocal innervation Also in the experiments of Schoen reflex flexion of the hand was accomplished by contraction of the flexors and simultaneous relaxation of the extensors ; and reflex extension of the hand (e g , in the crossed extension reflex) by contraction of the extensors with relaxation of the flexors But as soon as the supporting reflex was evoked by pressure against the pads of the sole and by dorsiflexion of hand and fingers, then there was a simultaneous contraction of both flexors and extensors The functional grouping of the antagonistic muscles differs totally in the supporting reflex from that in ordinary movements the antagonistic muscles exert a synergistic function and the result is *fixation of the joint*

5 The elbow also becomes fixed

(*a*) The fixation against flexion is accomplished by mechanisms differing according to the various possible positions of the fore-limb *In the first place*, as mentioned above, the flexors of fingers and hand, especially the flexor digitorum profundus, take their origin from the epicondylus medialis humeri, and will therefore, if stretched during standing, cause fixation of the elbow directly by myotatic reflexes *In the second place* dorsiflexion of hand and fingers gives rise to reflex contraction of the triceps *In the third place*, stretch of the triceps evokes a myotatic reflex upon this muscle, and finally, if in the supporting reflex the biceps is stretched (by flexion of the shoulder) this also gives rise to a reflex contraction of the triceps

(*b*) The fixation against extension is secured by a reflex contraction of the biceps caused by the dorsiflexion of hand and fingers, reinforced by a reflex, taking its origin in the stretched triceps

All these *different* reflexes cooperate, reinforce, and, if necessary, replace each other, so that standing under very different positions of the joints becomes possible

6 The fixation of the elbow, as *far* as the biceps and the long head of the triceps are concerned, depends

also upon the position and fixation of the shoulder-joint, as described above The shoulder is fixed in the first place by these two double-joint muscles and in the second place by the shoulder musculature itself For this joint also simultaneous contraction of flexors and extensors has been demonstrated It may be mentioned that in the experiments of Schoen the supraspinatus muscle was very sensitive to the exteroceptive stimulus of touching the pads of the fingers

7 The whole mechanism of fixation in the hand, elbow, and shoulder-joints would not be of any value for standing if there were not also a strong muscular fixation of the scapula to the thorax. The strong and broad mass of the levator scapulæ and the serratus, which are inserted on the scapula and take their origin from the neck region and the lateral parts of the thorax, form on both sides a bearing girth, by which the forepart of the body is slung between the two supporting pillars The rhomboidei, connecting the vertebral column with both scapulæ, hold these bones in position and make the bearing function of the levator scapulæ and serratus effective At the same time the pectoralis muscle and the latissimus dorsi fix the humerus to the trunk and secure the two pillars against abduction If under certain conditions the levator scapulæ and serratus should give way, the pectoralis and latissimus on both sides can form a second bearing girth, which can also carry the thorax

If the thalamus animal is hanging prone in the air, these shoulder muscles are usually tonically contracted Standing on the ground increases this tone by reflexes evoked by dorsiflexion of the toes and exteroceptive stimuli of the finger-pads

This short review, which naturally must be very incomplete, is sufficient to show how complicated is the system of different reflexes, which makes it possible to stiffen one limb and to transform it into a supporting pillar

B *The Negative Supporting Reaction*

Besides the disappearance of those conditions which evoke the positive supporting reaction active processes take an important part in interrupting the positive reaction and inducing the negative phase The active stimulus is not exteroceptive The limb in the negative phase is usually removed from the ground The volar flexion of fingers and hand in the fore-limbs or plantar flexion of the toes in the hind-limbs is the effective stimulus The reflex disappears in the fore-limbs after cutting all tendons of the extensor muscles of hand and fingers In the intact limb it is evoked by stretching these extensors In consequence of this there is a reflex relaxation of the extensor muscles of the proximal joints, which has been demonstrated by Schoen in the case of triceps, serratus anterior, and levator scapulæ At the same time the flexors of the shoulder contract The relaxation of serratus and levator scapulæ can be seen also to follow flexion of the elbow or even of the shoulder

In this way the whole limb, especially the shoulder, is loosened and becomes free for movements

The foregoing description shows the importance of local static reactions

SEGMENTAL STATIC REACTIONS

It will be sufficient to illustrate the segmental static reactions by some examples only A very simple instance is given by the crossed extension reflex. In the standing animal the weight of the hind part of the body is carried by both hind-limbs and the weight of the fore part of the body by both fore-limbs A painful stimulus applied to one limb evokes the ipsi-lateral flexion reflex, by which the stimulated foot is removed from the neighbourhood of the stimulus. The crossed limb, therefore, has to carry the weight of the fore or hind part of the body alone This is made possible by the increased supporting reactions as described above, but is aided by the crossed extension reflex, which causes increased tone in the extensor muscles of the limb

Another instance of segmental static reactions is afforded by the so-called "Schunkelreflex,"' which can easily be demonstrated in the fore- or hind-limbs of normal animals as well as after extirpation of the cerebellum or the fore-brain Suppose that the animal (dog or cat) is standing on the table and one—e g , the right—fore-limb is lifted up by the negative supporting reaction The extensor tone of this limb is continuously tested by slight passive flexions of the elbow The hand of the observer moves the thorax of the animal towards the right; then one feels an increased extensor tone of the elbow, and finally the limb is completely extended and able to prevent the fore part of the body from falling towards that side The same reflex can be demonstrated in the hind-limbs and is also present in man, especially when we are standing on one foot and move towards the other side Then the extension of the crossed knee is inevitable, and gives the subjective impression of being at least partly voluntary But in animals the reflex is very active after complete extirpation of the cortex cerebri

The reflex is not evoked by changes in the position of the head, neck, and vertebral column The stimuli arise in the main from the adductor muscles, which are stretched by moving the body in the lateral direction The reacting limb can be completely desensitised by cutting all the posterior roots carrying impulses from this limb , desensitisation of the standing limb, on the other hand, abolishes the reflex

A similar reflex is present if the body be moved forwards or backwards After lifting up one fore-limb the forward movement of the thorax causes the limb, which has been lifted up, to be extended and moved forwards, so that it prevents the body from falling

The static "meaning" of this latter reaction is evident, but besides that the reaction also comes into play during walking and running This shows that the same reflex can be used for the maintenance of equilibrium and for the purpose of walking

These and other segmental static reactions, in which stimulus and effect are not confined to the same limb but to the same segment, show the interconnexion of separate parts of the body in static functions

GENERAL STATIC REACTIONS

In general static reactions more than one segment of the body, even the whole body, is concerned Many examples will be given in the course of these lectures A fundamental condition for every static reaction is that the animal shall stand or at least be able to stand In the preceding section this was supposed to be the case At the present moment we have to answer the question Which parts of the central nervous system must be present for standing ?

The classical experiments of Goltz and Sherrington have demonstrated that a *spinal animal* can perform very complicated movements If in a dog the spinal cord be divided in the thoracic region, after some months a great number of reflexes can be evoked in the limbs ipsi-lateral flexion and extension reflexes, a crossed extension reflex, rhythmic movements resembling walking and running or galloping, the scratch reflex, movements of hind-limbs and tail exactly similar to those which normal animals perform during defæcation and micturition Under certain conditions even a flexor tone of long duration may be present in such a limb—e g , when an ulcer on the foot develops; but in spite of all these very complicated and adapted innervations, no static tone is present and the limbs cannot carry the weight of the hind part of the body they give way after a very short time The same is true for a spinal animal in which the cervical cord has been cut All four limbs are under these conditions deprived of static tone

In the "decerebrate" preparation the state of affairs is quite different In these animals the brain-stem has been cut across somewhere between the plane of entrance of the eighth nerves and the foremost part of the mid-brain It has been shown by Sherrington that after decerebration the “ decerebrate rigidity ” develops, which is characterised by a strong tonic contraction of the “ antigravity ” muscles—viz , the extensors of the limbs and back, the elevators of neck and tail, and the closing muscles of the jaw The antagonists of these static muscles, the flexors, have either a very slight tone or even none at all If placed on its feet the decerebrate preparation will stand, that is to say, the strongly extended limbs will carry the weight of the body, but owing to the isolated and exaggerated contraction of the extensors the posture of the animal becomes abnormal and is deprived of the smoothness which is seen in intact animals Sherrington has shown that “ decerebrate rigidity ” is a reflex phenomenon The chief stimuli arise in the proprioceptive sense organs of the contracted muscles themselves Later experiments have shown that, besides this, other sensory stimuli cooperate, arising from the crossed limbs, from the neck region, the labyrinths, the fifth nerves, the skin, &c After cutting the cervical posterior roots and extirpating the labyrinths the neck muscles can still develop pronounced decerebrate rigidity It is possible to provide the completely deafferented limbs of a decerebrate animal with a fair amount of tone by stimuli from other parts of the body Experiments of Bazett and Penfield have shown that after decerebration the rigidity may last for weeks

The reflex behaviour of the decerebrate animal differs from that of the spinal animal in a characteristic way Under both conditions the flexor muscles perform reflex contractions of short duration after stimulation of an appropriate afferent nerve The extensor muscles of the spinal animal also respond by short contractions In the decerebrate preparation the reflex response of the extensor muscles is prolonged, and shows sometimes very long after effects

The peculiarities of the decerebrate state will become still more evident when we later describe the different behaviour of animals with intact mid-brain

A GENERAL STATIC REACTIONS OF THE DECEREBRATE PREPARATION

The essential condition for these experiments is that the hind part of the bulb has been left in functional connexion with the spinal cord The presence or absence of the cerebellum is not essential, the presence of the oral part of the bulb, the pons, and the caudal part of the mid-brain causes the preparation to show a greater variety of reflexes, but does not contribute to the fundamental phenomenon in question

General static reactions in the decerebrate animal can most easily be induced by changing the position of the head This was discovered by chance Many years ago I prepared a decerebrate cat with cross section of the low thoracic cord, in order to study some reflex reactions of the tail muscles For this purpose I brought the animal from the lateral into the supine position and noticed to my surprise a slow but very strong “ pathetic ” extension of the fore-limbs, which disappeared when the animal was again placed upon its side Other changes of position evoked also tonic reactions of the fore-limbs Subsequent repetitions of the same experiment showed that various animals reacted differently A long experimental analysis in which I was joined by my friend and collaborator, De Kleyn, was necessary until we understood the phenomenon completely As usual the result was comparatively simple It is possible by giving to the head different positions, to change the distribution of tone in the whole body musculature, and, as far as decerebrate preparations are concerned, especially in the above-named group of antigravity muscles The most striking reactions appear in the extensors of the limbs and in the neck muscles The effects observed are the result of combined reflexes from the labyrinths and from proprioceptive neck-receptors, and as the relative strength of these two influences varies from animal to animal the different results of subsequent experiments can be understood In this way it is possible to impress upon the whole body different adapted attitudes by changing only the position of the head These reflexes therefore may be called *attitudinal reflexes*

Every change of the head implies two different factors (1) a change in the position of the head in relation to the body by which the neck-receptors are stimulated, and (2) a change of orientation of the head in space, which brings the labyrinths into play

These facts allow us to study the two sets of reflexes separately

1 *Tonic Neck Reflexes*

In order to study the tonic neck reflexes upon the limb muscles without interference with the labyrinth reflexes it is necessary to extirpate the vestibular organs This has been done by a method devised by De Kleyn without any lesion of the muscles on the basis cranii After this operation the influence exerted by changes of the position of the head become independent of the orientation of the head in space Only changes in its relation to the body cause tonic reflexes and these reflexes are now unequivocal all animals reacting in the same sense

Rotation of the head causes extension of the fore and hind-limbs, towards which the jaw is rotated (“ jaw-limbs ”), and relaxation of the limbs, towards which the vertex is rotated (“ skull-limbs ”) Inclination of the head towards one shoulder causes extension of the fore- and the hind-limbs towards which the nose is inclined (“ jaw-limbs ”) and relaxation of the limbs on the other side (“ skull-limbs ”) The general rule for rotation and inclination therefore is that the jaw-limbs are extended and the skull-limbs flexed Dorsiflexion of the head causes, in all mammals except the rabbit, extension of the fore-limbs and relaxation of the hind-limbs Ventroflexion of the head causes flexion of the fore-limbs and extension of the hind-limbs In rabbits dorsiflexion of the head causes extension of all four limbs and ventroflexion of the head causes flexion of all limbs In all mammals with the exception of the rabbit, movement of the head in different directions is followed by opposite reaction of one pair of limbs as compared with the other Relaxation of the four limbs in all mammals is given only by pressure upon the lower part of the cervical vertebral column in a ventral direction (vertebra prominens reflex)

The afferents for these reflexes (with the only exception of the vertebra prominens reflex) take their course through the three uppermost cervical posterior roots The centres of the tonic neck reflexes have been localised in the first and second cervical segments

2 *Tonic Labyrinthine Reflexes*

These reflexes can be studied separately after excluding the neck reflexes This can be done either by cutting on both sides the three first cervical posterior roots or by immobilising head, neck, and thorax by a strong plaster-jacket, so that no movements of the head in relation to the body are possible while the fore-limbs are left unrestrained and can be moved freely If such a preparation be brought into different positions in relation to space the extensor tone of all four limbs always changes in the same sense There is only one position in which the extension becomes maximal the supine position with snout about 45° above the horizontal plane The extensor tone diminishes to a relative minimum if the animal is brought into the prone position with snout about 45° below the horizontal plane The minimum and maximum positions differ therefore, by 180° In all other positions in space the extensor tone is intermediate between these two extremes These reflexes are not evoked by movement but depend upon position They are independent of angular acceleration and last as long as a certain position is kept Only such changes in the position of the head are effective as change in its angle in relation to the horizontal plane

The labyrinthine origin of these reflexes is proved by the fact that they disappear after bilateral labyrinth extirpation A delabyrinthised decerebrate cat in which the neck has been immobilised by a plaster bandage, can be brought in all possible positions in space without any changes in the tone of the limb muscles.

The tonic labyrinthine reflexes arise from the otolithic organs. In mammals it is not possible to prove this by isolated extirpation of the otolithic maculæ or of the ampullæ of the semicircular canals, for this cannot be done without opening the peri- or endo-lymphatic space and therefore definitely disturbing the vestibular function. Another method was therefore, used. Following a technique first devised by Wittmaack, guinea-pigs under ether were centrifuged for a short time at high speed. Then the otolithic membranes are detached by the action of centrifugal force, whereas the canals with ampullæ and cristæ remain intact. In each case a microscopic investigation must be made, and this must show that the ampullar nerve-endings and the canals are intact, that all four otolithic maculæ are completely deprived of their otolithic membranes, and that these four membranes can be found remote from them, inside the endolymphatic space. This last point is of importance, because it proves that the detachment of the membranes occurred intra vitam and not as a result of faulty fixation or cutting of the section for examination. Only from experiments with complete histological evidence may definite conclusions be drawn.

In such animals all labyrinthine reactions evoked by angular or rectilinear acceleration are present, but all reflexes resulting from position have disappeared including the tonic labyrinth reflexes upon the limb muscles. These reflexes therefore, depend upon the otoliths.

The position of the otoliths in relation to the skull has been carefully investigated by De Burlet and his pupils in the anatomical department of the University of Utrecht. The results of their measurements have been used for the construction of models (guinea-pigs rabbit, monkey, man).

The two maculæ utriculi are situated approximately in the same plane, which is nearly horizontal, when the animal carries its head in the normal position. The two maculæ sacculi are not at all in the same plane; they form as far as their chief portion is concerned an angle of rather less than 90° with the utricular maculæ. With normal position of the head the two maculæ sacculi face towards the lateral side.

If the head of a rabbit is brought into the maximum position for the tonic labyrinthine reflexes the saccular maculæ have no characteristic position, whereas the utricular maculæ are lying in a horizontal plane. In the maximum position, in which the extensor tone of all four limbs has reached its highest value, the otolithic membranes exert a pull on the macular epithelium. In the minimum position for the extensor tone, the maculæ stand again horizontal with the otolithic membranes pressing upon the epithelium. The conclusion is that the *tonic* labyrinthine reflexes are evoked from the utricular maculæ. This is confirmed by the *fact* that after unilateral labyrinth extirpation the maximum and minimum positions for the tonic labyrinth reflexes remain unchanged, which would be impossible if the maculæ concerned in these reflexes did not lie in the same plane.

In the position in which the extensor tone of the limbs is maximal the otoliths pull on the utricular maculæ. The conclusion that the maximum of stimulation in the macular epithelium is *induced, not by* the pressing, but by the pulling otolith is proved to be sound by observations on saccular reflexes a part of which will be mentioned later.

The centres for the *tonic* labyrinthine reflexes upon the limb muscles have their *position in the hind* part of the bulb, behind the plane of entrance of the eighth nerves.

Besides the tonic utricular reflexes on the limb muscles there are also tonic utricular reflexes on the neck muscles, which follow in general the same laws. The only difference is that every utricular macula sends impulses to the limbs of both sides and to the neck muscles of the crossed side only. As a consequence of this unilateral labyrinth extirpation is followed by no change in the tonic labyrinthine reflexes upon the limbs but evokes the well-known turning of the neck which has been described by all previous observers. This rotation and inclination of the head causes secondary tonic reflexes upon the limb muscles. The connexion of the labyrinths with the limbs is, therefore a double one (1) by tonic labyrinthine reflexes directly upon the limbs and (2) by tonic neck reflexes upon the limbs indirectly through labyrinthine influences upon the neck.

3 *Combinations of Tonic Labyrinthine and Neck Reflexes*

If both sets of reflexes are present, they cooperate so that the tone of every single muscle depends upon the algebraic sum of influences derived from proprioceptive end-organs in the neck and from the utricular maculæ. If, therefore the triceps muscle of the right elbow derives increased tone from the labyrinths and from the neck, the elbow will be strongly extended; if this muscle gets diminution of its tone from both sources the elbow will relax but if the muscle tone is increased from the labyrinths and decreased from the neck the result depends upon the relative strength of these influences. If the labyrinthine reflexes predominate the elbow will be extended, if the neck reflexes are stronger it will be flexed and if both reflexes are of the same strength the angle of the elbow will not change at all.

This cooperation gives rise to very characteristic attitudinal reactions of decerebrate animals. Place a cat in the prone position upon the table and flex the head ventrally then the labyrinths come into the minimum position and all four limbs will tend to relax. The neck influences cause relaxation of the fore-limbs and extension of the hind-limbs. Both groups of reflexes, therefore, cooperate in the fore-limbs, which show distinct relaxation, whereas the hind-limbs may not change at all because the influences from neck and labyrinths act in opposite senses. If with the prone position of the animal the head is bent dorsally the resulting removal of the labyrinths from the minimal position causes extension of all four limbs. The neck reflexes evoke extension of the fore-limbs and relaxation of the hind-limbs. The combined effect is strong extension of the fore-limbs and only slight changes in the hind-limbs. Head movements, therefore, in a ventral and dorsal direction have a very strong influence on the fore-limbs, whereas the reaction of the hind-limbs is much weaker.

Still more complicated is the effect of head rotation with the lateral position of the animal. In this case I shall describe only the effect upon the fore-limbs. If with the right lateral position of the animal the head is rotated so that the vertex is below, then the labyrinths are in maximum position which gives rise to strong extension of both fore-limbs. In respect of the neck reflexes the uppermost fore-limb is "jaw-limb" and will be extended, whereas the lowermost fore-limb is "skull-limb" and will be flexed. Both influences cooperate for the uppermost fore-limb, which is strongly extended. The behaviour of the lowermost fore-limb is different according as one or the other reflex preponderates. With stronger labyrinthine reflexes it is extended. With stronger neck reflexes it relaxes. When the strengths of both groups of reflexes are equal it remains unchanged. The reaction of the lowermost fore-limbs to rotation of the head with the lateral position of the animal affords, therefore, the possibility of determining in a given animal the relative strength of both sets of reflexes. If now with the same lateral position of the body the head be rotated with the vertex uppermost then the labyrinths come into the minimum position and both fore-limbs will tend to relax. In the upper fore-limb this relaxation is reinforced by the neck influence (skull-limb) In the lower fore-limb it is counterbalanced by the neck influence (jaw-limb) With preponderant labyrinthine influences the lower fore-limb is relaxed, with preponderant neck reflexes it is extended In every case with the right lateral position rotation of the head evokes very strong and unequivocal reactions of the left (upper) fore-limb, whereas the reactions of the right fore-limb are weaker and of indefinite direction Now, the animal is placed in the left lateral position and again the head is rotated The same rules can now be applied with this difference only, that the upper fore-limb is now the right one In this case the right fore-limb will react strongly and the left fore-limb may not move at all It becomes evident that one and the same rotation of the head causes with the right lateral position of the animal strong relaxation of the left fore-limb, and with the left lateral position strong extension of the right fore-limb This instance shows clearly that the same movement of the head in relation to the body may, with different spatial positions of the body, evoke very different reactions But in spite of these complications, which were very amazing at the time when the experiments were started, it has been possible to explain all reactions, observed in more than a hundred experiments, in which the head was moved about the three chief axes with each of the six main positions of the body in space by the combined action of utricular and neck reflexes

The attitudinal reflexes are called tonic, because they last as long as the head keeps a certain position They are practically indefatigable After unilateral labyrinth extirpation in rabbits the turning of the neck lasts until the animal dies Also the tonic neck reflexes upon the limbs evoked by this head rotation can be demonstrated as long as the animal is alive On the other hand, every change in position of the head is followed immediately by the corresponding change in the attitude of the whole body The influence of the tonic attitudinal reflexes is very strong upon the muscles of the proximal joints, shoulder and hip, elbow and knee. on the distal joints of hand, foot, toes, and fingers the action of these reflexes is much less pronounced

The mechanism as a whole acts in such a way that the head leads and the body follows The attitudes impressed upon the body by a certain head position in the decerebrate preparation closely resemble the natural attitudes shown by the intact animal during ordinary life

4 *Attitudinal Reactions in Intact Animals and in Man*

This leads to the question of the presence of attitudinal reflexes in normal animals with intact central nervous system In most mammals they are present and can easily be demonstrated In the normal rabbit dorsiflexion of the head in the sitting animal causes tonic extension of the fore-limbs, head rotation with the rabbit in the supine position evokes extension of the jaw-limbs and relaxation of the skull-limbs

It is not necessary that the head movements shall be passive The same laws hold good when the animal performs active head movements As these depend very often upon stimuli transferred to the animal by way of the distance receptors (eye, ear, nose), it is possible to impress upon the body of the animal different attitudes from distant points of the environment A cat which sees some food lying on the ground flexes the head in the ventral direction, and this causes the fore-limbs to relax so that the snout is moved towards the food, but if a piece of meat be held high up in the air the optic stimulus causes dorsiflexion of the head This evokes strong extension of the fore-limbs without marked extension of the hind-limbs The body of the animal is not only focused on the meat, but is also brought into a position which is optimum for the springing reflex, so that by a strong sudden simultaneous extension of the hind-limbs the animal can reach the meat

The activity of the vertebra prominens reflex can be watched in a cat or dog creeping into a hole In doing so, the animal brings its head close down to the ground with resulting relaxation of all four limbs so that the belly lies flat upon the floor

Many other instances of the action of attitudinal reflexes in intact animals have been observed A striking difference between the reaction of the decerebrate and the normal animal is that in the decerebrate preparation the flexor muscles, which have no tone, do not take part in the reaction or respond only very slightly In the intact animal the flexor muscles also, as will be shown later, have tone, and react to the tonic neck and labyrinthine reflexes In this they follow the law of reciprocal innervation Increase of extensor tone is associated with diminished flexor tone and vice versa In this way the attitudinal reflexes of intact animals are much smoother than the stiff and always exaggerated attitudes of the decerebrate preparation

In monkeys during their ordinary movements it is not easy to detect the presence of attitudinal reflexes, which, on the other hand, can with certainty be demonstrated in the decerebrate or narcotised animals

In man also the presence of attitudinal reflexes in ordinary life is not striking Good pictures and statues give the impression of being natural, if the body is represented according to the laws of attitudinal reflexes If these laws are not obeyed we get the impression of a dead body or of a caricature But the complexity of human movements during ordinary life usually obscures the simple attitudinal reactions In a certain percentage of babies, however, the influence of head rotation upon arms and legs can be seen

Under pathological conditions the presence of attitudinal reactions in man may become evident, especially when disease has interfered with the function of the higher parts of the brain Very diverse pathological conditions give rise to the appearance of these reflexes, which are now used by neurologists for diagnostic purposes, head rotation especially causes extension of the jaw-limbs, sometimes accompanied by relaxation of the skull-limbs In this case neck reflexes are present In a minority of cases also tonic labyrinthine reflexes have been demonstrated, in which all four limbs reacted in the same sense, and in which, precisely as in animals, a maximum and a minimum position of the head could be determined If both sets of reflexes are present their coöperation follows the same laws as in animals It has been shown by Simons and by Walshe that the direction of associated movements of paralysed limbs, evoked by active voluntary movements of non-paralysed parts of the body, can be influenced by the position of the head

The attitudinal reflexes form a group of tonic reactions, by which the whole body musculature is integrated for a combined and highly adapted function The entire body follows the direction assumed by the head, this being very often moved in a certain direction under the influence of the telereceptive higher sense-organs This provides one of the ways in which the relation of the body to its environment is regulated It need only briefly be mentioned that the different attitudes, with their different distribution of tone and tension in the numerous muscles of the body, are associated with different distributions of reflex irritability over the central nervous system Therefore one and the same stimulus may cause quite different reflex reactions according to the different attitudes of the animal at the moment the stimulus is applied

These short remarks may be sufficient to show to what extent the reflex behaviour of animals may be influenced by attitudinal reflexes The complexity becomes still greater if besides the bulbar centres with their relatively simple function higher centres come into play. This will be discussed in the next section

(*To be concluded*)

NEW GROWTHS IN THE THORAX

DIFFERENTIAL DIAGNOSIS FROM TUBERCULOSIS

By J M JOHNSTON M B Edin, D P H Lond,
PHYSICIAN SUPERINTENDENT TOR-NA-DEE SANATORIUM,
MURTLE ABERDEENSHIRE

THE six cases on which this paper is based have come under my own personal observation, and are used to illustrate the evidence which, in my opinion, should be taken into account in making a differential diagnosis between intrathoracic new growths and pulmonary tuberculosis

Clinical Histories

CASE 1 —A man aged 52, was admitted in October, 1922, with a diagnosis of "serious tubercular disease of the left lower lobe and a lesion at the right apex" His illness dated from October. 1921, when he had "influenza," followed by persistent cough In March, 1922, he had dry pleurisy at the left base, after which he began to lose weight rapidly, and had fever, with troublesome cough, pain in the left chest, and increasing weakness and dyspnœa. A physician who saw him diagnosed pulmonary tuberculosis, but considered tumour possible There were signs of slight infiltration at both apices without adventitious sounds, and evidence of fluid at the left base X rays showed fluid at the left base, and above the fluid a clear space bounded by a domed shadow The fluid was level and moved on inclining the patient, showing that there was air in the pleura, probably due to puncture of the lung by an exploring needle before admission Both apices were slightly infiltrated, and the heart was displaced to the right Some blood stained fluid was withdrawn and was sterile on culture, and no tubercle bacilli were found either in this or in the sputum. The fluid was aspirated, and the X rays then showed a dense shadow involving most of the lower lobe, which the radiologist and I regarded as highly suggestive of tumour The W R and the complement-fixation test for tuberculosis were negative There was a leucocytosis of 29,000, 86 per cent being polymorphs He had a few small hard glands above the right clavicle and one of these was dissected out and reported to be histologically tuberculous, but no T B were seen. He had vague digestive symptoms with slight epigastric tenderness Later he vomited some "coffee grounds," and with further rapid loss of weight a small tumour became palpable in the epigastrium This made a diagnosis of primary carcinoma of the stomach, with secondary deposit in the lung, practically certain and he was sent home. He died in February, 1923—i e, 18 months after the onset of his illness There was no post-mortem examination

CASE 2 —A female aged 42, two children, two miscarriages Admitted April, 1923, from another sanatorium, where the diagnosis was "tubercular cervical adenitis and tuberculosis *of the left* lung"

History —February, 1922, dry cough appeared, followed soon after by post-sternal pain and lassitude June, 1922, pulmonary tuberculosis was diagnosed, and she was sent to a sanatorium in September, 1922, and remained there till April, 1923 There was mild persistent fever all the time and cough and pain did not improve Once or twice the sputum was blood-flecked, but T B were never found, though the Pirquet reaction was positive Glands were noticed in the neck, and she was treated with tuberculin inunctions for six months Previous illnesses Aged 18, enlarged glands in neck for some months Aged 19, probable pleurisy at right base. Family history Mother died of fibroid phthisis, aged 73

Condition on Admission —Dyspnœa on mild exertion, fingers somewhat clubbed Complained of almost constant aching pain in the left chest, and there were mild fever and tachycardia There was a bunch of firm movable glands above the left clavicle, and a string of small glands along the posterior border of the sterno-mastoid, also enlarged glands in the left axilla The veins on the left side of the chest were prominent The left chest was flattened and expanded poorly, and vocal fremitus and resonance were decreased The percussion note was dull except in the axilla, the breath sounds were faint, and a few muffled rales were heard at the apex On the right side there was some intrascapular dullness on percussion and a few crepitations in the second interspace in front The heart was a little displaced to the right; there were no bruits By X rays the screen showed some displacement of the heart to the right, and the left diaphragm high and nearly immobile At the root of the right lung there was a small clearly outlined dark shadow, and on the left side a larger dark shadow with a clearly outlined natiform border—evidently enlarged glands This shadow was continuous with the mediastinal shadow and was non-pulsatile. The film showed the condition very well I obtained a print of a radiogram taken nine months previously and the change was very striking. The sputum was scanty, no T B found There was a leucocytosis of 20,000, of which 88 per cent were polymorphs The W R was negative but the complement-fixation test for tuberculosis was positive (possibly due to the tuberculin inunctions) A provisional diagnosis of Hodgkin's disease was made, and a gland was dissected out and reported by a pathologist as "typical lymphadenoma" She was obviously getting worse, and was sent home to have X ray treatment Temporary improvement resulted, but she died in September, 1924—i e, about two and a half years after the onset of symptoms

CASE 3 —A male aged 40, a medical man Admitted January, 1924, with a diagnosis of "acute pulmonary tuberculosis"

History —October, 1923, sudden pain over right lower ribs with fever and some cough. A doctor found doubtful friction at the right base. Two weeks off work and then felt as usual November, 1923, a second attack of fever with cough, and there were signs of a pleural effusion at the right base One c cm of blood-stained fluid was drawn off and was found to be sterile, though containing many polymorphs A blood count gave 30,000 leucocytes 70 per cent being polymorphs Fever persisted and dyspnœa and cough increased when he lay on his right side X ray examination "mediastinal mischief growing into the lung"; and as two T.B were seen in the sputum at the seventh examination, a diagnosis of pulmonary tuberculosis was made Previous illnesses · Pneumonia at 17, dysentery at 30, acute dyspepsia at 31, and at 34 severe indigestion for which he was invalided home from India as duodenal ulcer After a year's treatment he was practically well.

Condition on Admission —Poorly nourished, with pallor, cyanosis of the lips, and dyspnœa on slight exertion. He complained of constant aching pain in the right chest, and there was troublesome dry cough with glairy sputum. There were signs of some infiltration of the right upper lobe with a few crepitations and rhonchi behind At the right base were signs of a small fluid effusion. Nothing abnormal was made out in the left lung X ray examination showed moderate density at the right apex and a dense shadow above the diaphragm, suggestive of fluid, but also, above the level of the fluid, a dense non-pulsating shadow with an irregular but clear outline continuous with the mediastinal shadow On the left side the apex was not quite clear and the root shadows were somewhat pronounced. The heart was apparently sound. The radial pulses were equal There was a leucocytosis of 26,000, of which 80 per cent were polymorphs The sputum was examined repeatedly and eventually a few acid-fast bacilli were seen in a concentrated 24 hours specimen. Pneumococci were always numerous A specimen was sent to Dr J Cruickshank, who reported that "after concentration a few T B were seen," but he inoculated a guinea-pig with some of the sputum and reported later that "the guinea-pig remained quite well, and that the acid-fast bacilli found by concentration were probably not tubercle bacilli"

I explored the right base and got some turbid fluid which contained many cells of which 90 per cent were polymorphs No T.B were seen and no growth obtained on culture A guinea-pig inoculated with some of the fluid did not develop tuberculosis The W.R was negative, as also was the complement-fixation test for tuberculosis The patient improved at first, but six weeks after admission the sputum became constantly blood-stained and the cough ineffective A mouse injected with some of the sputum died of pneumococcal infection, and an autogenous vaccine was prepared but never given as the symptoms became urgent somewhat suddenly Dyspnœa increased greatly, and there were attacks of stridor with intense cyanosis and spasms of cough.

I asked Prof Ashley Mackintosh to see him and he agreed that malignant disease was the most likely diagnosis, though there was probable antecedent tuberculous infection. His symptoms were not relieved to any extent by oxygen, adrenalin or morphine, and he died in a few days No post-mortem examination was permitted

CASE 4 —Male, aged 32 Admitted August, 1924, with a diagnosis of "pulmonary tuberculosis of the right lower lobe"

History —Healthy man till December, 1923, when he had dry pleurisy at the right base with fever and hæmoptysis In bed one month and returned to work after another month May, 1924, another attack of dry pleurisy at right base with slight fever and hæmoptysis T B not found July 1924, had further hæmoptysis, lost weight, and dyspnœa became troublesome Saw a *consultant* who diagnosed pulmonary tuberculosis

Condition on Admission —Pale and ill-looking No special cyanosis, but he was dyspnœic on mild exertion and complained of constant aching pain of the right chest shoulder, reactions, all of them closely allied, yet each with its own immunity reactions The most prevalent meningococcus in this epidemic was of the second type

During the last three years 18 autopsies were performed In 15 the usual features of meningococcal meningitis were present Serous fluid and pus were found in considerable quantity beneath the meninges, and there was softening of the cerebral and cerebellar tissue In two cases the blood-vessels of the cerebral cortex and the vessels of the pia mater were markedly congested, the meninges were thickened and lustreless In one case the ventricles were greatly distended, and the brain tissue was much thinned and softened

Clinical History

Most of the cases admitted into the hospital were of the fulminating and ordinary types, and very few were of the chronic type. Scarcely any passed into the chronic stage after the adoption of serum treatment All the cases had the usual classical signs and symptoms of cerebro-spinal fever. The intensity of the different symptoms varied in most cases Some had marked retraction of the head Some had severe convulsions, and in others unconsciousness was a marked feature

Pneumonia was the most common complication The others were cystitis, bed-sores, and eye complications, such as corneal ulcers, perforation of the eyeball, panophthalmitis, squint, and temporary amblyopia Those due to serum treatment were swelling of joints, joint pains, and different rashes The following are the interesting cases illustrating some of the complications —

CASE 1 —(Perforation of cornea and squint) Patient, R M, aged 16, male, was admitted with usual symptoms of cerebro-spinal fever and swollen and painful wrist-joints Lumbar puncture was performed and serum injected Temperature came down to normal, but joints were swollen and painful Lumbar punctures were performed and serum injections were repeated on alternate days He developed corneal ulcer of the right eye, which later on perforated Afterwards he got a squint in the left eye, and the swelling of the joints subsided gradually Then he got a relapse with fever 105° F and shotty, papular eruptions on the face, hands, and trunk. After a few days the rash disappeared and the temperature came down to normal

CASE 2 —(Serum rash) Patient, V R, male, aged 15, was admitted with the usual symptoms of cerebro-spinal fever and marked retraction of head Lumbar puncture was performed and serum injected The patient was restless during the night, but on the next day the retraction was less and temperature was normal Further lumbar punctures were performed and serum injected on alternate days Then a punctate hæmorrhagic rash appeared on the face and extremities, and for a week he was a little delirious and complained of headache He began to improve after one lumbar puncture and serum injection, delirium lessened, headache subsided, temperature came down to normal, and finally he was completely cured

CASE 3 —(Joint pains) Patient, L A, female, aged 16, was admitted with the usual symptoms of cerebro-spinal fever and marked rigidity of neck and delirium Lumbar punctures were performed, and serum injections were given on alternate days She complained of severe headache and restlessness during all the days, and five days after the last injection she complained of pain all over the body and the right knee was swollen and painful, it gradually subsided, and she became quite well afterwards

CASE 4 —(Chronic type) Patient, D, male, aged 30, was seen with the usual symptoms of cerebro-spinal fever, unconsciousness, delirium, and pain in the chest Lumbar puncture was done, and serum was injected intrathecally Very turbid fluid came out under high pressure It showed many meningococci and polymorphonuclear leucocytes After five lumbar punctures and serum injections fever came down but fluid was still turbid The relatives did not allow more lumbar punctures as he was feeling better After one week he got fever and rigors, which the other consultants declared to be malaria, and he was put on antimalarial treatment, but the fever did not subside and Kernig's sign, retraction of head, stiffness of neck, and unconsciousness reappeared The serum treatment was started again, and after ten injections on alternate days the patient felt better, fever came down, incontinence of urine and fæces disappeared, and fluid was quite clear after five more injections, during this time he got thrombosis of the right femoral vein and bed-sores on both the hips, for which he was treated, the former were cured but the latter persisted He got better day by day, but could not walk or see with the right eye After 14 months he was able to walk on crutches, and five months later he was able to walk with a stick At present he is well, except for ankylosis of the right hip and loss of vision of the right eye. He had in all 19 lumbar punctures, and treatment lasted for 22 months

CASE 5 —(Afebrile type) Patient, K, female, aged 30, had intense occipital headache, retraction of head, and stiffness of neck and photophobia for three days Later she had dimness of vision There was no temperature Lumbar puncture was done Turbid fluid came out under high pressure, and showed many meningococci After three lumbar punctures and serum injections, headache and other symptoms cleared up There was no fever throughout the course of illness of 11 days

Resumé of Some of the Cases Treated Successfully with Serum

No	Initials	Age	Sex	Days of disease when serum was injected	Total amount of serum injected c c	Influence on temperature
1	J M	45	M	8, 10	30	L
2	K G	13	M	6	20	C
3	K D	21	M	6, 8, 11	80	C
4	Y G	30	M	15	30	I
5	P X	12	M	4, 12	40	C
6	P	16	M	2, 5, 8	90	C
7	K C	18	M	8, 10	60	L
8	S M	18	M	8, 10, 13	90	C
9	C S	28	M	9, 10, 12, 14	120	L
10	J A	18	F	9, 10	60	C
11	R	14	M	8, 11, 13	90	C.
12	V R	15	M	13, 15, 17, 24, 35	150	I
13	D R	12	M	8, 11, 15	90	C
14	L A	16	F	6, 8, 11, 13, 16, 18, 27	210	I
15	A B	22	M	10, 11, 15	90	C
16	H A	18	M	8, 10, 12, 14	120	C
17	J K	10	M	6, 7, 9, 11, 17, 19, 22	180	I
18	G C	30	M	4, 5, 6, 7, 8, 9, 10, 11, 12	250	I
19	J S	22	M	4	30	C
20	R B	20	M	8, 9 10, 11, 12, 13, 14, 16, 19, 26	280	L
21	S M	14	M	3, 4, 5, 6 9, 11, 13, 17	205	I
22	R M	16	M	4, 5, 6, 8, 12, 15, 25, 26, 32	160	C
23	D P G	18	M	4, 6, 9, 11, 17, 23, 24, 34, 49	230	C
24	N R	25	M	1, 3, 5, 9	100	C
25	N M	20	M	6, 8, 9, 18	70	L
26	B S	25	M	4	30	C
27	M K	20	M	11, 15, 17, 22	115	C
28	S J	23	M	12, 13, 15, 18	115	C
29	C L	25	M	6, 7, 9	90	C
30	D	30	M	9, 15, 21 25, 41, 88, 95, 98 101 103, 105, 107, 109, 111, 113, 115, 117, 119, 121	350	—
31	K	30	F	3, 5, 7	60	—

L = *Lysis* *C* = *Crisis* I = Irregular

Remarks—1 Herpes 2 Epistaxis 3 Complained of pain in the whole body and headache 4 5 Rash 7 Herpes 9 Painful joints 12 Serum rash 14 Joint pains 19 Neither retraction of head nor rigidity of neck Severe headache, liver tender Bronchitis Kernig's present 20 Restlessness 21 Unconsciousness, hypertension in eyeballs 22 Perforation of cornea and squint, swollen and painful joints 23 Restlessness and severe pain in head 24 Blister on the neck 29 Swelling of neck and subaxillary glands Pain in all joints Herpes, panophthalmitis 30 Unconsciousness, delirium secondary pneumonia, retention of urine bed sores loss of vision of right eye, thrombosis of femoral vein ankylosis of right hip joint. 31 No temperature, marked occipital headache, photophobia

Prognosis

It is extremely difficult to give prognosis in such a variable disease Sometimes apparently hopeless cases with coma recover (Case 4), while others, although looking better, prove fatal owing to sudden change in the inflammatory conditions of the meninges and brain, or to the subsequent development of hydrocephalus In this series all the fulminating cases died, and ordinary and chronic cases recovered with lumbar puncture and serum treatment from the beginning The mortality was heavy in infants and adults over 10 As a rule, mortality in this disease is very high, but general adoption of serotherapy, not only intrathecally but intramuscularly and intravenously, has reduced it a great deal At the municipal hospitals, out of 55 cases admitted and diagnosed as cerebro-spinal fever from clinical signs only from January to July 1921, 45 cases died showing a mortality of 82 per cent Later on, out of 96 cases in which lumbar puncture and serum treatment was regularly adopted, 52 died giving a mortality of 54 2 per cent

The mortality-rate is much lower in private cases which come under treatment early Out of 7 of these only 2 fulminant cases died showing a mortality of 28 5 per cent

Treatment

The treatment adopted was mainly specific—i e serum treatment, symptomatic treatment was resorted to whenever necessary. All the cases were treated by intrathecal injections of serum After the lumbar puncture 30 to 40 c.cm of the fluid was allowed to run out and an equal amount or little less serum injected by the gravity method This was done soon after the patients were admitted. and it was repeated daily or every other day. The serum used throughout was of polyvalent type prepared by the Lister Institute The best serum would have been that from the same strain of meningococcus which was the cause of the disease but owing to the great difficulties of obtaining such a serum polyvalent serum was used; although its potency is reduced to about a fourth it answered the purpose fairly well The use of the serum caused the turbid cerebro-spinal fluid to become clear, at the same time many patients were cured, the illness was cut short, and there were fewer sequelæ such as deafness, blindness, and paralysis In symptomatic treatment, the pain was relieved by local withdrawal of blood and counter irritation by leeches on the nape of the neck The temperature was lowered and the irritability lessened by applying cold to the head and spine (hydrotherapy) in the form of tepid baths To allay the spasms and tremors, bromides chloral and morphia were given internally Potassium iodide was given in later stages and helmitol was administered as an internal antiseptic especially directed towards the cerebro-spinal fluid

Conclusion.

I agree with Simon Flexner[4] "that the analysis of cases of epidemic meningitis which have been presented furnish convincing proof that the anti-meningococcus serum, when used by the subdural method of injection in suitable doses and at proper intervals, is capable of reducing the period of illness of preventing in large measure the chronic lesions and types of infection, of bringing about complete restoration of health in all but a very small number of the recovered; thus lessening the serious deforming and permanent consequences of meningitis and of greatly diminishing the fatalities due to the disease

References

1 Vandyke Carter Spirillum Fever Synonyms Famine Fever or Relapsing Fever as seen in Western India, 1882

2 Trans Bombay Med and Phys Soc., No 8, 1886

3 Dimmock A Report of Cerebro spinal Fever with a History of its Occurrence Among the Convicts of the District Jail at Shikarpur Upper Sindh, Peports of the Inspector General of Prisons, Bombay, 1885

4 Simon Flexner Mode of Infection Means of Prevention and Treatment of Epidemic Meningitis, Rockefeller Institute for Medical Research, 1917

HARROGATE INFIRMARY —On Saturday last Princess Mary laid the foundation-stone of the new building The total cost will be between £60,000 and £80 000, towards which the medical men of the town have raised £1000

BY AIR TO HOSPITAL.—The Real Daylight Balata Estates Limited, in British Guiana, has obtained from England a "Fairey" seaplane for the rapid conveyance of sick or injured employees from its station at Apoteri to Georgetown, 272 miles distant. The 'plane, which is especially adapted for tropical use, will carry one stretcher case and an attendant.

A CASE OF

INFECTION WITH BACILLUS DYSENTERIÆ (FLEXNER)

PRESENTING UNUSUAL SYMPTOMS

BY S F BREAKEY, M B, B CH. BELF,
RICHARD MURRAY HOSPITAL, BLACKHILL, CO. DURHAM.

With Bacteriological Notes by
F H A. CLAYTON M D, M.R C P EDIN

THERE is now sufficient evidence to show that in a certain proportion of cases the symptoms produced by the Flexner bacillus are entirely different from the classical symptoms of dysentery. Savage and Bruce White[1] have recently recorded a definite outbreak of food poisoning due to this organism and a somewhat similar series of cases with sudden onset was reported by Bainbridge and Dudfield[2] in 1911. although on this occasion food poisoning was considered improbable.

In the particular instance about to be described, although the initial history pointed to some acute alimentary trouble the divergence from the typical picture of dysentery was not so much in this direction as in the rapid development of an intense toxæmia producing a condition hardly if at all to be distinguished from the results of some gross cerebral lesion This finds an almost exact parallel in a case of Flexner infection reported by Marshall[3] in 1909

There was no opportunity of confirming the diagnosis of infection by examination of the blood or of the organs post mortem but the fact that the bacillus was readily isolated in considerable numbers from the fæces indicates the extreme probability that the illness was essentially the result of this infection and this opinion is likewise favoured by the absence of pathological evidence pointing to any other cause for the condition

As it is desirable that all anomalous cases should be put on record. the following brief account is given.

History of Case

As the progress of the illness from onset to death was extremely rapid (roughly 30 hours) the history is given in detail

The patient L M. was a female, aged 7, who had, with the exception of such childish ailments as measles and whooping-cough enjoyed excellent health and was described as a "bright child"

Throughout the day preceding the onset of her illness (Oct. 27th, 1925) she appeared to be thoroughly normal and at bedtime remarked to her father "I am full of 'vital.'" (vitality) She also slept well during the night Next morning the 28th, she performed the usual morning routine of breakfast and departure for school and the parents noticed nothing unusual At midday she was sent home from school, returning unwillingly, the reason given being that "she had been sick." She walked home and for the remainder of the day till 10 P.M. lay on a couch without complaint She was then given a seidlitz powder and walked upstairs, jumping over a couch en route, undressed herself, and went to bed. Throughout the night, however, she was very restless and "rambled and talked in her sleep" She got up unaided "twenty or thirty times" to go to stool but passed very little although no blood or slime was noticed and she had no vomiting Next morning, the 29th, as she seemed "excited and strange in her manner," the doctor was summoned and saw her at 9 30 A.M. when he advised her removal to hospital, where she was admitted at 12 15 P.M. with a suggestion from him that the case might possibly be an acute abdomen.

On admission she was semi-delirious and complained of headache Knee-jerks exaggerated, pupils dilated, and there was photophobia Temperature, 102 6° F; pulse, 140 Decubitus Left lateral with flexion of thighs and legs. Examination of heart and lungs revealed no abnormality and no rigidity, tenderness, or distension could be found in the abdomen.

By 2 P.M. complete unconsciousness supervened and a small quantity of bile-stained fluid was vomited. Convergent squint of left eye was noted, but there was no retraction of head and Kernig's sign was indefinite At 2 30 P.M. a soft ribbon stool of yellowish-green colour, homogeneous, non-offensive, and free from visible blood or mucus was passed This was the only stool observed in hospital and resembled a magnified worm cast At 3 P M retraction of head, twitchings, and spasticity of the limbs, and a markedly positive Kernig were present Lumbar puncture was now performed and yielded a clear fluid not under tension. A rectal swab was also taken

---

[1] Special Report No 92 of the Medical Research Council

[2] Journal of Hygiene 1911 xi, 356

[3] Journal of the R.A.M C., 1909, xii., 556

From this time the patient passed into an ever-deepening coma, head retraction became extreme, and the pulse uncountable Death supervened at 5 30 P M and a nasal swab was taken immediately afterwards These three specimens were despatched to the College of Medicine Laboratory at Newcastle-on-Tyne by the evening post

Post-mortem Examination

Permission was at first granted for a partial post-mortem only (chest and abdomen) and this was performed at 10 o'clock The abdominal contents appeared quite normal The intestines showed nowhere to the naked eye signs of congestion or injection and the appendix was freely movable and appeared healthy. A slight quantity of clear fluid was present As the symptoms in hospital had been mainly cerebral and there was little to indicate an intestinal infection, no segment was removed The heart and lungs were normal Next morning at 11 o'clock further permission was obtained to examine the brain. This, on surface and section, showed no signs of inflammation, no congestion of vessels, except slightly in the basilar region round the pons, and no pus, turbid fluid, or tubercles

In the absence of a bacteriological report, and in view of the post-mortem findings, the tentative diagnosis of encephalitis lethargica (fulminating) was made for the purpose of certification

Bacteriological Notes by DR CLAYTON

The three specimens were received from the Richard Murray Hospital, Blackhill, on the morning of Oct 30th, 1925

The first was a nasal swab, from which no growth except *Staphylococcus albus* was obtained

The second specimen was cerebro-spinal fluid This was an absolutely clear fluid showing no trace of coagulum An absolute count with a Fuchs-Rosenthal chamber showed a few red but no white cells in 64 squares, and films of centrifuged fluid confirmed this, showing only an occasional lymphocyte with a few obviously contaminating organisms

Chemical tests, carried out by my colleague, Mr H R Whitehead, gave the following results Total chlorides, 0 728 per cent , total proteins, 0 02 per cent , globulin test, negative The fluid was consequently reported as to all intents and purposes normal

The third specimen received was a rectal swab which was covered with what was apparently normal fæcal material without any sign of blood or mucus and which was still moist, despite the fact that it had been collected on the previous afternoon at 3 o'clock From this MacConkey plates were sown and next day numerous clear colonies were visible Six were picked off and sown in media containing lactose, glucose, and mannite As all six organisms produced acid in the latter two and left lactose unchanged, an agar slope sown at the same time was emulsified in saline and tested against the Oxford polyvalent Flexner and typhoid sera The former agglutinated to 1 in 125 after four hours; the latter showed no trace

Unfortunately, it was impossible to acquaint Dr Breakey with these results in time to give him any guidance, as the patient was dead and the post mortem had been performed almost before the specimens had been received at the laboratory

As the isolation of a dysentery bacillus was decidedly unexpected and a chance observation, and the time occupied in the transmission of the specimen somewhat prolonged, special care was taken to confirm its identity and the results are given in some detail

The complete reactions of the organisms when tested for three weeks proved to be those of *B dysenteriæ* (Flexner) In all subsequent agglutinations the Dreyer technique was adopted and 24-hour peptone cultures were used The results were read with the assistance of the Oxford dark-ground apparatus and were repeated With the 24-hour peptone cultures all six strains agglutinated to 1 in 250 with the Oxford polyvalent serum Tested against the five Oxford strains of Flexner Z showed no trace of agglutination X and Y agglutinated to about 1 in 50, Y to 1 in 250, and W to 1 in 600 Finally an antiserum was prepared and when tested against the organism itself this agglutinated to 1 in 10,000 With the Oxford strains it agglutinated W to the same extent, Y to 1 in 2500 and the others only slightly.

Commentary

This case appears to fall into line with the limited number in which an infection with the Flexner bacillus has given rise to symptoms which are very different from the classical picture of dysentery Together with Marshall's case it demonstrates the fact that such an infection, like so many other conditions in children, may on rare occasions simulate gross cerebral lesions. An accurate diagnosis was practically impossible until the bacillus had been isolated for, after admission to hospital, the cerebral condition entirely dominated the clinical picture It is interesting to find that so delicate an organism should have survived in such large numbers the somewhat prolonged journey

No other occupants of the house partaking of the same food were affected It was thought that some relative might possibly have been a dysentery carrier, and inquiries made by one of us (S F B) pointed to an uncle of the child as a potential source She was constantly playing in his house and it was found that he had served about three years in Mesopotamia, and although he himself had only suffered from sand fly fever, had been in close contact for some months with a dysentery case His stools, however, proved negative on two occasions

OBSTRUCTION OF THE ŒSOPHAGUS

CAUSED BY A PERSISTENT DUCTUS ARTERIOSUS

BY A J JEX-BLAKE, M D OXF, F R C P LOND

With a Note on the Condition by

SIR ARTHUR KEITH,

CONSERVATOR OF MUSEUM, ROYAL COLLEGE OF SURGEONS OF ENGLAND

THE case set out here, although only that of a lurcher pup which had great difficulty in swallowing, is worthy of record for several reasons The nature of the œsophageal obstruction was most puzzling and obscure, but a post-mortem examination has revealed the fact that this pup was slowly starved of food and of oxygen by the natural contraction of the ductus arteriosus, and that, if the condition had been diagnosed, relief could have been given by a simple surgical operation The late Mr C B Lockwood presented to the Museum of the Royal College of Surgeons the thoracic parts of an individual who presented the same anomalies of the aorta and ductus arteriosus as occurred in the case of the puppy recorded here, but in Mr Lockwood's case there was no difficulty in either breathing or swallowing, because the cord of the ductus arteriosus had undergone a sufficient elongation to allow food and air to pass

A search of medical literature has not yielded a single case in which the œsophagus was constricted by a ductus arteriosus As will be seen from the illustration, the œsophagus and trachea passed through an arterial ring or noose, formed by the arch of the aorta to the right, and the pulmonary artery and ductus arteriosus to the left After birth, as we now know the ductus arteriosus in this pup became empty, its lumen became obliterated, forming a cord which steadily shortened and thus drew the arterial noose tight upon œsophagus and trachea. A brief description of the specimen will be given by Sir Arthur Keith here I propose to set out the remarkable clinical history of this case

Clinical History

In the course of breeding lurchers near Nairobi, Kenya Colony, the following condition was met with in a puppy A litter of ten was born in September 1924, the dam being an imported pedigree English greyhound bitch by a French lurcher from an English greyhound the sire a crossbred pointer dog Seven of the ten puppies were kept all appearing to be normal in every way After the third week it was noticed that one of them named Hubert was often sick in the middle of suckling After the fourth week the dam's milk was supplemented with feeds of bread-and-milk two or three times a day, and Hubert was seen to be almost always sick in the middle of these meals, immediately lapping up the vomit He seemed to have pain in the abdomen before vomiting, and sometimes scratched at his neck with his front paws just before he did so None of the other six puppies was ever seen to be sick The dam went dry after the sixth week, by which time the litter was being fed on milk, rusks, sweet potato and meat given thrice daily In spite of the frequent vomiting Hubert did pretty well for the first six weeks, as is shown by the following table of the puppies' weights in ounces —

At birth	Age in weeks—	1	2	3	4	5	6	7	8	10	17
oz 15	Hubert	27	43	56	78	104	114	113	150	222	560
15½	Average of six other puppies	31	59	68	83	111	143	168	203	250	496*

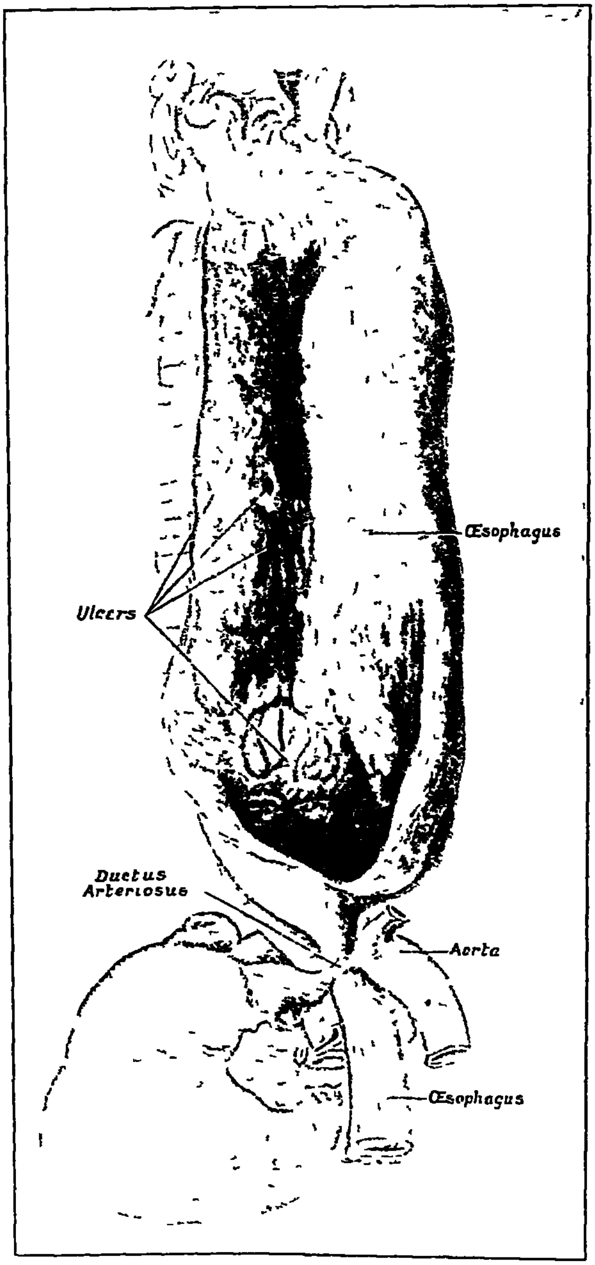
* Weight of one puppy only

It will be seen that during the seventh week Hubert lost an ounce in weight, while the other six gained on an average 25 oz each. At this time he was usually vomiting two or three times in the course of each meal, snuffling much through the nose, and making rattling noises in his throat which ceased when he had been sick. There was no cough and no discharge from the nose With the idea that he might have worms (flat or round, common in Kenya puppies) he was dosed twice with Sewell's santonin mixture, but without either improvement or the evacuation of any worms

Up to this time no diagnosis of the cause of the vomiting had been made When he was seven weeks' old it was noticed one day after a meal that Hubert had developed a soft, symmetrical, bulging and fluctuating tumour in the lower part of his neck, behind the wind-pipe and going down below the sternum This tumour disappeared when, after much palpation of the neck, he was sick and brought up about 2 oz of unaltered bread-and-milk taken two hours previously and only faintly acid to litmus paper It was then apparent that there was some obstruction about the lower part of the food-pipe, and it was thought that this was probably due to spasm at the cardiac end of the œsophagus rather than to the pressure of some new growth He was accordingly put on to a special fluid diet of milk, raw eggs, sugar and small pieces of butter, beaten up together and given four or five times a day, together with five or six drops of tincture of opium in each feed to relieve the supposed spasm. During the next (the eighth) week Hubert put on 37 oz in weight, the other six puppies averaging an increase of 35 oz, showing that the new diet was a success, there was very little vomiting How far the tincture of opium contributed to this success seemed doubtful, as it appeared to have no general effect on the puppy whatever, and after nine or ten days it was discontinued At this time, and subsequently, Hubert was running about the kennel and large enclosed yard with the other puppies, and it was not always possible to prevent him from getting hold of scraps of their solid food and bones from time to time, these he used to bring up again, but his own feeds he mostly kept down He also used to get solid food occasionally from his dam, who would jump into the puppy enclosure at odd times soon after her own meals and vomit up without effort a quantity of her dinner, this was always ravenously devoured by the puppies at once, although they might have been unable to finish their own dinners a few minutes previously Twice Hubert was seen to bring up gobbets of meat and sweet potato got hold of in this way soon after he had had his own fluid dinner on each occasion his own dinner failed to reappear showing that it had got safely through the œsophageal constriction into the stomach

At the end of the ninth week he was given some meals of boiled maize meal porridge and milk, which were gulped down hastily and tended to fill up his œsophagus it was found that if he was then held up in an upright position, and his neck was gently stroked, the œsophagus would slowly and jerkily empty itself into the stomach with a mixture of gurgles and clicks Hubert meanwhile making swallowing movements with his pharynx No œsophageal peristaltic movements could ever be detected in his neck

Much time and trouble were devoted to his feeding and during the tenth week he put on 46 oz five others of the puppies increasing by 25 oz each on the average At this time and for the rest of his life Hubert was a particularly lively and well liking puppy full of character, always hungry, and, like other puppies constantly picking up and swallowing scraps of all sorts, bones, small stones, lumps of earth, grains of maize, leaves, grass, cow-dung, pellets of goats'-dung (always particularly attractive, it seems), and so forth, when running about the farm and garden and when out walking These solids, of course, blocked and distended his œsophagus, and the distended œsophagus would press on his trachea and deform it against the back of his episternal notch with the result that his breathing became very wheezy and noisy and his activity diminished He would then stand still with his fore legs splayed out his head forward and his mouth a little open wheezing, sometimes in the course of a walk when he was in this state, one could lead him to fill up full on cow- or horse-dung, the only available pabulum, and then holding him upside



Drawing (7 12 natural size) of the œsophagus trachea and heart of a lurcher killed when 17 weeks old The œsophagus and trachea are seen to pass between the ductus arteriosus exposed on the left and the arch of the aorta which passes to the right of these two structures The ductus constricts the œsophagus which is greatly dilated and hypertrophied above the side of constriction The trachea is also caught within this vascular ring and its lumen is reduced to half the normal diameter The dilated part could hold 23 oz in life down, get him to vomit the lot, this being successfully accomplished he would recover his breath and his activity at once.

After the twelfth week Hubert had three meals a day, and a routine developed in their administration His neck was first examined for signs of distension of the œsophagus, and if this seemed absent he was given his fluid meal If this did not go down, but began to bulge out his œsophagus, or if he started with a distended œsophagus, he was held up in an upright position for a time in the hope that its contents would work through into the stomach If they did not do so and the œsophagus remained distended, he was encouraged to gorge himself on maize-meal-and-water porridge (a cheap food) until the œsophagus was distended right up to the lower jaw, until, in fact, he was full up to the neck. He was then held upside down over an empty pie-dish and gently shaken up and down until he was sick, the vomiting almost always took place without effort and in a single rush, and last of all would come out some solid substance picked up in the farm or garden that had lodged at the bottom of the gullet and prevented the passage of the liquid food into the stomach He seemed unwilling to part with the contents of his œsophagus, and could not be made to vomit at all unless the œsophagus was pretty full, once it was emptied in the way described above he would take his fluid meal of milk, eggs, sugar and butter, or his thin porridge of maize-meal and milk, with great appetite and success

During the last three weeks of his life Hubert's œsophagus had to be cleared out before meals in this way with increasing frequency, it held about 11 oz when he was 12 weeks old, and about 23 oz at 17 weeks Latterly it was found that he did not always clear his œsophagus when made to vomit, and that it might be necessary to make him sick two or even three times before liquid food could get on into the stomach, so that it took half or three-quarters of an hour to feed him At 17 weeks he weighed 35 lb, and it became rather an effort to hold him upside down for as long as might be necessary to induce vomiting, and sometimes the liquid food seemed to cause pain as it went down, giving rise to the suspicion of some ulceration at the lower end of the œsophagus, though no blood was ever seen in the vomit It was felt that his condition was incurable, and so, with great regrets, he was killed by chloroform when 123 days old At the same time another puppy of the same litter, named Hannah, weighing 32 lb, and suffering from a recent slowly progressing paresis of the hind legs for which no cause was found—it may have been traumatic in origin—was chloroformed, and dissected for purposes of comparison

Description of Specimen by Sir Arthur Keith

The chief structural abnormalities are shown in the illustration The arch of the aorta has persisted on the left side—as in birds—instead of on the right, the branches of the arch coming off in the following order right carotid, left carotid, right subclavian, left subclavian, just as in Mr Lockwood's specimen (No 566 1, R C S Museum) The ductus arteriosus passes across the left side of the œsophagus from pulmonary artery to the arch of the aorta, at the origin of the left subclavian, forming a cord 20 mm long and 5 mm in thickness The œsophagus, where constricted by the ductus, has a diameter of 10 mm, its lumen being only 3 5 mm in diameter Above the constriction the œsophagus has a circumference of 150 mm, whereas in the normal dog this measurement is only 60 mm The muscle coats of the retrotracheal part of the œsophagus of the normal dog had a thickness 0 02 mm, whereas in the dilated œsophagus the thickness is 0 05 mm Thus, as a result of constriction, the muscular coats in the retrotracheal segment of the œsophagus of the ailing pup had undergone a hypertrophy of about six times the normal amount The mucous coat had also undergone a general thickening, expansion, and hypertrophy, and had become infected and ulcerated at many points The dilatation of the œsophagus pressed upon the trachea, particularly the part above the arch of the aorta, so that this part, and particularly the segment which is engaged within the arterial ring or noose, was only 12 mm in diameter, whereas in the normal dog of the same age it was 18 mm in diameter

The case is very remarkable in many ways, for it is not often we find Nature killing her progeny by her own devices Normally the arch of the aorta and ductus arteriosus lie on the same side of trachea and œsophagus, but in this case they formed a ring round them It was not until the pup was three weeks of age that symptoms of œsophageal obstruction were observed, obliteration and shortening of the ductus arteriosus proceeded apace in the second week, and by the third the ductus began to constrict the œsophagus Much has been written as to the clinical manifestations of a persistent ductus arteriosus, but this appears to be the first case in which it was found to have caused death by constricting the food and air passages The dissection represented in the figure was made from Dr Jex-Blake's specimen, and is preserved in the teratological section of the R C S Museum, its number being 566 15

Clinical and Laboratory Notes.

EXCESSIVE INSULIN DOSAGE IN DIABETIC GANGRENE

By Howard F Root, M D,
NEW ENGLAND DEACONESS HOSPITAL BOSTON, MASS, U S A

In The Lancet of May 23rd, 1925, Dr Carrasco de Formiguera has criticised the use of doses of insulin in cases of diabetes with infection, which failed to make the patient sugar-free and to maintain a normal blood-sugar content That the use of large doses of insulin in such cases may be not only expensive and needless, but actually dangerous, should be remembered by physicians, and for this reason I wish to record the following case, seen in consultation at some distance from Boston, on Dec 27th, 1925

Housewife, aged 51 years Diabetes was discovered in 1914, and she had been treated by various physicians during the intervening period without satisfactory coöperation on her part Four weeks previously, because of a black, painful toe on the right foot, she entered a hospital where the treatment of diabetes is an exception Her temperature was 101 6° F, and the urine contained 2 7 per cent of sugar The toe was amputated on Dec 5th, but the fever continued The wound did not heal, and three weeks later the leg was amputated below the knee Fever still persisted The stump became discoloured and gangrenous, and the patient became weaker Although the urine had been sugar-free constantly after the third day in the hospital, the dose of insulin was steadily increased in the attempt to get a normal morning blood-sugar The following table, kindly placed at my disposal, gives the analyses up to and including the date upon which I was first consulted

Fatal Hypoglycæmia with Sepsis and Uræmia

Date 1925		Urine sugar per cent	Blood sugar per cent fasting	Temperature Degrees F	Insulin daily Units
Nov	30th	2 0	0 40	101 6	—
Dec	4th	0	0 14	101 2	60
	5th	0	0 20	100 0	60
„	7th	0	0 25	101 4	60
„	8th	0	0 19	100 4	65
„	9th	0	0 14	102 2	75
„	10th	0	0 13	101 4	75
„	15th	0	0 21	101 2	75
„	18th	0	0 20	101·0	105
„	21st	0	0 22	102 8	105
„	23rd	0	0 20	98·0	105
„	25th*	0	0 24	100 4	230
„	26th	0	—	99·0	240
„	27th†	—	0·015	—	120

* Non protein nitrogen of the blood 86·0 mg per 100 c cm.
† Non protein nitrogen of the blood 185·0 mg per 100 c cm

Examination revealed an apparently dying woman, eyes rolling, stomach contents drooling from the mouth, almost pulseless, unresponsive, but with moist skin Hypoglycæmia was diagnosed A blood specimen was drawn immediately for chemical analysis, and with the same syringe and needle 10 g glucose in 50 per cent solution were given intravenously She responded promptly and within a few minutes answered questions rationally Within an hour she again relapsed, and a second intravenous injection of glucose gave immediate improvement Later, I understand, a third relapse followed, and she died before glucose could be given.

The blood-sugar percentage at 5 30 P M immediately before the first injection of glucose proved to be 0 015

Fortunately, although the immediate cause of death was clearly hypoglycæmia due to an overdose of insulin, one can honestly state that the prognosis was already hopeless owing to the sepsis and uræmia On one day in September, 1925, in the wards of the New England Deaconess Hospital, 15 diabetic patients were under treatment for gangrene or infections of the feet Six required no insulin, and the average dose of insulin for the other was but 16 units a day It is rare that a diabetic patient, except in coma, requires 50 units of insulin a day for more than a few days An abnormally high blood-sugar before breakfast does not justify large doses of insulin throughout the day unless the urine continues to contain sugar, or the blood-sugar percentage is at all times above normal When large doses of insulin are being given, the blood-sugar should be determined not only fasting, but also in the late forenoon or mid-afternoon as well until one is familiar with the case [1] A safe and simple rule for the use of insulin in the presence of infection when examinations of the blood cannot be made is to test the urine before each meal and at 10 P M, and give insulin at these times only if sugar is present If the urine is sugar-free and hyperglycæmia is later proved present, a moderate increase in insulin may be used

A CASE OF PNEUMOCOCCAL MENINGITIS

ORIGINATING FROM AN OCCULT SINUSITIS

By ISABEL FALCONER KING, M B EDIN,
D P M LOND,
SENIOR ASSISTANT PHYSICIAN, RUBERY HILL MENTAL HOSPITAL, BIRMINGHAM

IN this case the course of the disease was extremely rapid the origin of the infection from the sinusitis was very definite, and the existence of the sinusitis unsuspected

E H, a woman aged 36, a case of dementia paranoides, who was apparently in good health save for some shortening of cardiac diastole, during the first week of January, 1926, was noticed to be slightly irritable in temper—a most unusual state for her as she was of cheerful habit and tended to be exalted—but made no complaint of illness

Jan 7th Early in the morning she vomited and complained of headache Temperature, 97 4° F, pulse, 80, respiration 20 She was kept in bed At 6 P M., T 103°, P, 96, R, 24 No localising signs were found on examination

8th 10 A M T, 101 4°, P, 96, R, 24 She was restless, confused, and resistive, but did not yet present any localising signs At 6 P M. T 100 2° F, P, 106; R, 24 Kernig's sign positive on both sides and head retraction present She was much confused and very resistive, lumbar puncture being impossible

9th 1 50 A M. She had a convulsion of an apoplectic character After this she was comatose, the respiration being stertorous and tending to Cheyne-Stokes in type The pulse was full and bounding There was paralysis of the left face and right arm and leg The plantar reflex was extensor on the right There was skew deviation of the eyes The pupils were contracted, equal, regular, and non reactive 10 A M. T, 102° P, 98 R, 36 6 P M T, 101 8°, P, 12- R, 38 During this time she became rapidly worse The plantar response became extensor on both sides

The coma deepened, and she died on Jan 10th at 12 30 P M T, 108 2°, P, 98, R, 41

Autopsy—The body is well nourished and shows the usual post-mortem rigidity and lividity There are no bed-sores nor external signs of injury of recent origin The skull cap is normal The brain surface is the seat of a diffuse generalised leptomeningitis, the sulci being filled with greenish pus The tip of the right frontal lobe is adherent to the frontal plate of the ethmoid and to the cribriform plate The basal subarachnoid spaces are full of greenish pus The substance of the brain shows no macroscopic lesion. The right frontal, right ethmoidal, and the sphenoidal sinuses contain pus, most marked in the last named The cerebral vessels are healthy except in so far as they are surrounded by pus leading along the various sulci. The myocardium is somewhat fatty The endocardium is healthy except for some roughening of the tricuspid cusps Aorta and coronaries normal Lungs show no definite pathological change beyond some œdema of both bases Nothing noteworthy in abdominal viscera.

Bacteriological Report—Swabs from brain, frontal ethmoidal, and sphenoidal sinuses, direct smears all showed a Gram-positive capsulated diplococcus which was overgrown by contaminating organisms on cultivation.

The fact that there were no signs or symptoms to suggest a sinusitis during life is interesting

I am indebted to Dr T C Graves, medical superintendent of the Rubery Hill and Hollymoor Mental Hospitals, for permission to publish this case

SCARLET FEVER ANTITOXIN

IN A CASE OF ENDOCARDITIS AND MYOCARDITIS

By E S TOOGOOD, M A OXF, M R C S ENG,
CORONER FOR EAST CORNWALL.

THE following case of a severe infection of the heart, in which treatment with scarlet fever antitoxin was used, and was followed by complete recovery, appears to be worth recording

The patient, a girl of 11, had contracted diphtheria at school and was discharged from the sanatorium some two months previously after negative throat cultivations had been secured When I first saw her she was suffering from an acute tonsillitis which responded to treatment on the usual lines Three weeks later I was called in again as she had developed another sore-throat and had a temperature of 102° F The temperature was maintained for several days at this level with slight morning remissions the pulse-rate was persistently raised, being 132 to 144, the heart was dilated, and a double bruit was audible at the apex The tonsils quickly cleared up under treatment, but the cardiac signs remained unaltered and a tentative diagnosis of carditis, involving both the endocardium and the myocardium, was made This was confirmed by Dr A B Soltau, of Plymouth, who suggested the trial of scarlet fever antitoxin, as the condition was so strongly suggestive of a streptococcal infection originating in the throat

Three doses of the serum were given, each of 10 c cm, at intervals of four and nine days Careful desensitisation was carried out before the first dose was given, having in mind the fact that the child had quite recently had anti-diphtheritic serum, and no anaphylactic symptoms ensued Shortly before the second dose of serum typical petechial spots appeared but these quickly faded after the second dose Immediately after the second dose the temperature began gradually to subside reaching the normal in a few days and only rising again to 99° for one day after the third dose The pulse-rate took longer to fall to normal and did not reach 80 for seven weeks The cardiac bruits disappeared entirely, and the child, when seen quite recently, was in her usual normal health, with no discoverable cardiac lesion

Considering the severity of the infection, and the grave prognosis which was given, the prompt response to the use of the serum (Parke, Davis and Co preparation was used) was striking. and it suggests that this method of treatment may be of great value in dealing with these very grave conditions

DONATIONS AND BEQUESTS—Miss Mary Dorsett Foster, of Bloxwich, Staffs, left £735 to the Royal Orphanage, Wolverhampton, and £100 each to the Walsall General Hospital, and the Walsall Victoria Nursing Institution —Mr John Henry James Hornsby, of Cuckfield Park, Sussex, after several personal bequests left all his other property, which amounts to about £60 000, "for such charitable purposes and objects as I shall hereafter by codicil direct and in default of and subject to any such directions as my trustees in their uncontrolled discretion shall decide" No such codicil is filed with the will —Mr Robert Dixon Steele, of Prenton, Cheshire retired chemical manufacturer, left over £7000 to charities, including £1000 each to the Liverpool Royal Infirmary, the David Lewis Northern Hospital, the Liverpool Royal Southern Hospital and the Liverpool Stanley Hospital, £500 each to the Liverpool Maternity Hospital, the Hospital for Women, Shaw-street, the Children's Convalescent Home, West Kirby, and the Royal Liverpool Seamen's Orphanage

---

[1] Jonas, Miller, and Teller Arch Int Med, 1925, xxxv, 289

BRITISH MEDICAL ASSOCIATION

ANNUAL MEETING AT NOTTINGHAM

(Continued from p 500)

SECTION OF LARYNGOLOGY AND OTOLOGY

Wednesday, July 21st.

Dr. **Brown Kelly** (Glasgow) presided over this Section. The first morning was devoted to a discussion on the treatment of

Malignant Disease of the Upper Air and Food Passages

Mr F J **Steward** (London) read the opening paper, in which he dealt with the principles of surgical treatment. He discussed the subject under four headings (1) Selection of Cases, (2) Preparation, (3) Operation, (4) After-treatment. In selecting patients for operation it was convenient to divide them into three groups—favourable, doubtful, and hopeless. Doubtful cases made up about 50 per cent of the total number seen, 40 per cent. being practically hopeless when brought up, and less than 10 per cent being really favourable cases. As to preparation, while recognising the extreme importance of oral sepsis, he was inclined to favour methods less drastic than those considered imperative by some operators in recent years; he recommended painting infected tonsils with 1 in 500 chinosol in glycerine. In connexion with the operation, he advocated the use of the intratracheal insufflation of ether; he reviewed the methods of approach in various regions, emphasising the importance of repairing the wound as a definite third stage of the operation. As to after-treatment, he recommended feeding by passing a soft rubber catheter obliquely through the wound in the neck into the pharynx. The pharyngeal wall and skin should be fixed tightly round the catheter so that it does not slip out and there is no leakage.

X Rays.

Dr **Robert Knox** (London) gave an account of the treatment by means of X rays in these regions where the small area containing a large number of structures makes it difficult to restrict the beam of rays accurately to the parts under treatment. It was essential, further, that the skin and subjacent tissues should not be damaged, and the limited depth of tissue available presented another difficulty. At the present time higher voltages enabled a greater intensity to be applied at a given depth, whilst working at a greater tube distance. Filters on the skin of 2 to 10 cm of wax aided the operator in giving a strong dose at a depth with no risk of damage to the skin. The exact technique applied on these principles was described by Dr Knox, and also the method of estimating the appropriate dose, which was usually given in fractions at short intervals. The results, he said, had now greatly improved. He recommended pre-operative treatment in cases complicated by widespread glandular involvement. In inoperable cases X rays were used with no hope of cure but to alleviate the symptoms, with a certain measure of success. The outstanding feature in the improved technique had been the recognition that it was neither necessary nor advisable to adopt the lethal dose of Seitz and Wintz as the unit of effective dosage, but to take this as a unit of measurement of the total dose, which would be spread over days, weeks or months, according to the urgency of the case.

Radium

Sir **William Milligan** (Manchester) discussed treatment by means of radium, and foreshadowed the time when, with improved technique and a more accurate knowledge of dosage and duration of exposure, radium would be used in operable as well as inoperable cases. For the present his remarks were confined to the vast and distressing array of inoperable cases. There were two schools (1) those who believe in large doses and short exposures, and (2) those who believe in small doses and long exposures, to which latter Sir William Milligan himself belonged, the exposures being continued up to 10, 14 or even 21 days. The conclusions which he had reached were as follows (1) that in the present state of our knowledge surgical removal of a malignant growth should be undertaken if a practical proposition, (2) that the lymphatic nodes into which the lymph stream from the growth drains should be removed by dissection or by block dissection, (3) that the lymphatic vessels between the growth and the infected nodes should be irradiated either from within or by external irradiation, preferably by the former method, (4) that the growth to be irradiated should, wherever possible, be exposed so as to admit of its being handled. (5) that the introduction into the growth of a large number of seeds containing small doses of emanation to be retained in situ gives even better results than the implantation of screened tubes; (6) that the introduction of the seeds should follow a definite mathematical plan, (7) that as the periphery of the growth is reached the emanation dose may be reduced; (8) that ligation of the main artery to the growth should invariably be carried out.

Surgical Diathermy

Dr W S **Syme** (Glasgow) said that the value of surgical diathermy in the treatment of malignant disease of the mouth and throat decreased as the site of the disease descended from the alveolus to the œsophagus. The most suitable cases were those confined to the mouth, including the tongue, jaws, palate, fauces and floor of mouth. Dental sepsis must be treated as for an ordinary operation. As diathermy would not seal larger vessels, one or both lingual arteries or one or both external carotids might have to be ligatured. A preliminary tracheotomy might be advisable. Affected glands should be removed before or after the main operation. In some cases glands which appeared to be inoperable become operable after the removal of the primary growth and the sepsis attendant on it. In dealing with the growth itself the aim should be complete removal, first coagulating the tissue all round the tumour and then removing it, or its destruction in situ. The former was the better method. In inoperable cases, however advanced, much relief followed surgical diathermy. While diathermy caused remarkably little immediate shock, delayed shock could not be excluded, and experience taught that care must be exercised in regard to the duration of exposure to the diathermy current at one time. Dr Syme gave statistics of 122 cases treated by this method during the four years 1922–25. Of these 30 were alive on May 31st, 1926, varying from over six months to over four years after operation, 13 having survived for more than three years without recurrence. He claimed that in the treatment of malignant disease of the mouth the method of removal by diathermy was preferable to any other.

In the discussion which followed these four papers a large number of visitors took part, including Dr **William Hill** (London), who gave a demonstration of the technique of applying radium in the treatment of œsophageal cancer and Prof H **Neumann** (Vienna) who spoke of the use of intravenous injections of sugar as an auxiliary to X ray treatment.

In the afternoon Mr A R **Tweedie** and Mr **Bell Tawse** showed laryngological cases, including many which had been successfully treated by operation for malignant disease. These patients, amongst whom was a man with an unusually large pharyngeal pouch, formed the basis of a discussion.

Thursday, July 22nd

The second morning was spent in a discussion on the

After-treatment and Results of Mastoid Operations,

Mr **Norman Patterson** (London) presiding. The opening papers by Mr G J **Jenkins** (London) and Mr J S **Fraser** (Edinburgh) dealt respectively with the operations for acute disease and with the radical mastoid operation.

Operation in Acute Disease.

Mr. Jenkins insisted upon the importance of adequate drainage, and pointed out that primary suture with or without the use of antiseptics sometimes fails, and that such a failure might prove to be a matter of grave concern. Primary suture was preferable to secondary, and was unsafe when extensive irregular cavities prevented the soft parts from being brought into intimate contact with the deep bony parts. If this method was attempted it should be only in cases where the soft tissues fell in contact with the bone. There were two other considerations, the general condition of the patient and the character of the pus. If the pus was thin and watery, indicating inadequate local resistance, primary suture was contra-indicated. Primary suture sometimes failed even in selected cases, and even when it was successful the result was not always satisfactory. Mr. Jenkins advocated treatment by maintenance of an open wound, and he failed to see any advantage in favour of meatal drainage over drainage from the lower part of the mastoid wound. The advocates of meatal drainage appeared to be biased by the pleasant appearance of a healed postaural incision. Mr. Jenkins gave a detailed account of his technique in the management of the postaural wound, and warmly supported secondary suture which rarely failed if carefully done and gave the best cosmetic result of any of the methods of treatment.

The Radical Mastoid Operation.

Mr. Fraser, dealing with the radical and modified radical operations, did not favour Barany's suggestion of omitting the meatal plastic and leaving the postaural wound open. He recommended making a large meatus by means of Korner's plastic operation. He confirmed the claim of H. J. Marriage that if skin grafts are used the operation cavity heals more quickly, the outline of the inner wall is preserved in almost all cases, that the duration of the treatment is reduced, that a dry cavity results in a larger percentage of cases than with other methods, and that the resulting hearing power is better. If a graft is not applied, he held, the after-treatment is more troublesome on account of the formation of excessive granulations, which grow up from the facial spur and downwards from the cut edge of the attic and aditus. Thus a membrane tends to form about the level of the isthmus, shutting off the deeper part of the cavity. In any case it is necessary to clean out wax and epithelial accumulations at regular intervals. Mr. Fraser gave a valuable statistical record of the after results of 628 radical operations. After grafting a satisfactory result was obtained in 83 per cent., and the hearing improved in 61 per cent. Without using skin grafts a satisfactory result was obtained in 52 per cent., and the hearing improved in 44 per cent.

Mr. L. COLLEDGE (London) considered that in acute cases it was safer and less likely to lead to recurrence of the disease to close the wound by secondary suture, and preferred to treat large bone cavities by the method of Carrel. After the radical operation he believed that the employment of Thiersch grafts not only led to quicker healing, but the end-result was better, also the hearing.

Mr. H. TILLEY (London) indicated how the dressings can be made painless when drainage-tubes are used by protecting the wound surface with pieces of oiled silk.

Prof. NEUMANN, in discussing the papers, gave statistics of 800 cases of acute mastoid disease, and demonstrated the surgical anatomy of the part in order to emphasise the importance of a complete primary operation.

Dr. SYME expressed himself an unrepentant advocate of bipp and primary suture.

In the afternoon a demonstration of otological cases was held.

FRIDAY, JULY 23RD.

THE NASAL SEPTUM.

Dr. JOBSON HORNE (London) read a paper entitled the Sorrows of the Septum. He said that the higher the type of race the more frequent was trouble with the septum. There was no hæmorrhage of greater frequency than bleeding from the nose, and no hæmorrhage that was sooner forgotten. Hence the difficulty in obtaining reliable statistics. He had found on inquiry that 142 people out of 1000 had recollection of blood dropping from the nose, obviously a low estimate. Nose-bleeding was rather more common in the male than in the female sex; and deformities of the nasal septum were also more common in the male sex. The bleeding-point in the vast majority of cases was to be found in the cartilaginous septum. The human face, in contrast with that of the lower animals, was characterised by being extended vertically instead of horizontally. This characteristic determined the development of the nasal septum, and the septum determined the development of the nose. The structures entering into the formation of the septum in man were subject to delayed or excessive development. The developmental activity continued not only up to puberty, but, in a greater or less degree, some years afterwards. With that activity there was an increase of newly formed blood-vessels, resulting in a greater tendency to epistaxis and to deformities of the septum. The higher the type of race, the more prolonged was the developmental activity and the more common the formation of ridges, spurs, and deflections. The vascularity of the septum was a cardinal point. It would be difficult to mention any condition of the septum that a rhinologist was called upon to treat that was not vascular in origin—for example, hæmatoma, abscess, fibro-angioma, bleeding polypus, septal thickening, outgrowths, ridges, spurs, crests, and last, but not least, deflections of the septum. Deformities of the septum were found in 80 per cent. of European skulls. Clinical experience taught that some irregularity of the cartilaginous portion of the septum was the rule rather than the exception. So that in the higher types of races the abnormal became the normal. Statistics based upon the examination of skulls of the lower types showed the reverse: the septum was free from deflections and irregularities in 80 per cent. In routine examinations of the nose one frequently met with ridges, spurs, and deformities of the septum in no way material to the case. The nasal symptoms complained of were often quite independent of any irregularity of the septum, and could be completely removed by other means without interference with the septum. Passing to the much smaller group of cases in which interference with the nasal septum was called for, Dr. Horne held that the operation for the removal of the septum by submucous resection was faulty inasmuch as it deprived the patient of a *rigid* septum, and thereby impaired the nose as an organ of respiration, and at times in other ways. The nasal passages after the operation at times were left too patent, the septum too thin, and patients complained of symptoms due to the flapping of the thin membranous septum in the passage of air. Further, in spite of a reduction of the anterior ends of the middle turbinated bodies at the time of the removal of the septum, very considerable hypertrophy of those structures had ensued in some cases, calling for relief from nasal obstruction. General anæsthesia for operations upon the upper air passages, particularly when prolonged, was attended with greater risk after interference with the septum. It was questionable whether the end-results of rectifying the nasal septum by removing it were any better than those obtained by other operations that left the septum intact. The procedure followed by the speaker when orthopædic surgery upon the septum was inevitable was a modification of Moure's operation. In spite of the argument about the resiliency of cartilage he claimed that the operation gave as good results without the unfortunate troubles that have followed submucous resection and removal of the septum. He was in favour of a limited submucous resection for the removal of spurs and ridges.

Dr. Horne's paper provoked an animated discussion, in which 14 members joined. Mr. TILLEY

BRITISH MEDICAL ASSOCIATION.

ANNUAL MEETING AT NOTTINGHAM

(Continued from p 500)

SECTION OF LARYNGOLOGY AND OTOLOGY

Wednesday, July 21st.

Dr Brown Kelly (Glasgow) presided over this Section The first morning was devoted to a discussion on the treatment of

Malignant Disease of the Upper Air and Food Passages

Mr F J Steward (London) read the opening paper in which he dealt with the principles of surgical treatment He discussed the subject under four headings (1) Selection of Cases, (2) Preparation, (3) Operation, (4) After-treatment In selecting patients for operation it was convenient to divide them into three groups—favourable, doubtful, and hopeless Doubtful cases made up about 50 per cent of the total number seen, 40 per cent being practically hopeless when brought up, and less than 10 per cent being really favourable cases As to preparation, while recognising the extreme importance of oral sepsis, he was inclined to favour methods less drastic than those considered imperative by some operators in recent years, he recommended painting infected tonsils with 1 in 500 chinosol in glycerine In connexion with the operation, he advocated the use of the intratracheal insufflation of ether; he reviewed the methods of approach in various regions, emphasising the importance of repairing the wound as a definite third stage of the operation As to after-treatment, he recommended feeding by passing a soft rubber catheter obliquely through the wound in the neck into the pharynx The pharyngeal wall and skin should be fixed tightly round the catheter so that it does not slip out and there is no leakage

X Rays

Dr. Robert Knox (London) gave an account of the treatment by means of X rays in these regions where the small area containing a large number of structures makes it difficult to restrict the beam of rays accurately to the parts under treatment It was essential, further, that the skin and subjacent tissues should not be damaged, and the limited depth of tissue available presented another difficulty At the present time higher voltages enabled a greater intensity to be applied at a given depth, whilst working at a greater tube distance Filters on the skin of 2 to 10 cm of wax aided the operator in giving a strong dose at a depth with no risk of damage to the skin The exact technique applied on these principles was described by Dr Knox, and also the method of estimating the appropriate dose, which was usually given in fractions at short intervals The results, he said, had now greatly improved He recommended pre-operative treatment in cases complicated by wide-spread glandular involvement In inoperable cases X rays were used with no hope of cure but to alleviate symptoms, with a certain measure of success The outstanding feature in the improved technique had been the recognition that it was neither necessary nor advisable to adopt the lethal dose of Seitz and Wintz as the unit of effective dosage but to take this as a unit of measurement of the total dose, which would be spread over days, weeks or months according to the urgency of the case

Radium

Sir William Milligan (Manchester) discussed treatment by means of radium, and foreshadowed the time when, with improved technique and a more accurate knowledge of dosage and duration of exposure, radium would be used in operable as well as inoperable cases For the present his remarks were confined to the vast and distressing array of inoperable cases There were two schools (1) those who believe in large doses and short exposures and (2) those who believe in small doses and long exposures, to which latter Sir William Milligan himself belonged, the exposures being continued up to 10, 14, or even 21 days The conclusions which he had reached were as follows (1) that in the present state of our knowledge surgical removal of a malignant growth should be undertaken if a practical proposition, (2) that the lymphatic nodes into which the lymph stream from the growth drains should be removed by dissection or by block dissection, (3) that the lymphatic vessels between the growth and the infected nodes should be irradiated either from within or by external irradiation, preferably by the former method, (4) that the growth to be irradiated should, wherever possible, be exposed so as to admit of its being handled, (5) that the introduction into the growth of a large number of seeds containing small doses of emanation to be retained in situ gives even better results than the implantation of screened tubes; (6) that the introduction of the seeds should follow a definite mathematical plan, (7) that as the periphery of the growth is reached the emanation dose may be reduced, (8) that ligation of the main artery to the growth should invariably be carried out

Surgical Diathermy.

Dr. W S Syme (Glasgow) said that the value of surgical diathermy in the treatment of malignant disease of the mouth and throat decreased as the site of the disease descended from the alveolus to the œsophagus The most suitable cases were those confined to the mouth, including the tongue, jaws, palate, fauces and floor of mouth. Dental sepsis must be treated as for an ordinary operation As diathermy would not seal larger vessels, one or both lingual arteries or one or both external carotids might have to be ligatured A preliminary tracheotomy might be advisable Affected glands should be removed before or after the main operation In some cases glands which appeared to be inoperable become operable after the removal of the primary growth and the sepsis attendant on it In dealing with the growth itself the aim should be complete removal, first coagulating the tissue all round the tumour and then removing it, or its destruction in situ The former was the better method. In inoperable cases, however advanced, much relief followed surgical diathermy While diathermy caused remarkably little immediate shock, delayed shock could not be excluded, and experience taught that care must be exercised in regard to the duration of exposure to the diathermy current at one time Dr Syme gave statistics of 122 cases treated by this method during the four years 1922–25 Of these 39 were alive on May 31st, 1926, varying from over six months to over four years after operation, 13 having survived for more than three years without recurrence He claimed that in the treatment of malignant disease of the mouth the method of removal by diathermy was preferable to any other

In the discussion which followed these four papers a large number of visitors took part, including Dr William Hill (London), who gave a demonstration of the technique of applying radium in the treatment of œsophageal cancer, and Prof H Neumann (Vienna) who spoke of the use of intravenous injections of sugar as an auxiliary to X ray treatment

In the afternoon Mr A R Tweedie and Mr Bell Tawse showed laryngological cases, including many which had been successfully treated by operation for malignant disease These patients amongst whom was a man with an unusually large pharyngeal pouch formed the basis of a discussion

Thursday, July 22nd

The second morning was spent in a discussion on the

After-Treatment and Results of Mastoid Operations

Mr Norman Patterson (London) presiding The opening papers by Mr G J Jenkins (London) and Mr J S Fraser (Edinburgh) dealt respectively with operations for acute disease and with the radical mastoid operation lying constitutional factor, which undoubtedly had a bearing on the ætiology. It was in this category that we should place those cases which appear to depend on focal sepsis for their origin, and may clear up permanently when the foci have been discovered and eliminated.

In summarising his conclusions Dr. Whitfield stressed the following three points: (1) Eczema is a clinical condition and not a disease with a single specific cause. (2) It is the result of irritation of the skin, and is associated with an undue susceptibility. (3) This susceptibility may be congenital or acquired, and when acquired may be the result of repeated external trauma or a generalised toxæmia of particular type.

Dr. W. Dyson (Manchester) defined eczema as a non-microbic affection of the skin, produced by external irritation, in a predisposed subject. The predisposition, which implied an abnormal susceptibility to physiological stimuli of all kinds, once acquired, might remain local in a single area, or might spread and become more or less generalised. The stimulus which caused the reaction might be a single specific one at first. Later, specificity might be lost, and the patient's skin respond to all and any variety of what in normal individuals were regarded as the ordinary physiological stimuli of daily life—e.g., light, heat, water, &c.

Dr. Dyson made the further suggestion that the skin itself might occupy in the normal economy a position in some degree resembling that of the ductless glands. The anatomical and microscopic structures did not altogether differ in certain respects. He thought that the therapeutic action of X rays might be to some degree explained by such an assumption. Their action might set free certain substances which, finding their way into the circulation, might there give rise to the production of specific antibodies, which in their turn would have a favourable action on the course of the disease.

Dr. H. W. Barber (London) was in almost complete agreement with the observations of Dr. Whitfield. He proposed not to discuss the ætiology of eczema in general, but to attempt to differentiate certain clinical types of the eruption with a view to seeing whether it is not possible to deduce the probable cause in a given case from the distribution, configuration, and type of lesion present.

As regards "seborrhœic eczema," he agreed that this was not a true eczema, but an inflammatory reaction of the eczematous type (eczematide of Darier) due to infective organisms, comparable to that produced by a ringworm fungus. But occasionally in seborrhœic patients—particularly in hot weather—an acute true amicrobial eczematous reaction did occur—for example, on the hands and feet. This might be comparable to the third type of "seborrhœic eczema," referred to by Dr. Whitfield as occurring on the back, which he has suggested may be due to irritation by a fatty acid—e.g., butyric acid—produced by bacterial decomposition of sweat. But such an eczema—at any rate when it occurs on the palms and soles—was more likely, in the speaker's opinion, to be due to the actual excretion of fatty acids by the sweat glands, as the palmar sweat is always strongly acid in these cases, although sebaceous glands are absent on the palms and soles. This type of eczema might occur in seborrhœic subjects, apart from any active seborrhœic dermatitis being present. The condition labelled "infective eczematoid dermatitis" by American authors had been shown to be a definite entity due to epidermal sensitisation to a staphylococcus. "Nummular eczema" was characterised by bilateral symmetry of the lesions, the eruption occurring chiefly on the limbs. The primary lesion was often a single eczematous papule which became a vesicle of considerable size, drying up to form a single brownish scab. The nummular patches were more or less circular with sharply defined margins, and were characterised by the relatively large size of the vesicles and resulting scabs and their tendency to remain discrete. The evolution of this type of eczema made it almost certain that the toxin to which the epidermis was sensitised was borne in the blood-stream whether from a focus in the skin itself or from within. True gouty eczema was in these days rare, and should not be diagnosed unless associated with a high blood pressure and abnormal uric acid blood content. There was the type of eczema occurring in patients who had inherited the ichthyosis-asthma-hay-fever-prurigo-eczema-urticaria complex. They had almost invariably suffered from infantile eczema, and later developed circumscribed prurigo. The majority were, perhaps, ichthyotics, but apart from this their skin was curiously sallow, thickened and œdematous looking, so that they could be recognised at a glance.

Dr. A. R. Hallam (Sheffield) questioned the necessity of external causation in the production of eczema, and believed in the possibility of its occurrence without it. He quoted the experiments of Jaeger (a pupil of Bloch), who applied plasters containing known percentages of certain irritants to a large number of individuals, of whom a proportion were known to be eczematous subjects. Of these 35 per cent. gave a positive reaction in the specific eczematous sense, of the remainder only 5 per cent., and these had therefore to be regarded as potentially inclined to the disease.

Dr. Haldin Davis (London) declared that more research into the internal chemical mechanisms of the body was necessary before an advance in our knowledge of the ætiology of eczema could be made. He had found that some cases could be benefited by the exclusion of sugar in the dietary, and in view of this fact had tested the blood-sugar reactions of some 50 eczematous patients at the Royal Free Hospital. An abnormality in one of three directions was detected in two-thirds of the cases examined. Eczematous subjects appeared to show either (1) a high resting value, or (2) a higher rise after glucose ingestion than is normal, or (3) a slower fall. He thought the nervous system might well be implicated in causation, and suggested that, just as in tetanus, the toxins responsible might travel and distribute themselves by way of the perineural sheaths.

Dr. H. Semon (London), while admitting the accessory importance of blood states such as hyperglycæmia and gout, and local traumatism in trade or varicose dermatitis in the causation of eczema, could not subscribe to the view that these factors alone or combined were sufficient to produce the classical eruption in subjects who were not predisposed to it. In his view it was necessary to assume the existence of a specialised cutaneous response, which an American author had concisely termed a "tissue idiosyncrasy." Dr. Semon suggested that in view of the fact that skin areas occupied by nævi never showed any reaction when the whole of the rest of the body might be involved in the eczematous response, the actual anatomical structures reacting might conceivably be the vasoconstrictor and dilator nerves, which were known to be altogether lacking in neurovascular structures.

Dr. G. B. Dowling (London) drew a nosological distinction between eczema and dermatitis, and suggested that the latter term should be retained for that form of skin reaction which was evoked by the irritation of industrial chemicals—e.g., soap or other recognised skin irritant. He thought that constitutional factors must be multiple, and might be congenital or acquired. In the present state of our knowledge it was impossible to recognise or even define the nature of the primary sensitising substances. Some of them might well be produced by autolysis of skin or other tissue. He quoted a recent case of his own in support of the suggestion, in which the patient, who suffered from lupus vulgaris of the face, was treated by pyotropin—a local caustic containing salicylic acid and potassium phenolate. After the second or third application a ring of minute eczematous vesicles appeared round the treated and Mr E B WAGGETT making useful suggestions as to the causes of the failure of operations on the septum to give benefit or relief in certain cases

Dr. WILLIAM HILL followed with a paper on

PHARYNGEAL AND ŒSOPHAGEAL DIVERTICULA

He gave a historical account of the subject, and illustrated his address by a large number of pictures and X ray photographs He advised the pathological classification of diverticula as follows:—

Solitary Diverticula of Upper Food Tract

I —*Pharyngeal in Origin*

A *Congenital*
1 Anterior median branchial diverticular sinuses and pouches (Rare)
2 Lateral branchial diverticular sinuses and pouches (Rare)

B *Acquired*
3 Deep postero-median pulsion pouches (*Not rare*)

II —*Œsophageal in Origin*

B *Acquired*
4 Traction pouches of Rokitansky (Not rare)
5 Leugart's post-branchial ledge pouches
6 True pulsion pouches (Usually low down but above level of diaphragm—the epi-phrenic of Starck) (Rare)
7 Pulsion-traction pouches of Starck (Rare)

Boundary cases at the pharyngo-œsophageal junction, he stated, do not exist

Dr E I SPRIGGS (Ruthin) gave a detailed record of two cases under his care They had been long under observation, and had been treated without resort to surgical interference Dr Spriggs pointed out the analogy between pharyngeal and duodenal diverticula, of which he had met 43 in a series of 1000 examinations for disease of the duodenum

Mr L COLLEDGE, on behalf of Sir StClair Thomson, indicated the difficulty of classifying pharyngeal diverticula as the symptoms were œsophageal, therefore in a pathological classification they should be included under diseases of the pharynx, but in a clinical or symptomatic classification they came under diseases of the œsophagus

Dr W. H KELSON related the subsequent history of two patients successfully treated by operation one of these had died from bronchitis, and the other from malignant disease arising in the scar.

The PRESIDENT, speaking from an experience of 17 cases, had noticed that dysphagia is not an invariable symptom, as some patients only complain of hawking and " phlegm in the throat "

Mr DOUGLAS GUTHRIE (Edinburgh) read a paper based on 20 cases of

ACUTE RETROPHARYNGEAL ABSCESS IN CHILDHOOD

He said that acute retropharyngeal abscess in the majority of instances was due to suppuration in lymphatic glands, sometimes of tuberculous nature, but more frequently streptococcal. The tonsil was the original source of infection in many cases Injury during removal of adenoids was a possible cause, as also the direct spread of pus from the middle ear The majority of patients were under 1 year old, and the disease was commoner in boys than in girls The condition was very rare in adults Difficulty of breathing was the leading symptom This might suggest laryngeal diphtheria and might even lead to the fatal mistake of performing tracheotomy The larynx in the infant was relatively small, and was situated at a higher level than in later life, so that laryngeal obstruction was usually caused by the abscess, which tended to point just opposite the upper aperture of the pharynx Difficulty of swallowing was a rare symptom and the characteristic throaty cry, so often described, was seldom heard Diagnosis was merely conjecture until the throat was examined Even then it might be difficult to appreciate by inspection alone the altered contour of the posterior pharyngeal wall on one side Digital examination was the most certain test, but should not be practised without preparation to open the abscess immediately. The condition was often confused with adenoids, and laryngeal diphtheria or a foreign body in the œsophagus might be suspected Lymphosarcoma might simulate abscess, but was much rarer. Cervical scoliosis caused a unilateral projection of the posterior pharyngeal wall of bony hardness As soon as retropharyngeal abscess had been diagnosed it should be opened If left to itself it would cause death from suffocation, or, should the patient survive this contingency, from bronchopneumonia In the author's series of 20 cases two survived after spontaneous rupture of the sac External operation should be reserved for the chronic variety due to bone tuberculosis No anæsthetic should ever be given as it increased the risk enormously The child should lie on his side firmly fixed in a blanket A gag was then inserted, and the point of a long sinus forceps plunged into the most prominent part of the swelling and opened in a vertical direction At the moment of opening the child was turned on his face Pus flowed from the mouth and nose and relief was immediate Mr Guthrie believed that fatalities during the operation would be largely avoided if this method were adopted In the series of 20 cases described death occurred in three. Two of these died on the way to hospital, and the third just after the abscess had been opened.

SECTION OF DERMATOLOGY

FRIDAY, JULY 23RD.

Dr H G. ADAMSON (London) presided over the deliberations of this Section The first subject under discussion was

ECZEMA.

Dr A WHITFIELD (London), who gave the opening address, recalled Willan's definition of the eruption—" a sheet of minute vesicles, with no tendency to enlarge, not inflammatory in origin, or appearance, and not accompanied by fever—a *condition* rather than a disease, and one which might be called forth by a variety of causes " Dr Whitfield pointed out that the histological appearances invariably coincided with the clinical manifestations There is congestion of the capillary loops at the heads of the papillæ, subsequent exudation of lymph, distension of the intercellular channels (spongiosis), and a more or less rapid spread of fluid upwards through the rete mucosum until a deep-seated vesicle is apparent to the naked eye It followed that if the exudation be checked at any stage a papule and not a vesicle may be the final result Eczema therefore consists of vesicles or papules. other forms of dermatitis—e g , pyogenic, marginated, &c —which are not constituted by these fundamental elements have no right to the name Culturally, eczema vesicles were always sterile in their incipience but secondary infections from skin saprophytes were the rule In attempting to define the nature of the stimulus responsible for the exudation Jadassohn classified eczematous skins under two heads (1) those reacting to very small doses of a particular irritant, or a general susceptibility to a number of such. and (2) those which react to substances which in respect to normal skins could hardly be classed as irritants at all Hence, in eczema there is an irritability special or general, which we may term a susceptibility. It may appear soon after birth or may be acquired later

The Constitutional Factor

Dr Whitfield referred to the type of eczema of the arms, neck and face, which is not infrequently seen as a secondary manifestation due to the sudden irritation and " flare up " of a chronic patch of varicose dermatitis on the leg *This may be quite* indistinguishable from ordinary *eczema, and will* clear up without particular *attention if the leg* patch is treated and brought under *control* Another type of eczema, in Willan's *sense*, and one which may alternate with urticaria *from* food poisoning, is a follicular dermatitis of the *trunk* and extremities mainly In both these examples there was an under-doses. He had had some therapeutic success with a polyvalent staphylococcal vaccine but had now given it up for curative purposes. He was under the impression (40–50 cases tried) that this vaccine was useful in preventing recurrences. He quoted a nurse who had apparently been saved from relapses by its use for over two years although previously never free, after renewal of the eruption, for more than six to eight weeks. He had had success with a Danysz vaccine in one or two cases but he agreed that the results were most uncertain and could never be foreseen.

Dr. **BARBER** thought ultra-violet light in some cases did more harm than good. He advocated concerted action among British dermatologists to determine the cause of psoriasis, and alluded to the frequency of tonsillitis as a precedent to the eruption, especially in rheumatoid cases. In conjunction with Dr. D. Embleton he had found an organism of the streptococcus group in some cases of psoriasis associated with rheumatic symptoms in the joints. In one of these, a very severe case which had gone on to generalised exfoliative dermatitis with high pyrexia, it had been recovered from the blood and cultured. The autogenous vaccine injected immediately checked the fever, and may have been partly responsible for an ensuing cellulitis of the thigh, from which the same organism was cultivated. The patient eventually recovered. Dr. Barber admitted that the cases were at present too few for him to draw any conclusions as to the ætiological importance of a bacteriological cause of psoriasis.

Dr. E. F. **SKINNER** (Sheffield) said he had made an experimental clinical investigation of the comparative value of chrysarobin and X rays in the treatment of psoriasis. In two selected groups, in which dietetic and other factors remained the same, he was able to demonstrate the definite superiority of the chrysarobin method, both in the rapidity of involution of the individual lesions and in the prolongation of the immunity intervals. The average duration of treatment in hospital by this method was from 20–30 days. In the group selected for radiotherapy one-third of a unit dose was given to each patch. Dr. Skinner showed some slides illustrating both the clinical and microscopic results of treatment. His investigations had led him to believe that a diminished intradermal pressure with increased oxygen tension were invariable associations of the psoriatic lesion. He was not much impressed with the results of ultra-violet ray treatment in psoriasis.

Sir **NORMAN WALKER** emphasised the fact that there is no generally applicable treatment for psoriasis. Every case had to be treated individually, and long experience was the only safe guide. He entirely agreed with Dr. Skinner in his estimate of the value of chrysarobin. In connexion with tar applications it should be remembered that there were various tars—some derived from coal, some from pitch-pine—and that they were not all suitable in every case of psoriasis. While there was no remedy which could be relied upon as a specific, Sir Norman Walker protested against the practice of giving a bad prognosis. The policy of laissez faire was bad, and the patients must be encouraged to use the best possible means to rid themselves of every ensuing attack.

Dr. **WHITFIELD** said that he would exercise extreme caution in prescribing arsenic to acute or irritable cases, and in those non-scaly glazed types which were by no means uncommon. He said that when he prescribed arsenic he found it did most good when pushed to the limit of tolerance.

In his reply Dr. **MACKENNA** expressed himself as much interested in Dr. Dyson's remarks on the preventive effect of treatment by vaccines. He thought that his views, perhaps too optimistic on the results of phototherapy, might have been due to the fact that the majority of his cases were treated in the winter months, at a time when sunlight was deficient.

Reviews and Notices of Books.

CHRONIC RHEUMATIC DISEASES

Their Diagnosis and Treatment. By F. G. THOMSON, M.D., F.R.C.P. Lond., and R. G. GORDON, M.D., D.Sc., M.R.C.P. Edin. Oxford Medical Publications. London: Humphrey Milford, Oxford University Press. 1926. Pp. 202. 8s. 6d.

THE appearance of this book is well timed, following the report of the Ministry of Health on rheumatic diseases, in which it was shown that about one-sixth of the total amount of sickness occurring amongst the insured population is due to diseases in this group, and that every seven insured persons cost the insurance funds £1 per annum in respect of these diseases—a total of £2,000,000 per annum amongst our insured people alone. However, students still can and do graduate from our large hospitals with little knowledge of chronic rheumatism beyond the fact that it is a disease prevalent amongst out-patients, and is usually treated with salicylates internally and liniment as a placebo. The authors of this handy volume do not claim to describe any hitherto unpublished original research; none the less, its study will give information which will be new to many.

The book is divided into three parts. The first deals briefly with ætiology, and then describes the clinical types showing clearly how they differ or overlap. The following reason is given for dropping the name "rheumatoid arthritis" and substituting "focal arthritis": "The name 'rheumatoid arthritis' conveys no suggestion of the main ætiological factor, and may even mislead by suggesting a false relationship to rheumatic fever. On the other hand, the term 'focal arthritis' not only emphasises the underlying cause, but serves as an emphatic reminder to the medical attendant that it is his duty to find out where the infection lies, and to treat it thoroughly and effectively at the earliest possible moment." The nomenclature throughout is simple, and the reader cannot fail to grasp exactly what the authors mean. The clinical descriptions of fibrositis, neuritis, lumbago, the various forms of arthritis and gout are all good. The 24 pages which comprise Part II. deal with common mistakes in diagnosis. Read in conjunction with the clinical descriptions in Part I., they cover the ground thoroughly and supply a reminder that routine physical examination is necessary even of the patient who makes no more than a casual complaint of a touch of rheumatism. Neglect of this precaution may bring serious trouble to doctor and patient alike. Treatment is described in Part III. under the headings drug treatment, hydrology, climate, physiotherapy, orthopædic treatment, vaccines, and diet. It would appear that the authors have not seen the ill-effects from the use of drugs of the atophan group described by other clinicians, otherwise these dangers might have been more stressed. There is a short paragraph summarising the points to be considered by the doctor who is debating whether or not to send his patient to a watering-place. The information under the headings physiotherapy and orthopædic treatment will be quite as useful to the general practitioner as that concerning drug treatment. Not only is it emphasised that joints must be kept in the position of optimum efficiency during acute inflammation, but it is shown how this may be done.

A doctor who has had the depressing experience of seeing a patient become crippled and deformed in spite of his efforts will appreciate the value of the teachings though even with the knowledge they impart treatment is difficult enough. No enthusiasm is shown for vaccine therapy; protein shock is regarded as still sub judice, but without much promise. The fact that this book is written by two spa physicians has some significance. Although our large mineral water areas and gradually spread until a typical eczema of the face and neck had developed

Sir **Norman Walker** (Edinburgh) noted that only one mention of gout as a causative factor (that by Dr. Barber) had been made on this occasion, and said that in 1892 at a B M A meeting the diathesis had completely dominated the discussion He thought that everybody must now be convinced of the importance of focal sepsis in causation Again and again the removal of such a focus had resulted in cure or alleviation of the skin condition He entirely agreed with Dr. Whitfield's picture of the chronic patch of varicose dermatitis lighted into activity by the application of a strong and unsuitable dressing, and directly responsible for an eczematous outbreak in other parts of the body With regard to seborrhœic eczema he desired to apologise for the word *Bottle* bacillus, for which as translator of Unna's original paper he must take the responsibility *Flask* bacillus was the correct translation Sir Norman Walker was convinced of the considerable importance of internal factors in the causation of eczema, and stated that cutaneous protein tests had been of some use in elucidating them in one or two of his own cases. He was very much in favour of a biochemical training for the future dermatologist, and believed that this offered the best prospect of advance in the science In conclusion, he uttered a serious warning against the indiscriminate use of X rays in treatment

The **President** congratulated Dr Whitfield on the able way in which he had summarised the present state of our knowledge of the causation of eczema, and expressed agreement with the essential definitions and conclusions suggested in his paper For his own part he had never been able to convince himself that internal causes had anything to do with the problem of eczema, and in support of that view he instanced the effect—almost invariably successful in his hands—of local treatment in the control of infantile eczema—the purest of all types of the condition, and one in which an almost complete protection against both physiological and abnormal stimuli could be ensured.

In his reply Dr **Whitfield** stated that in his view eczema could be either a congenital susceptibility or acquired by the effect of repeated trauma He felt convinced that an external stimulus was of prime importance in the production of the eruption, and instanced in support of that contention the effect of light on the exposed parts—face, neck, and hands—of such patients He agreed that gouty eczema was a very rare condition, and stated that in the whole course of his experience he had seen not more than 100 cases. He cordially agreed with Sir Norman Walker's warning on the subject of radiotherapy It had become his practice to record the areas irradiated, and the doses on charts which he gave to all private patients, so that in the event of further treatment by others the charts were available for reference, and due precautions could be exercised.

The Treatment of Psoriasis

A discussion on this subject was opened by Dr **Robert W MacKenna** (Liverpool) He said that since there was still complete ignorance of the cause of this common disease the treatment must be appropriate to the stage and character of the lesion in any individual case. In the acute stages, with new lesions rapidly appearing and developing, the patient should be put to bed, on a light diet, regular purgation, &c. Antimonial wine (7–10 minims t d s) a valuable remedy for acute skin conditions, and too often forgotten, might prove very beneficial, and could do no harm. The speaker had had no success with emetine injections, while arsenobenzol derivatives, administered intravenously, and injections of whole blood (auto-hæmatotherapy) had also proved disappointing in his hands Mixed coli vaccine in no instance produced involution by its own unaided effect, but in cases which had indicanuria it seemed to have an adjuvant effect in accelerating recovery A striking example of the outcome of "protein shock" therapy was provided by a nurse under Dr. MacKenna's care in 1922 She had had intermittent psoriasis for 12 years, and this attack was so severe and generalised that she was put to bed and treated as for a severe exanthem A week later an abscess developed in the axilla, and as this grew and "ripened" the skin lesions faded, pari passu Dr. MacKenna said that this concomitant septic infection was recognised as a useful ally, he was in no hurry to open the abscess prematurely The patient did not have another outbreak of psoriasis for 15 months Imitating this natural form of "fixation abscess" Dr MacKenna had tried the effect of intramuscular injections of terpichin, an oily compound of purified turpentine and quinine, in doses of 1 c cm once or twice weekly It appeared to quieten the period of acute development and accelerate involution, but in no case did it do this unaided by local treatment Sulphur colloidal solutions by the mouth were useful, also intramine given intramuscularly, 0 75–1 5 c cm weekly, but as with the other injections local treatment had always to be invoked

Of local treatments X rays appeared to be the most valuable and rapid, but they had the obvious drawback that only a limited number of areas could be irradiated , also that tolerance to X rays might be easily exceeded, and a burn might result if more than one or two doses were given It ought not to be applied in acute cases, but only to the chronic patch The drawbacks applying to X rays were absent in connexion with ultra-violet radiations which could be given safely and frequently to the whole body A successful case was cited in which a series of exposures to an air-cooled mercury-vapour lamp had banished an inveterate eruption in a woman with a 27 years' history

As regards *diet* nothing definite could be laid down It had been found that 20 per cent of psoriasis cases gave evidence of putrefaction in the bowel and 26 per cent of carbohydrate fermentation Free purgation, assisted if necessary by high irrigation, seemed to be indicated in such cases, and excess both of carbohydrate and protein in the diet should be avoided Salicin was admittedly a valuable drug in acute and spreading cases (10–15 gr t d.s), and iodide of potassium had sometimes proved efficacious Glandular extracts were very disappointing In local applications it was important to begin with weak concentrations of any drug chosen, and gradually increase when the tolerance had been ascertained By far the most effective was chrysarobin, while equal parts of tar, glycerole of lead, salicylic and mercury ointments was an extremely serviceable and harmless application when properly used The combination had a rational basis, for tar and mercury were reducing agents, salicylic acid keratolytic, and the glycerole of lead hygroscopic and soothing The tenacity and adhesive properties of the mixture rendered it valuable for firm inunction and massage, which in itself appeared to do good in the œdematous type of case The actual percentage of the various drugs incorporated depended on the stage of the eruption If acute and spreading rapidly it would be wise to employ weak concentrations, particularly of the tar ointment The only one of the remedies cited that could be relied upon to cause the eruption to disappear "with precision and promptitude" was chrysarobin, and recurrences after its use were just as frequent as with other remedies The problem would not be solved until the physiologists and biochemists were able to reveal some of the more intricate processes of cell metabolism

Dr **Dyson** emphasised the importance of rest in bed in acute or intractable cases In his experience salicin was valuable in the acute stage, arsenic in the chronic Excessive tar inunction often led to follicular infection, and he was in agreement with Dr MacKenna in his warning against using chrysarobin in acute cases Pyrogallic acid was useful for chronic patches Dr Dyson had only seen benefit from thyroid when the patient was made ill by excessive views of one who has been associated with work on insulin from its beginning The volume is certainly not a complete summary of the literature on this subject as many important researches by European workers are omitted, yet as Prof Macleod states, "if undue weight may appear to be given to the work which has gone on under my own supervision, it is hoped that this will be pardoned on the ground that otherwise it would have been impossible for me to prepare the monograph "

DISORDERS OF NUTRITION AND GROWTH IN CHILDREN

Clinique Médicale des Enfants Troubles de la Nutrition et de la Croissance By P NOBÉCOURT, Professeur de Clinique Médicale des Enfants à la Faculté de Médecine de Paris Paris. Masson et Cie 1926 Pp 404 Fr 36

THE third volume of Prof. Nobécourt's notable system of children's diseases is on the same lines as its predecessors, detailed clinical accounts of individual patients being followed by a discussion of the conditions which they exemplify This volume is perhaps the most attractive of the series

The first part of the book is devoted mainly to the different types of hypotrophy in children, the cases described are illustrated by excellent photographs and by radiograms of the hand and carpus, the development of ossification centres being taken as one of the most useful points of distinction between the different types of retarded growth The varying degrees of hypothyroidism, and the effect of syphilis in diminishing growth, are fully discussed in their relation to hypotrophy The question of statural hypertrophy is approached in the same way, with special reference to the rôle of the endocrine organs The author recognises three main types the Hutinel type with delayed puberty and a subsequent stature not greatly in excess of the normal, acromegaly, and hypertrophy of stature with precocious puberty The cases of obesity which Prof Nobécourt describes are of remarkable interest, as is his discussion of the problem of their pathogenesis He is convinced that many cases of obesity in children are wrongly attributed to diminution of pituitary secretion, and are of cerebral origin; when found in association with a pituitary tumour they are the result of neural lesions caused by pressure on the tuber cinereum or surrounding parts of the brain This view is supported by evidence which he brings forward of obesity occurring as a sequela of encephalitis, also resulting from lesions of this locality A few chapters are devoted to the clinical features and treatment of diabetes; some of these were written before and some after the introduction of insulin treatment Non-diabetic acetonæmias are also discussed, and attention is drawn to the meningeal reaction which may accompany them, and the alterations which they produce in the cerebro-spinal fluid

This volume further establishes Prof Nobécourt's "Clinique Médicale" as one of the most important works on pædiatrics, and will give both pleasure and instruction to all who are interested in problems of growth and of endocrine function

NEMATODE WORMS

A Synopsis of the Families and Genera of Nematoda By H A. BAYLIS and R DAUBNEY London Trustees of the British Museum. 1926. Pp xxxvi. + 277. 10s 6d

ZOOLOGY is essentially a science of classification, and this is no less true for the more economic branches than for the purely scientific Without classification we are unable to apply effectively our knowledge of biology and preventive measures, and although to the true biologist the name of an animal is merely a label, without a systematic knowledge of these names chaos would result This is particularly true of the round worms, over 600 genera of which are described and classified in the present work It is unfortunate that the authors have stopped at genera, as the absence of species considerably reduces the value of the book to the general zoologist and the medical man A genus is often an artificial collection of species based on some arbitrarily chosen morphological detail; and while the authors on the whole have avoided the obvious pitfall they have often been compelled to write a diagnosis of a genus containing a single species —a task of great delicacy and sometimes questionable value as such a species is often proposed on account of its differences from other genera rather than on its own intrinsic characters

The classification of the "worms" has received a great amount of attention in recent years, but in most cases only the parasitic forms have been considered Baylis and Daubney believe, however, that a more accurate system should include all nematodes, free-living or parasitic, without regard to their habitat The adoption of this plan has in their hands led to some curious anomalies although there can be no doubt that it gives a sense of perspective to the study of the purely parasitic forms and a sense of perspective is a valuable adjunct in all the branches of economic biology

As the last word has yet to be written on systematic helminthology, few students of the nematodes will agree with everything in this volume, but many will agree with most, and all will welcome the addition of such a concise synopsis to their library shelves

PUBLIC HEALTH ENGINEERING

The Principles of Public Health Engineering By EARLE B PHELPS, B S Professor of Sanitary Science, College of Physicians and Surgeons, Columbia University New York: The Macmillan Company 1925 Pp 265 12s 6d

THIS book in spite of a title not particularly attractive to medical men, will be found to make interesting reading It is intended for the health officer with little knowledge of engineering and for the sanitary engineer whose understanding of the public health objective of his efforts is usually vague The author, a chemical biologist who has become a sanitarian is well equipped for his task. The scope of the work is limited to a few problems—viz ventilation and atmospheric pollution, water-supplies, sewerage, pasteurisation, lighting, refuse disposal, and insect control In each of these subjects the fundamental principles involved and their application to the needs of society, are discussed in relation to modern scientific investigation and engineering practice The treatment is perhaps more satisfactory on the scientific than on the practical side, but even practical issues are dealt with more thoroughly than is customary in the ordinary text-book on public health Interest is enhanced by the exposition of the results of investigations by the author and other workers on sanitation in America, which compensate for the somewhat astonishing meagreness of the references to English and other European observers in a branch of medicine which we have been accustomed to regard as peculiarly our own

This book should be read by every medical officer of health and teacher of hygiene, and it may also be recommended to civil engineers whose work brings them into contact with problems of sanitation

JOURNALS

QUARTERLY JOURNAL OF MEDICINE —The July number contains the following articles: The Effect on Renal Efficiency of Lowering the Blood Pressure in Cases of High Blood Pressure, by Charles Reid. Certain renal efficiency tests, such as the estimation of blood-urea and non-protein nitrogen and the urea-concentration test, were made upon patients suffering hospitals do not confine themselves to the treatment of rheumatic diseases, patients suffering from these diseases form the majority of their cases, and, as the urgent routine work of pathological and biochemical departments is less than that of general hospitals, it is to spa institutions that we may look for further advances in our knowledge of these economically disastrous diseases This book contains all essential information concerning its subject and has no padding It is light to hold, and is well produced

MEDICAL DIAGNOSIS

Sixth edition By CHARLES LYMAN GREENE, M D, formerly Professor of Medicine and Chief of Medical Clinic, University of Minnesota, Chief of Staff, St Luke's Hospital London William Heinemann. 1926 Pp 1468 £3 3*s*

THIS costly and richly illustrated volume should prove attractive to the studious medical man who wishes to possess a work on general medicine which escapes from the usual format of text-books Dr Lyman Greene is well qualified to produce such a work, both by a wide experience and a clear style of writing After sections dealing with fundamental principles and case-taking he discusses in detail the methods of investigating and the clinical features of diseases of each system of the body. If there is a major criticism to be made, it is that the space devoted to the cardiovascular system is disproportionate to that given to other parts of the body This portion of the book is filled with accurate observations and readable descriptions, and the author has expressed his personal views with a fearlessness which must commend itself to critics But the general reader may yet be disappointed at the relatively small amount of space devoted to other important sections, notably to diseases of the lungs and to abdominal diseases As is always the case with books of this magnitude, the laboratory methods, sometimes described in great detail, may be out of date by the time they reach the reader; thus page 999 contains full description of the original Rosenthal test for hepatic efficiency, the method is here placed alone under the heading Determination of Liver Function, whilst a footnote only refers to the method which has since completely supplanted the one described Still more surprising to English readers will be the omission of reference to the van den Bergh test or to cholecystography, whilst many less important methods of examination are prominently recorded. But such omissions are inevitable in a production of this size by one observer, and we are well content to ignore them in a work which carries such a strong individual message.

ORTHOPÆDIC SURGERY.

By W A COCHRANE, M B, Ch B, F R C S Edin, Assistant Surgeon, Edinburgh Royal Infirmary, late Clinical Assistant, Orthopædic Department, Massachusetts General Hospital, Boston, U S A 1926 Edinburgh E and S Livingstone Pp 528 21s

THIS book, written by an Edinburgh surgeon, is largely inspired from American sources, and gives prominence to views and lines of treatment to which little attention has been paid in this country hitherto

Following the lead of Joel E Goldthwait, a school has arisen in the United States which attributes much more importance to the effects of posture than has been admitted elsewhere. Whether or no bad carriage of the body is more a cause than a result of abnormality, it is time that the profession in Great Britain should have the arguments in favour of Dr Goldthwait's conclusions adequately put before them These Mr Cochrane has well presented in Part I, which includes also chapters on physical education and reconstruction The rest of the book deals, by means of a regional and not an ætiological classification, with disabilities and affections which Mr Cochrane includes under the six heads into which he has divided the surgery of the locomotory apparatus, a title hardly comprehensive enough to cover all the domain Beginning with the feet and ankles, the author takes his readers to the knee, hip, spine and thorax, shoulder, elbow, and hand and wrist, to reach in the final chapter torticollis, acute anterior poliomyelitis, and spastic paralysis. Fractures in the neighbourhood of joints, such, for instance, as those of Colles and Pott, receive attention, but for information about fractures in general the reader must turn elsewhere and then could not do better than consult the joint work on Fractures and Dislocations of Wilson and Cochrane, published in 1925 Trauma and disease of the sacro iliac joints are conditions to which much more attention is paid in certain schools of surgical thought in America than in Europe Such injuries must be much commoner in New England than here, or else their occurrence is here overlooked Mr Cochrane gives a good description of the symptoms and morbid appearances on which American surgeons rely, and his account of this subject should arouse attention to these conditions in Great Britain

This book is well printed and illustrated, and it offers in a handy form a useful guide for practitioners in the treatment of orthopædic cases

CARBOHYDRATE METABOLISM AND INSULIN

Monographs on Physiology By JOHN JAMES RICKARD MACLEOD, F R S, M B, LL D Aberd, D Sc (Hon), Professor of Physiology, University of Toronto, Canada London Longmans, Green and Co 1926 Pp 357 18*s*

THE monograph under consideration deals mainly with the physiological aspect of insulin Prof Macleod sets out to prove that insulin is derived from the islets of Langerhans, and commences the monograph with a detailed account of the histology of the islets, and a very interesting summary of the comparative anatomy of these structures This part of the text is illustrated with photomicrographs, some of which are very clear, but others are of rather doubtful value For instance, it is difficult to imagine what Fig 4 is meant to illustrate Prof Macleod points out that by far the greatest yield of insulin is obtained from the islets, and, although he refers to the observations of other investigators who have shown that insulin can also be obtained from the acinar tissues, he does not consider that this weakens his argument There is no reference to the observations which describe the presence of insulin in the tissues of depancreatised dogs, nor to the discovery of insulin in large quantities in tissues other than the pancreas These observations are very difficult to explain if the classical theory as to the action of insulin be adopted It must, of course, be borne in mind that "no other organ or tissue can replace the pancreas as the source of this hormone in the animal body"

There is a very brief description of the main methods for the preparation of insulin, together with a short account of its chemical properties Then follows a detailed account of the metabolism of the depancreatised dog treated by dietetic means and with insulin This ground is very familiar, and many reports on the subject have been published, but it is interesting to read the views of one of the original investigators on the question, and these are summed up in one of the later chapters The mechanism of the action of insulin is discussed at some length, but this subject is, of course, an unsatisfactory one, and up to the present no definite statement as to the action of insulin can be made The final chapter deals with methods of assay, and consists mainly of a summary of the recent publications of the Standardisation Committee of the Health Section of the League of Nations

This monograph is of great value in that it gives the general reader an opportunity of hearing the

For Invalids and Convalescents

HORLICK'S MALTED MILK presents the Proteids and Carbo-hydrates of Cereals and Milk in the proper ratio which affords a maximum of nutrition with a minimum tax on digestive effort It materially assists the building-up processes by making good the wastage entailed by illness, accelerates the recuperation of the digestive and assimilative powers, thereby preparing the way to a resumption of a solid diet. Complete in itself and ready in a moment by briskly stirring the powder in hot or cold water only

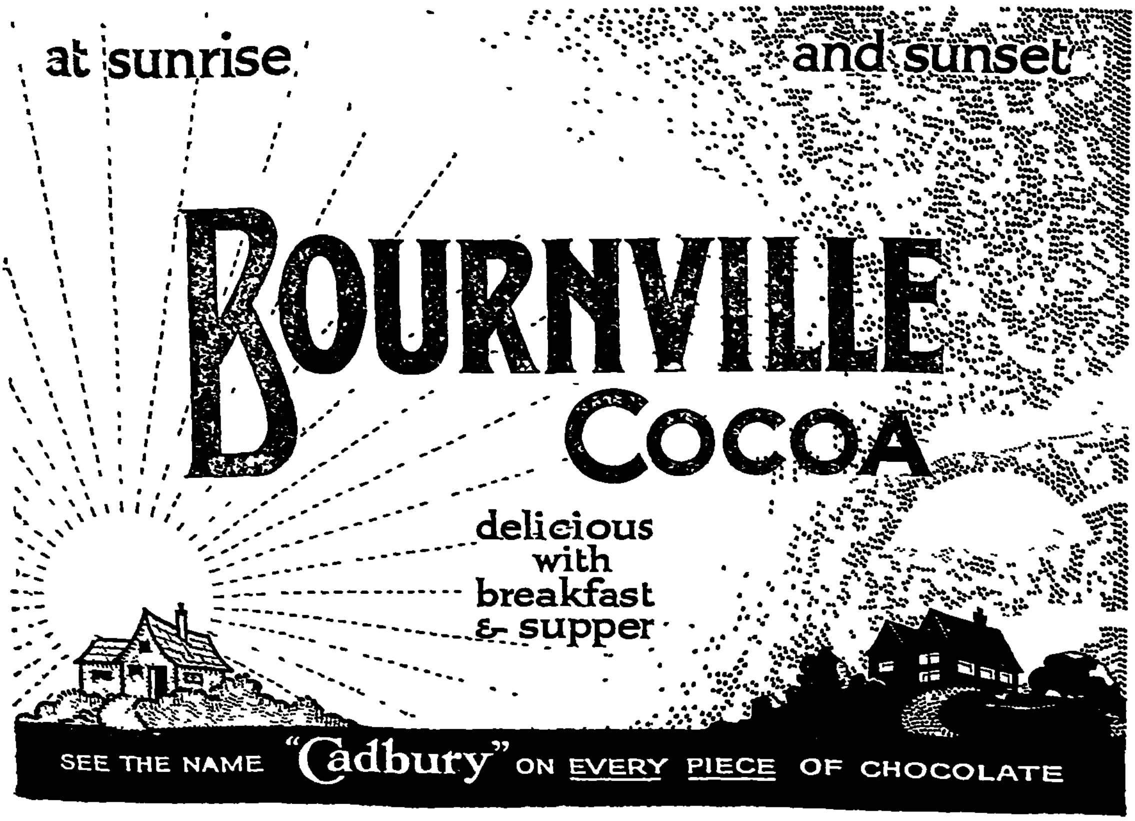
To secure the original, always specify HORLICK'S.

HORLICK'S
THE ORIGINAL
MALTED MILK

Made in England by

HORLICK'S MALTED MILK CO., LTD., SLOUGH, BUCKS

Liberal samples free to Members of the Profession



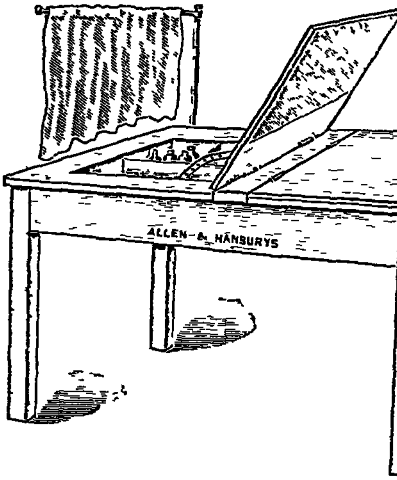
from increased blood pressure both with and without renal disease, before and after the application of measures designed to cause a temporary lowering of the blood pressure The investigations were undertaken in order to determine whether the efficiency of the kidneys is affected by lowering hypertension in such cases The results obtained showed that the blood-nitrogen figures are not raised as the result of the administration of vasodilator drugs for periods varying from 24 hours to over a week There is, however, in such circumstances usually an increased urea concentration in the urine after the exhibition of urea by the mouth A large fall in blood pressure following venesection in high pressure cases does not interfere with the excretion of urea —A Critical Analysis of Certain Laboratory Methods Applied to the Cerebro-spinal Fluid in the Serological Diagnosis of Neuro-syphilis, by H. Ferguson Watson An introductory account is given of the various laboratory tests applicable to the cerebro-spinal fluid in cases of neuro-syphilis, and of the results obtained by various workers The author investigated a large series of cases, both syphilitic and non-syphilitic In addition to a clinical examination the following tests were applied · the Wassermann reaction of the blood-serum and cerebro-spinal fluid, the colloidal gold test, the globulin tests, the cell count and the foam test Out of 100 cases clinically syphilitic the Wassermann reaction was positive in the serum in 96, and in the fluid in 97 The gold test was positive in 89 of these, and the globulin test in 95 In the non-syphilitic cases the Wassermann test was negative in serum and fluid in every instance, but the Lange test was positive in 45 out of 103 cases, which included such diseases as influenza, acute rheumatism, mumps, and chronic nephritis The author therefore concludes that the Lange test is quite unreliable in the diagnosis of neuro-syphilis —Observations on the Gastric Acidity and Secretion in Health, by T. A Butcher A series of personal experiments were made to determine the effect of pyschic stimulation on gastric secretion, the secretory response of the stomach to various articles of food, and the estimation of pepsin secretion It was found that difficulty in swallowing the tube causes a marked degree of hypo-acidity and gastric inertia Pyschic stimuli, on the other hand, such as chewing biscuits or sausages without swallowing, or the smell of bacon and tomatoes being fried, causes a marked increase in the acidity, total chlorides, and ferment curve Many interesting results were obtained on the effect of articles of food upon the gastric secretion, for details of which the article should be consulted Thus olive oil was not found to cause a lowering of acidity, nor was there an increased regurgitation of bile On the other hand, tea without milk was followed by results suggesting an inhibition of gastric secretion

INDIAN JOURNAL OF MEDICAL RESEARCH July, 1926 —Major A H Russell continues his exhaustive study of the epidemiology of cholera with illustrative tables D A Turkhud and C G Pandit *describe* an epidemic of an alastrim-like disease in Madras with some experimental investigations upon the virus Lieutenant-Colonel J Cunningham and T N S Raghavachari set out recent methods of differentiating lactose-fermenting organisms as applied to Indian conditions A valuable contribution to the study of heat stroke is supplied by Colonel F H G Hutchinson in Allahabad Brigade area In the progress report on researches in sprue (1924–25) N Hamilton Fairley, Lieut -Colonel F P Mackie, and their associates have done much to clear the ground for further original work on this intricate subject Major R B Lloyd and R G C Mitra contribute a timely paper on the Wassermann reaction in malaria Lieut -Colonel S R Christophers and Major J A Sinton provide a malaria map of India Asa C Chandler surveys the prevalence and epidemiology of hookworm and other infections in India and records the probable discovery of a new schistosome

New Inventions.

A DRESSING TABLE

THE dressing table here illustrated is useful as a part of the equipment of a consulting or small casualty room It consists in effect of a shallow rectangular box mounted in the form of a table The table top is formed out of two broad pieces of wood, or better of metal, hinged on a central narrow strip The interior of the box is divided up into compartments In the left side are placed instruments, ligatures, local anæsthetics, a kidney dish, pure carbolic acid, lysol, ether soap and spirit, &c In the right side are placed bandages, dressings, adhesive plaster, tr benzoin, iodine, &c The top of the left leaf of the table is provided with a mackintosh sheet, and a curtain which is capable of being swung across the table For example, a patient comes in with a cut hand He is seated at the left end of the table, instruments are chosen and sterilised, and the leaf replaced The patient places his hand on the table, and the curtain is swung across his view in order that he shall not see what is happening When the operation is concluded the right leaf is raised, tr benzoin co or tr iodine is dropped on the hand with a pipette (discarding the dirty method of using a brush for this purpose), and a dressing and bandage are applied The special advantages claimed for the table are (1) its convenience, all instruments, dressings, &c , being directly visible , (2) the contents are kept free of dust , (3) increased comfort of the patient, as he does not see his injury . and (4) small cost



Messrs. Allen and Hanburys, Ltd , are the manufacturers

A P BERTWISTLE, M B , Ch B Leeds,
F R C S Edin

Reports and Analytical Records.

ANANA BRIGHTENING SHAMPOO JELLY

(SEATON BURRIDGE, 4, WINDSOR PLACE, CARDIFF)

THIS preparation is used as a shampoo It is claimed to promote the growth of the hair, to give faded hair a gloss, and to remove any greasy appearance The jelly is green in colour and has an odour of verbena When analysed the following results were obtained —

Moisture	36 4	per cent
Mineral matter ·	10 3	,, ,,
Fatty acids	41 5	,, ,,

The soap is alkaline, due to the presence of potassium carbonate No free caustic alkali was detected Borax also was found The colouring matter is chlorophyll The jelly forms a good lather

THE LANCET.

LONDON. SATURDAY, SEPTEMBER 11, 1926.

SURVEY OF THE PUBLIC HEALTH

Sir George Newman's report to the Minister of Health[1] follows hard on that of his fellow Secretary, Sir Arthur Robinson,[2] and while the statesman may be regarded as keeping his finger on the pulse of the community in its reaction to the Public Health and Insurance Acts, the chief medical officer possesses an instrument more in the nature of an electrocardiograph on which are recorded the delicate responses of the body corporate to physical influences, and in which the difficulty lies not so much in record as in interpretation With that in mind the chief medical officer has been at pains to bring into being a section of the Ministry to deal with statistical intelligence a phrase which although of horrid aspect, lies deep in the foundation of effective public health administration It has been Sir George Newman s object to provide a section which, neither overburdened with pure routine however essential nor devoted to research work however interesting, should follow a middle path, educating itself and others in the use of medical statistics, and particularly in the use of official data of our own and other countries All through his report the chief medical officer shows a reluctance to associate effect and cause where a variety of interpretations are possible and a restraint in ascribing praise or blame to particular agencies or objects Nevertheless, there are passages in which he lets himself go in the one direction or in the other, as, for instance, in regard to the unrestricted spread of small-pox in several sanitary districts owing to neglect of well-known precautions An ill-administered district, he writes curtly, is a constant source of menace to its neighbours and to the country as a whole It acts as a reservoir from which an infection is liable to be carried to hitherto uninvaded areas And on the other hand, while admitting that data are as yet insufficient fully to assess the value of infant welfare centres, he gaily fills a page of the report with letters from tram conductors, printers clerks foster-mothers, and others who have appreciated these centres and have written to say so

At the end of the report Sir George Newman sets out the principal evidence concerning the physical life and health of the people of England and Wales during the year 1925, showing, in brief, a birth-rate of 18 3 per 1000—the lowest on record except for the war years of 1917–18 , a death-rate of 12 2 per 1000—the same as for 1924, with an incidence of 39 per cent of deaths on persons under the age of 50 years , an infant mortality rate of 75—the same as last year Notifications of infectious disease number round about 400,000, an immaterial change on last year The chief causes of death stand on the same numerical relation to each other as before, circulatory disease claiming 177 of each 1000 deaths, respiratory diseases 165, cancer 110, nervous diseases 99, and tuberculosis 85, and Sir George Newman's outlook does not allow him to state in so many words that these five diseases are the chief physical enemies of the country at the present time Disease, he states—and it is well worth while to reiterate it whenever possible in some new and striking form—is the reaction of the human body to irregularities of its whole environment, including various forms of infection The chief enemies are not the end-results but the earlier conditions which produce them and only the study of these will show directions in which effort is likely to succeed On tuberculosis the present line of attack is to reduce the chances of infection and strengthen the bodily resistance , cancer is to be held at bay by early detection which allows of removal or reduction of the new growth . any attempt to limit heart disease without differentiation of its causes is futile The mortality from respiratory disease leads to one of the chief medical officer s more dogmatic utterances Evidently, he writes, pneumonia is to a large extent a preventable disease, and the North of England has still much to learn with regard to its prevention

The medical staff which collates the materials on which Sir George Newman s survey is based consists of six sections each with its senior officer in charge Sir George Buchanan presides over the Section of General Health and Epidemiology, Dame Janet Campbell over that of Maternity and Child Welfare Dr F J H Coutts over that of Tuberculosis and Venereal Disease, Dr A. W J MacFadden over the Supervision of Food Supplies, Dr J Smith Whitaker over the General Practitioner Services. and Dr H A Macewen over Sanitary Administration in Relation to Infectious Disease Of the 15 full-time medical officers in Section I three direct the Pathological Laboratory Section II has four medical officers, all women, as well as women inspectors Section III has 7 full-time officers and commands the part-time services of Colonel L W Harrison Section IV includes 3 medical officers, a chemist, and 2 milk inspectors Section V has 4 full-time medical officers and a large regional staff distributed over the country Section VI in addition to its 9 medical officers has 2 officers attached to the Government Lymph Establishment The Welsh Board of Health constitutes a seventh section with Dr D Llewelyn Williams as senior medical officer. The field work of several sections is, of course, done by the medical officers of health with whose problems the report sympathetically deals, especially in relation to the division of responsibility in non-county areas between the supervision of environment and the oversight of personal hygiene , in Sections II and III by the clinical officers attached to the public health services , and in Section V by the practitioners whose names appear on the medical lists of insurance committees. These in their turn draw upon the ever-widening group of ancillary colleagues—dentists, midwives nurses, health visitors. sanitarians, engineers and the rest Coöperation on the part of this great community has produced the report presented by the chief medical officer of the Ministry, and that report is a practical testimony to the way the machine works and to the practical results

REACTION TO BLOOD TRANSFUSION.

For several years experiment and observation have been directed towards the elucidation of the cause of the so-called minor reactions which often follow transfusion of blood A variety of causes have been held responsible such as sodium citrate, the use of rubber tubes a fall in the temperature of the blood injected, and so forth. None of these has quite

---

[1] On the State of the Public Health Annual Report of the Chief Medical Officer of the Ministry of Health for the Year 1925 H M Stationery Office 1926 5s.

[2] Seventh Annual Report of the Ministry of Health, 1925–26 Cmd 2724 H M Stationery Office 3s 6d

Hemorrhoids

internal
&
external

RECTITIS
ANAL PRURITUS
FISTULA

▼

Liver
Suprarenal
Thyroid
Hypophysis
Prostate

Cypress
Horse-Chestnut
Hamamelis
Stovain
Antiseptics

Compound

Pluriglandular Medication

Adrepatine

OINTMENT — SUPPOSITORIES

Literature and Samples on request.

Telephone: MUSEUM 4029.
Telegrams "AMPSALVAS, LONDON"

THE ANGLO-FRENCH DRUG CO., LTD.,
238a, Gray's Inn Road, London, W.C. 1.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 11, 1926

SURVEY OF THE PUBLIC HEALTH

Sir George Newman's report to the Minister of Health[1] follows hard on that of his fellow Secretary, Sir Arthur Robinson,[2] and while the statesman may be regarded as keeping his finger on the pulse of the community in its reaction to the Public Health and Insurance Acts, the chief medical officer possesses an instrument more in the nature of an electrocardiograph on which are recorded the delicate responses of the body corporate to physical influences, and in which the difficulty lies not so much in record as in interpretation. With that in mind the chief medical officer has been at pains to bring into being a section of the Ministry to deal with statistical intelligence, a phrase which, although of horrid aspect, lies deep in the foundation of effective public health administration. It has been Sir George Newman's object to provide a section which, neither overburdened with pure routine however essential, nor devoted to research work however interesting, should follow a middle path, educating itself and others in the use of medical statistics, and particularly in the use of official data of our own and other countries. All through his report the chief medical officer shows a reluctance to associate effect and cause where a variety of interpretations are possible and a restraint in ascribing praise or blame to particular agencies or objects. Nevertheless, there are passages in which he lets himself go in the one direction or in the other, as, for instance, in regard to the unrestricted spread of small-pox in several sanitary districts owing to neglect of well-known precautions. An ill-administered district, he writes curtly, is a constant source of menace to its neighbours and to the country as a whole. It acts as a reservoir from which an infection is liable to be carried to hitherto uninvaded areas. And on the other hand, while admitting that data are as yet insufficient fully to assess the value of infant welfare centres, he gaily fills a page of the report with letters from tram conductors, printers' clerks, foster-mothers, and others who have appreciated these centres and have written to say so.

At the end of the report Sir George Newman sets out the principal evidence concerning the physical life and health of the people of England and Wales during the year 1925, showing, in brief, a birth rate of 18.3 per 1000—the lowest on record except for the war years of 1917–18; a death-rate of 12.2 per 1000—the same as for 1924, with an incidence of 39 per cent. of deaths on persons under the age of 50 years; an infant mortality rate of 75—the same as last year. Notifications of infectious disease number round about 400,000, an immaterial change on last year. The chief causes of death stand on the same numerical relation to each other as before, circulatory disease claiming 177 of each 1000 deaths, respiratory diseases 165, cancer 110, nervous diseases 99, and tuberculosis 83, and Sir George Newman's outlook does not allow him to state in so many words that these five diseases are the chief physical enemies of the country at the present time. Disease, he states—and it is well worth while to reiterate it whenever possible in some new and striking form—is the reaction of the human body to irregularities of its whole environment, including various forms of infection. The chief enemies are not the end-results but the earlier conditions which produce them, and only the study of these will show directions in which effort is likely to succeed. On tuberculosis the present line of attack is to reduce the chances of infection and strengthen the bodily resistance; cancer is to be held at bay by early detection which allows of removal or reduction of the new growth; any attempt to limit heart disease without differentiation of its causes is futile. The mortality from respiratory disease leads to one of the chief medical officer's more dogmatic utterances. Evidently, he writes, pneumonia is to a large extent a preventable disease, and the North of England has still much to learn with regard to its prevention.

The medical staff which collates the materials on which Sir George Newman's survey is based consists of six sections, each with its senior officer in charge. Sir George Buchanan presides over the Section of General Health and Epidemiology, Dame Janet Campbell over that of Maternity and Child Welfare, Dr. F. J. H. Coutts over that of Tuberculosis and Venereal Disease, Dr. A. W. J. MacFadden over the Supervision of Food Supplies, Dr. J. Smith Whitaker over the General Practitioner Services, and Dr. H. A. Macewen over Sanitary Administration in Relation to Infectious Disease. Of the 15 full-time medical officers in Section I three direct the Pathological Laboratory. Section II has four medical officers, all women, as well as women inspectors. Section III has 7 full-time officers and commands the part-time services of Colonel L. W. Harrison. Section IV includes 3 medical officers, a chemist, and 2 milk inspectors. Section V has 4 full-time medical officers and a large regional staff distributed over the country. Section VI in addition to its 9 medical officers has 2 officers attached to the Government Lymph Establishment. The Welsh Board of Health constitutes a seventh section with Dr. D. Llewellyn Williams as senior medical officer. The field work of several sections is, of course, done by the medical officers of health with whose problems the report sympathetically deals, especially in relation to the division of responsibility in non-county areas between the supervision of environment and the oversight of personal hygiene; in Sections II and III by the clinical officers attached to the public health services; and in Section V by the practitioners whose names appear on the medical lists of insurance committees. These in their turn draw upon the ever-widening group of ancillary colleagues—dentists, midwives, nurses, health visitors, sanitarians, engineers and the rest. Coöperation on the part of this great community has produced the report presented by the chief medical officer of the Ministry, and that report is a practical testimony to the way the machine works and to the practical results.

◆

REACTION TO BLOOD TRANSFUSION.

For several years experiment and observation have been directed towards the elucidation of the cause of the so-called minor reactions which often follow transfusion of blood. A variety of causes have been held responsible, such as sodium citrate, the use of rubber tubes, a fall in the temperature of the blood injected, and so forth. None of these has quite carried conviction with those who practise transfusion, and it is of interest to note that some new observations published this year seem to come nearer the mark than any that have gone before The first of these is an article[1] by Dr **Charles A Doan** on the Recognition of a Biologic Differentiation in the White Blood Cells This author observes very justly that there are too many factors entering into every transfusion for it to be possible to give to any one of them the full responsibility for the reactions He claims, however, to have demonstrated that, in addition to the well-known incompatibilities between the serum and red cells of different individuals, there is a similar and definite incompatibility between the serums and the white cells A biologic classification according to groups has not yet been achieved as there seems to be a large number of possible combinations, but it was estimated that about 40 per cent of the individuals investigated were ' universal donors " as regards their white cells, these were, of course, not necessarily the same individuals as belong to the red cell group IV of Moss Dr **Doan** suggests that before transfusion the white cells of donor and recipient should be directly matched as well as the red cells He believes that the destruction of white cells goes on gradually as the blood is transfused until enough foreign protein has been liberated in the patient's circulation to produce a reaction This might explain the fact that the reaction usually occurs about half an hour after the transfusion is completed A contribution of a different kind comes from Dr **Roby Jones** and Prof E E **Glynn**, of Liverpool University.[2] These authors have made an elaborate investigation of the red cell blood groups of 40 healthy individuals by cross-agglutination and by absorption tests, each agglutination being done in five dilutions The tests were very delicate and revealed seven abnormal donors among the 40 investigated All these seven agglutinated with another member of their own group, and three of them belonged to group IV The authors suggest that these results may indicate the existence of abnormal blood groups, and may explain some of the unexpected clinical symptoms after transfusion Another step forward is recorded by Dr F W **Simson**, of Sheffield University[3] He has directed his attention to the isolation of a third pair of agglutinating factors in human blood in addition to the two pairs constituting the four groups of Moss and Jansky Other observers have already claimed to have demonstrated this Dr **Simson** now confirms their observations and finds that the presence of the third system can be readily demonstrated by absorbing a group III serum of a particular type with a group II serum, and testing with the resulting serum He finds that the third system is present in a large percentage of human bloods, but is not detected by the ordinary methods of testing He finds further that the system designated in the Jansky-Moss classification by the letter A is occasionally suppressed The blood of an individual in whom the A system is absent will appear to belong to group IV (Moss), although his blood is actually incompatible with other members of group IV Fortunately such individuals are rare, but the discovery goes to prove that the term " universal donor " for members of group IV is a misnomer, as some authorities have always maintained Whether we have to deal with abnormal groups, or rather, as now seems likely, with additional normal groups, it becomes more desirable than ever that a cross agglutination test between donor and recipient should be done wherever possible, and that every transfusion should be conducted very slowly at the beginning so that an unexpected reaction can be detected before serious harm has been done

---

[1] On the State of the Public Health. Annual Report of the Chief Medical Officer of the Ministry of Health for the Year 1925. H.M. Stationery Office. 1926. 5s.

[2] Seventh Annual Report of the Ministry of Health, 1925–26. Cmd. 2724. H.M. Stationery Office. 3s. 6d.

* * *

INTERNATIONALISM IN PORT SANITARY WORK

The Fourth International Sanitary Conference has been recently held at Paris, when 70 nations were represented, including, as separate signatories, the dominions of Canada, Australia, and South Africa and British India The Conference had the duty of bringing up to date and revising the International Sanitary Convention under which the various signatory Governments in 1912 agreed on mutual action and common standards for dealing with the chief diseases liable to be carried by shipping, among which the pestilences of cholera and plague have far the greatest significance The Conference was a success, and has laid down new lines of international action of the first interest for those concerned in the health regulations of our ports, a matter which affects not only the whole of this country but, by reflection, all other shipping centres and the nations on whose lines of world communication these centres are The apparently complicated organisation through which mutual action is now set up between civilised Governments for the prevention of epidemic invasion is, it would seem, working thoroughly well The delegates at the International Conference influence and revise the procedures upon which the various Governments act at the instance of the International Convention, while the information forthcoming at the half-yearly meetings of the Office Internationale d Hygiène Publique, sitting permanently in Paris, is on the one hand available for the Convention, and on the other for the League of Nations, for the Office Internationale now acts as an advisory council to the health organisation of the League, which is therefore in a position to assist all port sanitary work The enormous potentialities of the League of Nations in regard to the maintenance of the health of the world should be ever present to our minds, patriotic jealousies may be inherent in the development of the League, but a really international affair like the health of the world must not be impeded by racial sparring And recollection of this is timely while the League is in session

Before the Royal Sanitary Institute at the recent jubilee meeting Sir **George Buchanan** opened a discussion upon the present position of international agreements as they affect port sanitary work and the International Sanitary Convention, and throughout the address he considered the position of plague, its incidence and carriage, in illustration of the progressive work now undertaken by the representative sanitary authorities of the world The great plague epidemic, which began in China over 30 years ago and extended almost immediately to Bombay, thereafter to gain a permanent footing in India, *imposed* on port authorities a revision of their administrative machinery and a search for all the scientific resources which they could command Thus, in face of a new set of problems, epidemiologists and bacteriologists have supplied an increasing range of pertinent knowledge The result has been that we now know that plague infection, when carried by ships, cannot be dealt with in the same way as the infection of cholera, and further, that not only will international codes require variation in respect of different diseases, but that a particular disease, plague for example, cannot be fought with identical methods at all centres The old and cruel preventive system, recalled in the word "quarantaine," has long been superseded, owing, we may be proud to think, to the resolute opposition of British sanitarians, but the humane and scientific methods which succeeded have required regular modification with the growth of knowledge It is not enough to examine passengers and crews from infected areas, or to provide isolation and surveillance for sick people and contacts, nor is it permissible to await the occurrence of human plague on a ship before taking measures for the destruction of rats, as rats became recognised as the essential villains of the story, preventive precautions had to be altered in direction "Port sanitary authorities all over the world, though for different reasons and in different circumstances' said Sir GEORGE BUCHANAN, 'have direct interest in the suppression of rat plague on ships, in preventing the access of rats from ship to shore, and in keeping down the rat population in wharves, docks, and warehouses" This much is common knowledge, and we may assume all those interested to have read the useful publications of the Ministry of Health on the subject Those who on account of their particular avocation are compelled to study port sanitation are familiar with the different methods employed in fighting rats on ship or shore, and on their intermediate passage But it may easily happen that early steps have to be taken by those whose immediate work is not of a sanitary nature Both in South Africa and Australia this is recognised, and quite recently in Australia the Commonwealth Department of Public Health has brought out a handbook for the guidance of customs officers which contains an outline scheme for dealing with an outbreak of plague in a port in a practical manner The rat is a doughty foe, and it is largely on account of his irrepressibility that the Australian handbook considers it necessary to go into minute details of staff, office accommodation, and even the number of telephones that may be needed to repress a sudden invasion of plague The public may guess how much the world's immunity from pestilence is due to the great organisations outlined above, but Conferences and Conventions would be futile without the devoted attention of individual port officers, and this is a thing which deserves grateful attention

---

[1] Charles A Doan Jour of Amer Med Assoc, May, 1926

[2] A Roby Jones and Ernest E Glynn Jour of Path and Bact, 1926 xxix., 203

[3] F W Simson Ibid, July, 1926, xxix., 279

While recent developments against the attacks of plague, including various methods of rat destruction, are valuable, they none the less bring with them certain difficulties which have to be considered from an international aspect, and the arguments for thinking internationally in regard to plague, and even in regard to one side of the prevention of plague could—mutatis mutandis—be applied to the whole range of epidemiology If every country in the world applied the full force of its quarantine or port sanitary service, and all its experience, to prevent every possibility of the inter-carriage of infections, regardless of what was being done or had been done in this respect by any other country there would be such an overlapping of inspections that the business of the world would be seriously hindered These are the difficulties which the International Sanitary Convention exists to take into account, adjust, and minimise, and the regular revision of the Convention's regulations should keep pace with the world's progressive accumulation of scientific wisdom The dissemination of news by wire and air will have beneficial results exactly as the machinery exists for prompt action upon information

Annotations.

"Ne quid nimis"

HOSPITALISATION OF THE ASYLUM SYSTEM

WHEN the future historian surveys the treatment of mental disorder he will probably divide its development into three age-periods The first will be that in which the mentally afflicted person was regarded as a criminal and the second that in which he was regarded as a wild animal The first quarter of the twentieth century has marked the transition from the second to the third stage, in which he is being regarded more and more as a sick man In the era just passed the patient of mental disorder was not far from being in the position of a wild animal housed in a humane zoological gardens, his physical necessities were provided, with such additional comforts as charity or private means could procure, and he was firmly enclosed in a safe cage lest he molest the remainder of mankind If by a happy chance he struggled back to a standard of conduct compatible with civilised life, he was released from his cage and a veil of scandalised silence was drawn over his past, as far as possible, that is, for society never dreamed of admitting a comparison between a disordered brain and a disordered stomach, or of looking on an attack of mania in the same light as an attack of diarrhœa and vomiting

The progress made in right thinking on these matters in the last 20 years has been remarkable, and it is of the highest importance that the success already achieved should be followed up It may be that the stress of war and the steadily increasing strain of modern life has quickened our sympathy and our intuitive understanding of the mental state of those who have just failed to keep pace with the stream Now that the majority of people only maintain their headway with difficulty, they are able to realise that the "insane" patient is not of a different genus, a thing strange and abhorred, but of like nature with themselves, reacting as they would react if the screw were turned a little tighter The great obstacle in the way of those who have the peculiar training and ability to translate this understanding into active help is that, once beyond a certain point, the lines of communication are broken, and in the present state of our knowledge it seems impossible to get any message through to the beleagured garrison of a psychotic mind The physician can only stand outside, ever on the watch, and give what relief he can by setting disordered bodily processes at rest But before this stage is reached there is invariably a prodromal period when much can be done, and the most tragic reminder of the "wild animal" era that we have still to face is the fact that this critical time is one when the help and the need are usually separated by a gulf of tradition and false thinking Relatives and patients alike refuse either to acknowledge or to take seriously the first symptoms of mental disharmony It is also unfortunately true that the average practitioner is still untrained in the treatment of such cases and that both he and the public shrink from the mental specialist and send for him only when the time for helping is past Much responsibility, in this as in all departments of public health, lies on the general practitioner, and if the harvest of the psychiatric revolution is to be garnered successfully some means must be found of bridging the educational gap between the neurological out-patient department and the hurried course in the wards of a mental hospital

The annual report of the Board of Control[1] shows this year again how strenuous are the efforts of the statutory authority to ensure the adequate advance of psychiatry. One of the measures to this end is the provision of centres for out-patient treatment The Commissioners remark that they are "satisfied that such centres are productive of very great good, and that, in the public interest, it is important that they should be extended " Unfortunately, it is still only in a comparatively few areas that the work, first commenced in the West Riding of Yorkshire, is being extended Its value is inestimable, and, unfortunately, it is much restricted in many places by the fact that no special beds are available and that the institutions are not yet allowed to admit their out-patients as voluntary boarders It is most discouraging to read that certain local authorities still refuse to admit uncertified patients because of the loss of the small grant which they receive for those legally classed as " lunatics " Such a grant interpreted in such a way puts a premium on incurable mental disorder The social conscience of the public should not be satisfied until every mental hospital receives voluntary patients; only in this way will the number of certifiable cases be reduced and the percentage of cures raised Although " asylum fear " is greatly reduced by attendance at such out-patient departments, the Commissioners recognise its deterrent effects and encourage mutual arrangements wherever possible between general and mental hospitals In this way the resident staff of the latter can attend the general hospital as out-patient physicians In every revolution some valuable feature of the old system is overthrown, and it is permissible to regret the arrangements of the eighteenth and early nineteenth centuries whereby rooms were set aside in most general hospitals for insane patients To make room for the steadily increasing number of people who are willing to enter a mental institution before their trouble is incurable, some way must be found of extending the accommodation, which is seriously overcrowded in most parts of the country The modern mental hospital is a highly equipped institution, and is too elaborate an instrument to be used for harmless senile patients, for whom nothing curative can be done and who need only that the way to death should be made smooth and peaceful An approach has already been made to certain boards of guardians with a view to housing these old people in the Poor-law institutions, and the Board of Control desires that such arrangements should become general The great problem raised by the measure is the education of infirmary nurses in the proper care of these none too easy patients

---

[1] The Twelfth Annual Report of the Board of Control for the Year 1925 H M Stationery Office 1926 Pp 468 12s 6d

There are many other respects in which the up-to-date mental hospital is rapidly becoming a microcosm of modern treatment No such institution is complete without a visiting dental surgeon, and the Commissioners urge the appointment of a consultant in each of the specialties Whatever the cause of mental disease may be, hidden septic foci, disordered metabolic processes, and faults of the special senses can but prolong the struggle for equilibrium, 30 per cent of the mental hospitals are without a properly equipped pathological laboratory and trained pathologist, and the Board believe that these are essential from the point of view both of patients and staff They also feel strongly the need for an X ray installation and a radiologist, noting certain instances in which the elucidation of symptoms has been either impossible or detrimentally delayed by the absence of X ray facilities Clinical rooms for simple investigations, note-taking, and informal and therapeutic conversations are necessary for the proper conduct of cases and are being provided in most of the hospitals One of the most striking and valuable features in the hospitalisation of the asylum is the granting of parole and " trial trips " before discharge The mental condition of responsible people who are in psychological conflict is undoubtedly made worse by locked doors, censored correspondence, and all the relics of the prison system No harm has resulted from the judicious use of open-door wards and verandahs, freedom of action within the grounds, and provisions of tobacco and small comforts Many a superintendent has blessed the new system which enables him to send a recovered patient out with sufficient money to tide him over the first difficult weeks of readjustment, when the added problem of financial stress would almost certainly mean another breakdown

BENZOL POISONING AS AN INDUSTRIAL HAZARD

COMMERCIAL benzol is a coal-tar distillation product of which the chief constituent is benzene, C_6H_6 It is coming more and more into industrial use as a solvent for rubber, gums, fats, and resins, as a starting-point in the manufacture of coal-tar products and chemicals, and as a motor fuel blended with petrol. Its toxic properties were first recognised after a coroner's inquest in 1862,[1] and steps have since been taken to control the risk which exists in its manufacture and use A committee in America has been studying the position since 1922, and now three articles summarising their work have appeared [2] In the manufacture of benzol, the blending of motor spirit, and the chemical industries, the hazard is so great that stringent precautions are taken and mishaps only occur due to their breakdown, but when benzol is used as a solvent, at any rate in the States, in the rubber industry, artificial leather-making, sanitary can manufacture, dry cleaning, or in manipulating paints and varnishes, danger from inhaling benzol vapour is considerable A résumé is given of all known acute cases which have usually occurred through accidental exposure to vapour in closed spaces, such as coal-tar stills, benzol holders, or when painting the inside of tanks The vapour of benzol is heavier than, and so displaces, air A worker feels headache and dizziness and may then sink into the trough of vapour to be asphyxiated Only rapid removal into fresh air can save life, but many unprotected rescuers have failed in their efforts and have themselves been overcome Acute cases are either rapidly fatal or respond quickly to treatment, but there may be after-effects Air containing 0 5 per cent will produce confusion within half an hour, and from 0 6 to 0 9 per cent poisoning within a few hours Acute cases are, however, rare compared with chronic cases due to inhaling low concentrations over prolonged periods which have occurred in applying rubber dissolved in benzol to tin cans, in spreading rubber cement, and in rubber-tyre building Details of several cases are given Young girls exhibit a marked susceptibility Serious results ensue from prolonged exposure to air containing 0 2 per cent of benzol vapour The usual symptoms are headache, dizziness, palpitation, bleeding gums, frequent menstruation, and blue spots on the arms and legs, with secondary anæmia, the leucocyte lymphocyte formula being inverted Nervous symptoms indicating sclerosis of the dorsal columns and pyramidal tracts follow Leucopenia may be severe, and the red cell count be below 500,000, with hæmoglobin as low as 15 per cent Animal experiments, for the most part confirmatory of observations on human beings, carried out by many workers, are summarised, they bring out that resistance to microbic infections is diminished by benzol poisoning An effort, confessedly incomplete, was made to ascertain the extent of the benzol hazard in the United States through a questionnaire sent to firms likely to be concerned By this means 15 fatalities and 83 cases of sickness were traced previous to 1925, 29 compensable cases in the State of Ohio in five years, and seven fatalities during the first nine months of 1925 Next the committee undertook an intensive study under factory conditions of atmospheric pollution by benzol The method of testing employed was to absorb any benzol vapour present in activated charcoal, and a description is given of the apparatus used Concentrations of solvent vapours were detected varying from 40 parts to 4140 parts per million of air The blood of 81 persons employed in the atmospheres sampled was examined, and in 26 cases the findings were positive for benzol absorption, the standard chosen was a white cell count of less than 5500 per c mm Histories are given in detail of two cases which justified the diagnosis of aplastic anæmia Undoubtedly as benzol is used to-day it involves a substantial industrial hazard Even when the concentration is below 100 parts per million all risk is not avoided owing to the great personal idiosyncrasy of some individuals The use of substitute solvents of less toxicity is the only sure remedy Meanwhile exposure to risk should be minimised by preventing benzol vapour from escaping into work places or by withdrawing it at its point of origin And steps should be taken to detect incipient cases of poisoning and withdraw them from risk, standards of initial health before employment, and of symptoms calling for suspension, are proposed The full study made by the committee is to be published later, but the present preliminary articles exhibit benzol as an insidious industrial hazard The bibliography attached to the third article indicates how widespread is this hazard

---

[1] THE LANCET, 1862 i, 105

[2] Benzol Poisoning as an Industrial Hazard By L Greenburg Public Health Reports Vol xli, No 27, pp 1357–1375, No 28, pp 1410–1431, and No 30 pp 1516–1539 1926 Washington Government Printing Office

THE TREATMENT OF PSORIASIS

IT is the experience of most British dermatologists that the treatment of psoriasis by injections is, as a rule, ineffective unless supplemented by vigorous local measures This opinion was emphasised by Dr R McKenna in his opening address to the discussion on the treatment of psoriasis, which we report on p 550 Neither he nor those who followed him appear to have made a trial of tartro-bismuthic salts which Dr A. Versari,[1] of Naples, claims to have used with some degree of success Sabouraud's conception that the modern treatment of psoriasis should be directed to the discovery of some substance that, under the form of injections, is capable of influencing the lesions without recourse to local applications, has lately been applied by Dr Versari It has long been believed that psoriasis is sometimes favourably influenced by injections of grey oil, enesol, and arsenobenzol even in the absence of signs of syphilis, and that salts of bismuth have a definite spirochæticide action, as shown by Levaditi and Castellani in the spirochætosis of rabbits and fowls Prowazec and Rasck, of Christiania, claim to have isolated a similar organism which they name *Spirochæta sporogona psoriasis* These researches influenced Dr Versari in experimenting with an organic preparation commercially known as *Trepol*, which is an oily suspension of tartro-bismuthate of soda and potash containing 60 per cent of bismuth Intramuscular injections every five to six days in doses of 2–3 c cm were given in 21 cases, they were well tolerated, no stomatitis or renal trouble occurring, and the gingival rim formed very slowly and never reached the intensity noticed in syphilitics treated with bismuth Out of the 21 cases under observation, no local treatment being given, a complete retrogression of the lesions took place in 12, in the other nine there was partial regression, desquamation, and diminution of the hyperæmia All the patients had relapses but always in a much smaller degree, except one who had no relapse from November, 1924, till January, 1926, not having been given any injections since June, 1925 In three patients a psoriasic leucoderma appeared after the cessation of the lesions Histological examination of these patches showed (1) depigmentation of the epidermis from disappearance of the epithelial chromatophores and marked scarcity of the connecting filaments, (2) persistence of the granular layer, (3) slight increase in the superficial layers without parakeratosis; and (4) hypertrophy of the collagen fibres in the deep portion of the reticular part of the corium Researches made on smears from the lesions failed to discover the *Spirochæta sporogona psoriasis*, but linear or spirilliform bodies were seen coloured violet-red by Giemsa, sometimes isolated but more often in masses They were regarded as probably connective tissue fibres or macerated elastic tissue In the absence of any positive evidence of the presence of an organism the action of the bismuth injections cannot be explained as spirochæticidal, and investigations directed to detect the presence of bismuth in the retrograde patches of psoriasis were without result Dr Versari is inclined to agree with Sabouraud's opinion that the various injections which have been used with success in the treatment of psoriasis, such as calomel, enesol, cacodylate of soda, camphorated oil, antitetanic and antidiphtheritic serum, simple horse serum, Danysz's entero-vaccine, including preparations of bismuth, may be considered as working by shock production Most of his colleagues in this country will agree with this view, but it does not follow that certain of these preparations are not more effective than others in producing shock of the right kind or degree

THE TWO GIBRALTAR SKULLS

THE Abbé Breuil, some years ago, noticed and called attention to Mousterian remains in the neighbourhood of the Devil's Tower at Gibraltar, and a result of his observations was seen at the recent meeting of the British Association at Oxford, when Miss D A E Garrod described the fruits of her excavations in this place Among other things, a young human cranium was found, embedded in hard travertine, under conditions which make it practically certain that its original owner belonged to the period represented by its immediate surroundings and accompaniments Mr L H Dudley Buxton seems to have been very successful in freeing the specimen from its matrix, and has already advanced tentative reconstructions and suggestions based on his work it is, of course, too early to do more in this place than record the discovery, as the remains will have to undergo a lengthy and exhaustive examination before definite announcements can be made about the cranium, which is that of a child This skull, referred to in the lay press as the "Gibraltar skull," is not really entitled to this name as a distinctive label, for many years ago another discovery was made close to the site of the present one This original find, the "Gibraltar skull" of anthropologists up to the present, was found in 1816 in the Forbes Quarry Its present-day value was not assigned to it for many years, however, and the uncertainty about its date is still a stumbling-block in the way of definite recognition by many, although it is now generally admitted to be of great age It has been considered a female relic While Gibraltar I is thus still doubtful in some ways, and hence stands somewhat in the background at present, the cranium now brought forward, Gibraltar II, is undoubtedly authentic as a Mousterian relic, presumably from one of the Neanderthal race *Homo neanderthalensis* was a human being of a low order, whose known anatomical remains are now sufficient in number to allow of more or less clear ideas of his characteristics, and distribution, to be formed His kind inhabited the old world, at least through several epochs, and apparently died out after the end of the glacial period Although no doubt a very unpleasant fellow according to modern standards, he was not a wild beast, but possessed a large brain and had a culture of his own; this improved as the ages went on, and it is customary to recognise different types of it, Chellean, Acheulian, and Mousterian, these names being given with reference to certain places where typical and undoubted examples have been demonstrated. The Mousterian is the last of these types, and covers the last glacial period Neanderthal man overlapped higher cultures and human types, but whether he mixed with these and bred with them, or whether he lived and died apart as a separate species or a lower race, is not apparent He is not generally looked on as in the direct line of ascent of modern man, but he is none the less a most fascinating study and problem, and everything which makes for further acquaintance with his form or his family, or his haunts and history, is of great interest. Gibraltar II is not the only specimen of a young form that has been obtained, for remains of children were found at Ferrassie and at La Quina, while the skull of a youth at about the age of puberty was among the discoveries at Le Moustier this last was remarkable in the great development already of the heavy skull and brow-ridges which are characteristic of the race When the latest addition is ready for complete examination it will without doubt provide many features of interest, both with reference to questions affecting its geological contemporaries and for purposes of comparison with other and more modern young skulls Sir Arthur Keith describes it as the first representative Mousterian skull of a male child, and puts its age as between 20,000 and 40,000 years

---

[1] La Riforma Medica, May 3rd, 1926

FEAR REACTIONS IN THE CHILD

An episode that recurs in almost stereotyped form was described last week at an inquest upon a child who fell into the *Mersey* whilst at play with three others, who were too frightened to tell anyone Accidents are inevitable as long as rivers and children are in proximity, but such behaviour as the companions of the victim showed is not inevitable, yet it occurs with sufficient frequency to make us suspect that the cause is to be found in general principles rather than in individual tendencies In our last issue we commented upon a parallel case in which a coroner severely condemned a lad of 15 who had hidden the fact of a playmate having been shot in the palm The Warrington coroner adopted a different attitude in trying to lessen the remorse shown by the boys concerned in the drowning accident, and when we consider the impression that a fatal disaster can make upon adult participants we must agree that in such cases no words are wasted that can alleviate self-reproach in a child We might, nevertheless, differ from the coroner's view that the three were silent because "you can't put old heads on young shoulders" and "boys of their age have not been trained to think and do what was the right moral thing to do" They knew as well as any adult what was the right thing to do, but were prevented from doing it by fear, and it is fear that leads to such incidents Apart from knowledge, the instinct of the child is surely to turn to the adult for help; the secretive behaviour we are discussing indicates an inhibition rather than a lack of knowledge or moral training, and its causes are to be sought in our attitude towards the child Perhaps we may reach an understanding of the mind of the child in such circumstances when we remember what care we take to avoid any censure upon sufferers from venereal disease lest that may lead them to hide it If such care is necessary between man and man, we must recognise the need for avoiding the introduction of fear into the relation between the child and the omnipotent grown-up Besides its influence upon behaviour, this fear is shown by modern research to underlie many nervous symptoms both in children and those of mature years—playing, indeed, a part greater than that played by actual terrifying incidents

SANATORIUM TREATMENT OF TUBERCULOSIS

The efficacy of sanatoria in the treatment of tuberculosis has been questioned a good deal in recent times, and a number of attempts have been made to measure the results which they have obtained and are obtaining The question is very complicated and it is difficult to get a certain answer The latest contribution, by Dr Percy Stocks and Mr M N Karn, is published from Prof. Karl Pearson's laboratory in his *Annals of Eugenics* (vol i, 1926, p 407), and their inquiry appears to have been made with unusual care and thoroughness They deal with the histories, over a period of six years, of 2794 consecutive cases of undoubted pulmonary tuberculosis brought under the survey of the Belfast tuberculosis dispensaries from 1914 onwards Of these rather more than one quarter went to sanatoria, while the rest received only dispensary or domiciliary treatment These two groups are compared with one another as regards death, general progress and condition after six years and each is divided into three categories of severity of disease when first seen as judged by a combination of anatomical and symptomatic data For a discussion of the various pitfalls and uncertainties with which such an investigation is surrounded the original memoir must be consulted But the authors reach without hesitation the summary conclusion that the ultimate progress of patients first seen in the incipient stage was worse in those who went to sanatoria than in those who did not, in those in the "moderately advanced" and 'far advanced' categories the progress of the two groups was the same These conclusions hold good for both sexes, and for young people as well as adults The obvious criticism is that some sort of selection was exercised in choosing cases for sanatorium treatment which was related in some way to prognosis The authors devote much attention to this point and, after examining all the circumstances which they can think might have any such influence, they conclude that if selection was made on any significant basis they cannot discover what it is Many people will be loth to be persuaded off-hand that sanatorium treatment does phthisical patients no good, and it is in no depreciatory spirit of the careful work of Dr Stocks and Mr Karn that we suggest that it would be well if other statistics were similarly and independently examined in the light of their methods and commentary, including their suggestion that it is the depressing mental atmosphere of sanatoria which does the harm It may be that there is some particular type of person who does badly under sanatorium conditions, the identification and exclusion of these might perhaps change the mass statistics to the more favourable complexion which most people believe, perhaps groundlessly, that they ought to have Meanwhile it is well to remember that sanatoria exist for at least three purposes to ameliorate the physical state of the individual patient, to teach him how to manage his life successfully after he leaves the institution and to spread this information by his example, and to protect others from infection The present criticism deals only with the first of these objects.

THE MENACE OF OBESITY

We alluded last week (p 508) to the diminished expectation of life for those in whom the circumference of the abdomen exceeds that of the chest Investigations carried out on a large scale in America have shown that the optimum weight for a man of 45 years is about 20 lb less than the accepted average weight for that age, using the term "optimum" in relationship to physical fitness from the standpoint of an insurance company The steady decline in physical efficiency which the carrying of 20 lb of superfluous matter entails should in itself be sufficient antidote to the dangerous self-complaisance with which the middle-aged man views an increase in his girth If this is not enough, a perusal of Dr Leonard Williams's new book on Obesity[1] will quickly frighten him into a more satisfactory frame of mind The infiltration of fat into the subcutaneous tissues may result in a raised blood pressure from increased peripheral resistance, and against this high blood pressure a heart embarrassed both on its surface and throughout its musculature has to work under diminished efficiency Renal disease is extremely likely to follow such a condition of affairs, and it is not surprising to learn that the mortality from cardiac and renal diseases among the obese is twice as high as in persons of normal weight To make matters worse, it is notorious that such a diseased heart may give rise to very little in the way of symptoms and nothing in the way of local physical signs, and yet as Dr Williams emphasises, the fat man may die the next time he hurries to catch a train *Obesity* does not stop at producing disturbances of the circulatory apparatus The respiratory system may suffer and it is well known that certain asthmatics may be greatly relieved by cutting down their weight. Various troublesome forms of dyspepsia may result from over-weight, while invasion of the liver increases such troubles and the pancreas itself may suffer, leading probably to the form of diabetes associated with obesity. Intertrigo, varicose veins, hernia, and even deafness are some of the minor disturbances for which obesity may be blamed, to say nothing of the increased gravity of the prognosis of acute diseases in the obese subject. The cure of obesity is largely bound up with the problem of its causation. Perhaps the most striking advance on the subject within recent times has been the proved complicity of the endocrines leading to the broad classification of obesity into that caused by alimentary surfeit and that caused by underaction of one or more endocrine glands. The famous Daniel Lambert, who died at the age of 40 weighing nearly 53 stone, may safely be put into the latter category; but it is admitted that most of the obesity commonly seen about middle age is due to over-feeding. "To the scientist," wrote Vance Thompson, "there is nothing so tragic on earth as the sight of a fat man eating a potato." This quotation from Dr Williams's book may give perhaps the keynote to the solution of the problem. It is not generally realised that it is the starchy carbohydrate foods rather than the more quickly and readily metabolised fats which are responsible for much of the alimentary type of obesity. More rational diet will go a long way to preventing this troublesome complaint, and in its cure this notion must be firmly established in the mind of the patient. The arguments for and against muscular exercise (which may actually lead to an increase in weight, especially in endocrine cases), rest in bed, fasting, the use of thyroid extract and special diets, such as that associated with the name of William Banting, the undertaker of St James's-street, are still very complex. The influence of climate, race, and heredity comes into their discussion. What is certain, however, is that obesity is a serious menace to health and, far from being an enviable state, it is one which requires close attention.

---

[1] Obesity By Leonard Williams, M D London Humphrey Milford, Oxford University Press 1926 Pp 171 *10s 6d*

THE AFTERMATH OF WAR.

THERE is no unofficial organisation for relieving the physical wreckage of the late war and helping the more or less disabled to help themselves which does more valuable and less ostentatious work than the Joint Council of the Order of St John of Jerusalem in England and the British Red Cross Society, which has just issued its sixth annual report. That it appears only five months after the end of the Council's financial year is an indication of the business-like fashion in which its affairs are managed. It has been a year of internal change, Dr F N Kay Menzies, who succeeded the late Sir Napier Burnett as Director of the important Hospital and Medical Services Department, having been appointed principal medical officer to the London County Council, and Mr R H P Orde, who has had a long experience of the Department, having taken his place as Acting Director. The Council has always been well served, and there is every reason to hope that the loss of two distinguished directors in rather rapid succession will in no way reduce the value of its work. That work is not confined to dealing with the disabled, for it keeps as watchful an eye upon the provincial hospitals as the King's Fund does upon those in the London district, and manages an ambulance service which annually breaks its own "records," and thus helps very materially towards filling a gap which is even now by no means completely closed. The purely after-war activities of the Council, as set forth in the report, are many and extend to all ranks of the Services, but perhaps the most important of them are those undertaken by the Auxiliary Hospitals for Officers Department which seeks to relieve ex-officers suffering from sickness or disablement attributable to, or aggravated by, their service in the war. More than 17,500 of such cases have been helped during the last six years, and it is melancholy to have a record that the majority of them have been tuberculosis cases. The Department puts them into hospital at Brighton, assists them to go to Switzerland or the Riviera, helps them with the cost of treatment while their cases are being officially investigated, and does not pass over unnoticed those whose applications have been rejected by the Appeal Tribunal. There are, unhappily, still many ex-officers who require surgical, medical, or convalescent treatment for disabilities for which the Ministry of Pensions could not accept liability, but are unable to pay operation and nursing home fees. Here the hospital steps in with its inestimable boons and removes much bodily suffering and mental anxiety. As regards mere extent, however, the activities of the Emergency Help Committee stand at the head of all these works of mercy. Last year 17,535 cases were helped, and £100 000 a year is being spent, mainly in grants of a fixed amount, for some specific purpose calculated to confer permanent benefit. Very often the money is eventually refunded, and many men, their physical handicaps notwithstanding, have thus been enabled to become self-supporting. In addition to all this money is found for materials and training for bedside occupations, for drives and entertainments and for Christmas gifts. The report makes a splendid record of public service, most of it performed voluntarily by helpers whose patience and sympathy provide the human touch that lights up so many lives upon which the shadow of war has fallen, never entirely to be removed.

ACUTE NEPHRITIS IN CHILDREN

A STUDY of the characteristics of the two principal forms of acute nephritis met with in children by Dr Kenneth D Blackfan,[1] of the Harvard Medical School, contains many points of interest. Dr. Blackfan's account suggests that the differentiation of these types is more complete than is usual in this country; of 41 cases 24 were definitely glomerular and 14 tubular, only three being mixed types. None of the cases described were scarlatinal. A table shows the distinctive features of the two types. Among the characteristic signs of glomerulo-nephritis are marked hæmaturia, high non-protein N-content of the blood, increased arterial tension, and frequent occurrence of uræmia. The tubular form is characterised by marked albuminuria and œdema, normal arterial tension and non-protein N-content of the blood, and the rare occurrence of uræmia. In fatal cases the condition of the brain showed distinctive differences which are held to be of significance in determining the presence or absence of the so-called uræmic symptoms. The author prefers to call the latter "cerebral" symptoms, as he believes that they are the results of mechanical intracranial conditions rather than of raised blood-urea. In tubular cases the brain showed a spongy œdema, comparable to that of the tissues, while in glomerular cases it was firm and tense, with flattening of convolutions and a tendency to the formation of a medullary pressure-cone. It is suggested that the causal sequence of events is (1) œdema of brain, (2) increased intracranial pressure, (3) raised arterial tension and the symptoms commonly called uræmic. The author claims that this hypothesis is confirmed by the results of lumbar puncture. He found that early in the disease there was a great increase of intrathecal pressure, but at a later stage this was not so, and he considers that this is explained by the occlusion of the arachnoid foramina occasioned by the increased pressure. This explanation is perhaps open to criticism; if the intracranial conditions are as described it might be expected that lumbar puncture would be a highly dangerous procedure, and the author might be considered fortunate in not having to record cases of fatal termination through impaction of the pressure-cone. In the summary it is stated that lumbar puncture should be used guardedly for this reason. Treatment of this type of nephritis was directed by Dr Blackfan towards the reduction of the intracranial pressure, and was found to be effective in relieving the cerebral symptoms Intravenous injection of a 1 per cent solution of magnesium sulphate was found to reduce the arterial pressure, and presumably the intracranial pressure, considerably and immediately; this was accompanied by the administration of large doses of the same salt by the mouth and rectum, the intravenous injection being repeated, if necessary, on the following day

---

[1] Bulletin of the Johns Hopkins Hospital, August, 1926.

INFLUENZA IN SCOTLAND

IN the Scottish Registrar-General's return for the quarter ending June 30th, 1926, there is shown a somewhat striking increase in the deaths from influenza The total number of deaths for the quarter was 797, as against 198 for the corresponding quarter of 1925 The contrast invites examination Of the 797 cases, 515—that is about 64 per cent—occurred in the 16 principal towns But the distribution over the months was unequal In the month of April there occurred 330 deaths, in May 68, in June 17 When we analyse this still further in the light of the weekly returns we find that in the four successive weeks of April, the deaths from influenza were 81, 115, 80, 54 In May the figures tapered off as follows 27, 25, 17, 15, 6 In June they were 6, 2, 3, 5 Thus, of the total town deaths (515) about 64 per cent occurred in the month of April It may, therefore, be taken that of the deaths for all Scotland (797) the great majority occurred in the first three weeks of April This is rather a striking fact As a rule infectious diseases sink to their lowest for a period in April Obviously influenza has, this year at least, not followed the rule If, however, we look back a little, the increase, though great, is not so sudden as it looks There were 40 deaths from influenza in January, 35 in February, and 100 in March The epidemic was on the rise If we look back to 1924 we find that the deaths in the second quarter of that year were 767 Of these 224 occurred in the principal towns, and of these again 153 occurred in April It may be assumed that approximately the same proportion occurred in the other areas of Scotland The question, therefore, arises whether we have not here in 1926 the peak of another small wave of influenza Dr Brownlee, in his analysis of influenza epidemics, finds that in the minor waves between the great pandemics there is usually an interval of 33 weeks In 1924 the total deaths from influenza were 2490 In 1925 they fell to 1246 In 1924, in the principal towns, the lowest number of deaths occurred in August But as in 1925 there were 1246 deaths, the way is not quite clear for suggesting that the 33 weeks period has been verified We seem still to be living among the wavelets of the 1918 epidemic In the years 1918–25 the Scottish deaths from influenza were 11,111, 7215, 1339, 1330, 3706, 531, 2490, 1246 The great drop in 1923 suggests that there must be some change in the method of record Otherwise the stream of cases has been unbroken In the light of this sequence, and particularly in the light of the facts for 1924, the sudden increase of deaths in April, 1926, does not appear so exceptional But deaths from influenza are not the whole case Deaths from pneumonia and influenzal pneumonia are equally striking For the second quarter of the year 1924 the deaths from pneumonia and influenzal pneumonia were 1568, in 1925 they were 1142, in 1926 they were 1536 The weekly returns for the principal towns show that the great incidence, as might be expected, is in the cities The respiratory deaths as a whole show an increase in April, May, and June, corresponding to the increase in influenza Thus, in April there were 895 deaths, in May 465, in June 274, and in July 245 It is clear that the influenza outburst was associated with an outburst of pneumonia, influenzal pneumonia, and bronchitis The relations between influenza and the pneumonias are still difficult to define and the question arises whether some of these outbreaks may not be pneumonia complicated by influenza rather than influenza complicated by pneumonia It is certain that where influenza intervenes the pneumonia death-rate rises Whether this applies to all "types" of pneumonia is still for investigation From 1918 onwards, as in influenza, the stream of the pneumonias goes on unbroken At least in some areas pneumonia continues to increase Pneumonia and influenza seem to vary more or less together

SYMBIOSIS

SYMBIOSIS is always a curious and interesting topic. The word has been used in a variety of meanings, and has not infrequently been the peg on which extravagant imagination and bad technique have hung their confusing products In a limited pathological sense it is often important to know, and generally difficult to determine, whether the total action of two infecting organisms is the sum of their separate actions, or whether something additional is achieved when they act jointly The streptococcal invasion of a tuberculous lung to which the symptoms of phthisis are so largely due, or the purification of a stinking wound by the "Reading" bacillus are hardly cases of symbiosis properly so-called, but they are examples of a large group of occurrences round which Dr Aldo Castellani writes an interesting article in the *Journal of the American Medical Association* (1926, lxxxvii, 15) His original observations fall under two headings In the first place he reviews a number of cases where two organisms together will do more in a test-tube than the sum of their separate actions Thus the typhoid bacillus produces acid and no gas when grown in mannite or maltose, Morgan's bacillus does not ferment either substance, a mixture of the two bacilli ferments both carbohydrates with the production of acid and gas Other examples of the same kind were found in studying the separate and combined actions of the yeasts and bacilli of which ordinary commercial yeast is made up In the second place he cites three examples of clinical diseases where two organisms are concerned Trichomycosis nigra is a disease of axillary and pubic hair, in which small black nodules on the hairs are made up of a fungus (*Nocardia tenuis*) and a pigment-producing coccus (*Micrococcus nigrescens*) In trichomycosis rubra the same fungus is associated with a coccus which produces red pigment. In a stomatitis, clinically clearly distinct from thrush, he has found a yeast-like fungus (*Cryptococcus graciloides*) with a bacillus (*B vermiculoides*) It is obviously difficult in these cases of surface lesions to be sure, or to furnish clear proof, that some associated action is going on which is an essential feature of the disease The facts are, however, suggestive, and the ideas in Dr Castellani's mind are worth consideration

LEAGUE OF MERCY —In 1925 the League gave £15,000 to King Edward's Fund, making a total so contributed of £383,000 since the League was started in 1899 In addition £9901 was granted to extra metropolitan hospitals The total amount that has been distributed to hospitals now reaches £457,732

GERMAN ASSOCIATION OF UROLOGY —This Association will meet from Sept 30th to Oct 2nd in Vienna A very full programme has been arranged On Sept 30th the subject of Pain and how to Combat it in Urology will be discussed in the morning, while for the afternoon session 42 communications on the Pathology of the Kidney and the Ureter have been offered On Oct 1st in the morning the Pathology, Pharmacology, and Therapy of Anuria will be the subject of discussion, while in the afternoon, after a business meeting, the Association will receive communications on the pathology of the bladder and prostate On Oct 2nd the morning will be devoted to a discussion on malignant growths of the bladder, and the afternoon to one on the pathology of the urethra and genital passages Among those taking part are V Blum and F Necker (Vienna), Georges Luys (Paris), H Wildbolz (Berne), O S Lowsley (New York), L Casper (Berlin) Further information may be obtained from the President of the Association, Prof V Blum, Alserstrasse 43, Vienna VIII

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CLXXXVIII.—THE MEDICAL TREATMENT OF CHRONIC DIARRHŒA.

I.—INVESTIGATION OF THE CASE.[1]

THE management of a case of chronic diarrhœa must be based on a clear appreciation of the cause of the symptom. Palliative treatment with bismuth chalk, or opium, is rarely indicated and never satisfactory. Whether in a persistent or recurrent form diarrhœa may be the leading complaint in so wide a group of diseases that an enumeration of these, together with a brief account of their main clinical features must be accepted as a proper preliminary to any discussion of therapeutics. An enumeration of the more common types of chronic diarrhœa is appended. As the diagnostic importance of these two observations is very great, yet not always recognised, it is also well to insist that *no case of chronic diarrhœa can be regarded as having had a full clinical examination,* unless this has included (1) *a digital examination of the rectum, and* (2) *a naked-eye inspection of the stools.* Some cases will require a more searching inquiry with laboratory or other accessory diagnostic methods.

Diarrhœa of Gastric Origin.

This is a condition dependent on gastric achylia—a painless diarrhœa occurring especially in the early morning before breakfast and after meals. There are usually two to four actions per diem, occasionally six to eight. Stools are soft and light brown. No blood or mucus is present, and abdominal and rectal examinations are negative. Occasional associated symptoms are (1) acne rosacea and morning nausea when the achylia is due to chronic gastritis, (2) pernicious anæmia. The diarrhœa may precede the development of the anæmia by several years. Test-meal shows absence of free hydrochloric acid. Microscopic examination of stools may show excess of undigested meat fibres and other evidence of alimentary "hurry." X ray after barium meal shows "gastric hurry."

Diarrhœa of Colonic Origin.

This group includes cases associated with colonic and rectal carcinoma, chronic ulcerative colitis, the dysenteries, spurious rectal and colonic diarrhœas, and certain rarer forms.

(1) *Colonic and Rectal Carcinoma.*—Urgency pain, and loss of weight are associated symptoms. Blood, pus, and mucus are present in stools, not always macroscopic, but usually more conspicuous the lower the situation of the growth. There are from three to four, up to 20 or more actions a day—the lower the lesion the greater the frequency. Sometimes diarrhœa and constipation alternate. Diagnosis is confirmed by digital or sigmoidoscopic examination, laboratory examination of stools, and X rays with barium enema.

(2) *Chronic Ulcerative Colitis* (non-specific), and *Chronic Bacillary Dysentery.*—These are usually associated with colonic flatulence and pain, frequent fluid stools up to ten or more per diem, with blood and mucus, anæmia, loss of weight, and tenderness along descending colon. Diagnosis is confirmed by sigmoidoscopy which reveals a red, universally unhealthy, granular mucosa, flecked with muco-pus, bleeding easily superficial ulceration, and in severe cases, deeper irregular ulcers. Diagnosis of bacillary dysentery may occasionally be decided by recovery of the organism from direct swabbings through the sigmoidoscope or by serological reactions with the patient's serum against known types.

(3) *Chronic Amœbic Dysentery.*—In most cases, but not all, there is a history of residence in the tropics; frequently a mild diarrhœa with little or no pain and only slight disturbance of general health occurs. Macroscopic blood and mucus are not always noticed by patients. Sometimes there is tenderness over cæcum, ascending colon, or edge of liver. Diagnosis is confirmed by sigmoidoscopy which shows small clear-cut rounded ulcers appearing as craters on small elevations, the intervening mucosa being healthy. Microscopic examination shows red cells, and, perhaps, amœbæ or cysts. Sigmoidoscope sometimes confirms when laboratory reports are negative.

(4) *Spurious Rectal and Colonic Diarrhœa* may be (*a*) due to *fæcal retention* or impaction in old or feeble subjects, when rectal pain or intermittent constipation and diarrhœa may be present, or a fæcal accumulation may be revealed on rectal examination; or (*b*) *muco-membranous colitis,* in which there are attacks of so-called "diarrhœa" alternating with periods of constipation, colonic pain, worse after defæcation, and passage of scybalous fragments and copious mucous shreds and casts. In these cases the colon is hyper-irritable and often easily palpable owing to spasmodic contraction. Commonly a history of abuse of purgatives and the well-known neuropathic associations may be obtained. Blood is rarely present. Sigmoidoscopy shows a mucosa normal or redder than normal, but not granular or ulcerated.

(5) *Rarer forms* of chronic intestinal diarrhœa include those associated with the terminal colitis of *Bright's disease* and with *amyloid disease.*

Diarrhœa consequent upon Diseases of the Absorptive System.

(1) *Tabes mesenterica* occurs generally in children or young adults. the mild cases reporting slight chronic diarrhœa with pale or yellow motions, vague abdominal pains referred to both iliac fossæ, slight afternoon pyrexia, and general symptoms suggestive of tuberculous infection. the more serious cases showing copious bulky evacuations, pale. greasy, and porridgy, stunting of growth, abdominal enlargement, slight anæmia, and sometimes tetany. Stools contain excess of fats in the form of soaps and fatty acids.

(2) In *cœliac disease,* pale, bulky stools as above with abdominal enlargement and infantilism are found. This disease is confined to early childhood.

(3) In *sprue* there is always a history of residence in the tropics, abdominal enlargement, sore tongue, great wasting, copious pale, fatty and frothy stools. and frequently an anæmia resembling Addison's (pernicious) anæmia.

Chronic Diarrhœa from Tuberculosis of the Small Bowel.

This is usually a late complication of chronic pulmonary tuberculosis or grave abdominal tuberculosis. Frequency of stools is variable. commonly four to six in the day or more when ulceration extends to colon. Pain around the navel and in right iliac fossa, tenderness in right iliac fossa. and post-prandial diarrhœa, especially after hot drinks, are found. Stools are usually semi-fluid and light in colour, rarely showing visible blood, but giving positive chemical and spectroscopic tests. With associated glandular involvement there may be chalky stools, frothing under a stream of water, and showing excess of fatty acids and soaps under the microscope.

Other Forms.

Infective or irritative diarrhœa accompanying *chronic cholecystitis* and *appendicitis* is usually slight, intermittent rather than chronic, and associated with the local or dyspeptic symptoms and signs of these diseases.

In *pancreatic diarrhœa* the stools are copious, pale, and oily (steatorrhœa), congealing on a cold surface or caking on the top of a liquid motion. There is serious loss of weight. Fat globules are present;

---

[1] An article in this series by Dr. Ryle on Chronic Diarrhœa: the Management of the Case will appear in THE LANCET next week.

also starch and meat fibres The diastase test or glycosuria may give further evidence of impaired pancreatic function

Nervous diarrhœa may be (*a*) a visceral neurosis expressing anxiety, always worse on certain occasions, and especially before public functions As the uncertainty associated with all forms of chronic diarrhœa itself creates anxiety it is well to recognise that a nervous diarrhœa may have had its origin in some other disturbance of function, (*b*) an accompaniment of Graves's disease

Diarrhœa due to excessive ingestion of carbohydrate is usually very mild—one to three soft actions a day with much intestinal flatulence It accompanies an excessively starchy diet and deficient exercise French authors lay more stress upon this condition than is usual in this country, and describe a variety with frothy, gaseous motions

Diarrhœa following gastro-enterostomy may manifest itself in (*a*) benign, or in (*b*) grave form. (*a*) In the benign form a too-patent stoma is associated with rapid evacuation of the stomach and overloading and irritation of the small bowel Stools are light in colour There may be loss of weight The microscope shows poor digestion of meat fibres and fats, owing to precipitate passage of the gastric chyme (*b*) The grave form is associated with gastro-colic or jejuno-colic fistula; serious loss of weight, pain, eructations of foul gas, and sometimes vomiting of fæces may occur The diarrhœa may be very profuse Confirm by X ray, which may show tenderness or other evidence of ulceration near the stoma, and fractional test-meal, which may recover colonic matter from the stomach Occult blood is found in stools

The treatment in some of these types, notably diarrhœa due to carcinoma, a terminal colitis, tuberculosis of the small bowel, cholecystitis and appendicitis, Graves's disease, and gastro-colic fistula, is either that of the primary disease, or surgical, or purely palliative, and will not here be considered The management of cases of the other types will be outlined in Part II of the present article

John A. Ryle, M D, F R C P Lond,
Assistant Physician to Guy's Hospital.

Special Articles.

MEDICINE AND THE LAW

Workmen's Compensation Lead Poisoning Liability of Successive Employers

In 1906, as is well known, Parliament extended the system of workmen's compensation to illnesses due to industrial diseases such as lead poisoning Section 8 of the 1906 Act had the effect of treating as an accident something which would not ordinarily be treated as an accident—namely, the occurrence of a progressive occupational disease at the point at which the workman is disabled by it It was clear that this new principle would operate arbitrarily against a particular employer where the occupational disease had already set in while the man was in the service of previous employers Parliament, therefore, made provision for exacting contributions from previous employers as well as dealing with the liability of the final employer In the latter connexion Section 8 used significant language to emphasise the requirement of an immediate relationship between the time of the employment and the time of the industrial disease If the workman "*at or immediately before the date of the disablement or suspension*" was employed in one of the specified processes, the disease 'shall be deemed to have been due to the nature of that employment unless the employer proves the contrary " In other words, if the occupation is one which can give rise to the industrial disease, then there is a presumption in favour of the workman that the occupation did in fact give rise to the disease But the presumption is not absolute, more than one workman has lost his claim for compensation on that account in circumstances which deserve examination Those words, "at or immediately before the date of the disablement or suspension" are important If there has been an interval between the employment and the disablement or suspension, then the presumption against the employer does not arise Twelve years ago there was a case (Dean *v* Rubian Art Pottery, Ltd, 1914, 2 K B, p 213) in which the workman had been employed down to April 18th and died of lead poisoning on May 15th It was held that the comparatively short interval between these two dates was long enough to upset the presumption This decision was followed early in the present year by the Court of Appeal in Blatchford *v* Staddon and Founds where the interval was a good deal longer Blatchford was 53 years old, he had served in the navy until 1918 as a painter, and had contracted lead poisoning during that period of service the symptom of drop-wrist having manifested itself His subsequent employment as a painter under various employers was as follows He got work in 1920 and for the whole of 1923 and the first half of 1924 From July to mid-September he was out of work; from then till mid-October he had a job, finally, after ten days' unemployment, he got work with fresh employers (Messrs Staddon and Founds, the respondents in the action) from Oct 23rd, 1924, till Dec 12th, when he left because of illness On July 13th, 1925, a certifying surgeon certified that Blatchford was then suffering from lead poisoning This date was important because, under Section 8 (4) of the Act, unless the certifying surgeon can fix some date as that of the commencement of the disease, the date of disablement is to be construed as being the date when he gives the certificate The result was that there was a seven months' interval between Dec 12th, 1924, the date of employment, and July 13th, 1925, the date of disablement Because of this interval Blatchford lost the benefit of the presumption that his lead poisoning was due to the nature of his employment with Messrs Staddon and Founds Having lost on this point as a matter of law, he could still succeed as a matter of fact if he could show that his lead poisoning was caused, or aggravated, or accelerated by his employment under Messrs Staddon and Founds, but here the county court judge decided against him The Court of Appeal said there was evidence on which the county court judge could have come to the conclusion which he reached, though perhaps not every judge would have come to it in that particular set of circumstances The result was that Blatchford lost his application and lost his appeal He had had, like any other plaintiff, to establish his case to the satisfaction of the county court judge, and the case which he had had to establish was that his disease was due to the nature of his employment under the employers whom he was suing and not that it was due to similar employment under other employers

It was Blatchford's misfortune that his medical advisers were slow in diagnosing his disease as lead poisoning—an opinion which his medical and occupational history, if known, would have readily suggested His panel doctor diagnosed his illness in December, 1924, as "general debility affecting the heart," and, according to the statement made in court of the facts of the case, it was not till the following June that the doctor attributed the illness to lead poisoning The evidence of the effect of Blatchford's employment under the respondents was not put very high His panel doctor said no more than that if Blatchford had lead in his system before, his three months with the respondents might have aggravated it On the other hand one of the certifying surgeons said that if Blatchford had not been employed at all in that final November and December, "the symptoms would nevertheless have shown themselves and he would have been disabled as he now is"

Section 8 of the Workmen's Compensation Act of 1906 has, as Lord Justice Scrutton remarked, been said to be the most obscure and complicated section in the Act. It was repealed with the rest of that Act when the consolidating Workmen's Compensation Act was passed in 1925, but it reappears in that Act in all its original obscurity and complication. It may be that Parliament really meant that if the applicant is a painter and suffers from lead poisoning, and if painting may produce lead poisoning, and if the applicant was last employed by the respondents, then the respondents must pay him compensation (whether or not the last employment had anything to do with creating or accelerating his lead poisoning) and get what contribution they can from his previous employer. But the Court of Appeal had already decided in Dean's case in 1914 that this was at any rate not what Parliament said. If the Court of Appeal is wrong upon this point, it can be overruled only by taking the matter to the House of Lords.

Dangerous Drugs Acts Regulations: Non-disclosure of Concurrent Treatment

The Regulations made last July by the Home Office under the Dangerous Drugs Acts were designed to restrict inter alia the possession of drugs by a person who is obtaining prescriptions from several doctors concurrently. Prosecutions for infraction of these Regulations are already taking place. On Sept 2nd a defendant was charged at the Westminster police-court with having been in possession on August 23rd of a quantity of heroin prescribed by a doctor without making disclosure that he was being attended by other medical practitioners for the same class of treatment. The accused stated that he had acted in ignorance of the recent Regulations. He said he had been under treatment from an acting police doctor and that, in the absence of the latter, he consulted another practitioner. The charges apparently had reference also to a third doctor, but no medical evidence was given at this stage of the proceedings. The accused did not accept the suggestion of the prosecution that he should plead guilty and have the case dealt with summarily. He was, therefore, remanded and presumably the doctors concerned will be required to give evidence. The difficulty of professional conduct which arises under the new Regulations, when a doctor is required to appear against his own patient and to disclose details of treatment, was not unforeseen by the committee which investigated the methods of restricting the supply of drugs to addicts. The legal view (that a doctor if called upon by the court to give evidence of this nature, cannot refuse on the ground that the communication was privileged) is well known and can in this particular connexion be defended as being in the best interests of the patient. Presumably the offence, if an offence has been committed, is established if the medical practitioners formally identify their prescriptions and state (if such is the case) that they were not informed by the patient that he was under treatment by another doctor. The first point to be proved in the case is the possession of the drug, which is a matter of police evidence, the non-disclosure by patient to doctor is the next step. The police might in these cases be in a position to prove simultaneous supply and the fact that prescriptions had been obtained from more than one doctor at a time by calling as witnesses the persons who made up the prescriptions and handed the drugs over the counter. The chemist can say that he supplied the drug on the faith of the prescription but he cannot prove the signature or initials at the foot of a prescription, still less of course can he prove what the patient said or did not say to the doctor.

Prosecutions of this kind should be given the utmost publicity. The course of action which the Regulations require is one of which many defendants are likely to plead ignorance. Everyone according to the English legal principle, is supposed to know the law or to put the doctrine in a slightly milder form no one is entitled to plead ignorance of the law. Genuine ignorance of the new Regulations will be no defence to a charge thereunder though it may be an element tending to mitigate sentence.

METROPOLITAN ASYLUMS BOARD

MORE SAMPLES OF THE YEAR'S WORK

A LARGE number of scientific papers are included in the medical section of the annual report for 1925–26 of the Metropolitan Asylums Board, whose general scope has already been indicated.[1] Two of these papers were summarised in our issue of Sept 4th. These and the additional summaries which follow may serve to give an idea of the wide scope and progressive character of the Board's medical work.

HOSPITAL SCHOOLS

When day-schools for the physically defective were instituted it was apparent that the time-table and curriculum of the ordinary elementary school could not be used without modification. Special regulations were issued by the Board of Education which required that a school shall hold not less than 400 meetings in the year, each meeting lasting, as a rule, not more than two and a half hours, and providing for at least one and a half hours of secular instruction, apart from any time given to registration and recreation. The curriculum should include such "ordinary subjects" as English (speaking, reading, literature, writing, composition, and recitation), arithmetic, the knowledge of common things (nature study and observation lessons), history, geography, and singing. Not less than six hours of manual instruction must be given weekly. A grant, based on average attendance, is payable to managers of special schools not provided by authorities. The grant is £15 10*s* for each unit of average attendance at a certified boarding school, increased to £24 10*s*. if it is an open-air boarding school for children suffering from tuberculosis, debility or pre-tuberculous conditions.

In his report on teaching arrangements at hospital schools Dr W. T Gordon Pugh summarises the relevant regulations and compares the position of special and hospital schools. The regulations for special schools, he says, were applied to hospital schools without modification, save the insertion of a note that in schools where children were taught in bed the teaching must often be mainly individual in character, and the time-table should be planned to provide suitable occupation for sick children. In some instances little or no difficulty arises. This is so when the number of patients in a ward approximates to that usually accommodated in a school class-room; when, through a high average age of the children, interference with the teaching arrangements by quarantine is only very occasional. and when the medical or nursing treatment necessary during school hours is practically negligible. In other institutions on the contrary, it is impossible to conform with the regulations without undue expenditure. Difficulty occurs, for example, when the wards are small and the potential pupils in them considerably fewer than the number laid down for each teacher in the regulations. Again, if change of patients is relatively frequent, particularly if young children are received there is a greater liability to the introduction of infection with consequent quarantine. Also it is impossible in many cases to arrange for the full school hours when the hospital provides forms of treatment which can only be given adequately and economically in special departments at a distance from the wards—e g light treatment, medical electricity massage gymnastics application of radium and to a less extent attention by operating surgeon dentist oculist and splint maker. In large institutions the transport of patients for these purposes still further consumes time. Thus the more varied a hospital's activities the more difficult it is to conform in exact detail with regulations originally designed to suit a day-school.

Dr Pugh gives a short account of the arrangements at three full-time hospital schools—St Vincent's

---

[1] THE LANCET August 21st p 392

Orthopædic Hospital at Pinner, the Liverpool Hospital for Children at Leasowe, and Princess Mary's Hospital, Margate—and concludes with a description of the arrangements at Queen Mary's Hospital, of which he is medical superintendent Several years ago, he says, the subject of education received careful consideration at this general hospital for children, where the patients vary in age from a few months to 16 years, and where all the difficulties mentioned above as liable to occur in the case of full-time hospital schools actually prevail The accommodation of a ward is 16, and of a verandah 15, and that an attempt to teach the patients of both together was not a success If all the regulations of the Board of Education were to be carried out, it was estimated that at least 40 assistant teachers would be required to work wards and verandahs as separate units In view of the medical difficulties already referred to, it was felt that the great expenditure which this would entail was not justifiable Since the hospital and school are provided by a Poor-law authority, no grant is payable by the Board of Education The principal features of the scheme which was eventually approved are —

(*a*) A teacher takes two classes, each of which contains usually 12–16 pupils—i e , she takes the ward patients from 9 10 to 10 25 A M. and from 1 30 to 2 45 P M , and the verandah patients from 10 35 to 12 noon and 2 45 to 3 55 P M On alternate days this arrangement is reversed , this allows of the medical officers, masseuses, and sisters performing their duties without interfering at all with the teaching

(*b*) The Dalton system of teaching has been adopted in a modified form

(*c*) Nearly as much time is given to "ordinary subjects" as in the average cripples' school, for it is felt that these are of paramount importance An exception has been made in the case of singing, to which less time is allocated

(*d*) The time allowed for manual instruction has been reduced This, however, is to some extent compensated for by the smallness of the unit allowing more individual attention, besides which suitable children are encouraged to continue their handwork out of school hours As most of the pupils are in bed, and thus no real vocational handwork is possible, the time allowed for the latter at ordinary schools for physically defective children has not to be provided for

(*e*) Physical exercise is undertaken out of school hours by trained medical gymnasts, one of whom works in connexion with each block for recumbent patients, and by the attendants in the ambulant boys' wards

(*f*) Recreation and games do not occupy a place in the time-table, as it is not essential that the organisation of these should be undertaken by teachers The patients play ordinary games under the supervision of nurses or attendants , chess and draughts matches take place between the senior wards , there are troops of scouts and guides , entertainments in the form of concerts, plays, conjuring or cinema are given almost weekly during the autumn and winter months , and many of the patients, both recumbent and ambulant, attend cricket and lawn tennis matches during the summer There is a well-filled library Every ward, too, is fitted with an aerial, and two loud-speaker valve sets and a number of crystal sets are in use for the patients' entertainment , it is likely that the wireless will prove of considerable educational value to older children who stay for a long period in hospital

This scheme, says Dr Pugh, has allowed the recommendations of the Board of Education to be reasonably closely followed in essential subjects The teaching staff numbers 25, which would suffice at a day-school for the physically defective for an average attendance of 615 On an average there are 572 on the registers, and it is probable that, through the close individual attention which the smallness of the classes allows, and the regular attendance which is ensured, the general educational benefit received by these pupils at least equals that which is received by members of the larger classes of the ordinary day-school for the physically defective, notwithstanding the shorter duration of the meetings

The following table is given by Dr Pugh to show the hours per week allotted to the teaching of the secular subjects included in the curriculum of the Board of Education in the schools described In addition, time is allocated to scripture in each school —

Hours allotted to—	Two P D day schools		Hospital schools			
	A	B	St Vincent's	Liver pool	Princess Mary's	Queen Mary's
Ordinary subjects	8¼	10	8¼	10	9½	7¾
Handwork	6¼*	7½*	6	6½	6	3½
Physical exercises	2½	2	½	1	1	1¼

* Including craft work.

BALNEOTHERAPY FOR SURGICAL TUBERCULOSIS

An institution at Cannes where sea bathing had an important place in the treatment of children suffering from tuberculosis, joint and bone disease, was recently described in our columns,[1] and the advantages of balneotherapy are well recognised In this country, however, strong winds, rough seas and unsuitability of tides make organised and continuous bathing difficult for many children, and any bathing at all may be impracticable for those who are so crippled that they have to wear splints or jackets At Millfield, Rustington, Sussex, steps have been taken to institute a system of spraying the children with sea water while protected from the weather, and a description of the procedure is given by the visiting medical officer Dr C E Last Advantage was taken of the natural protection of a high hedge which separates the grounds of Millfield from the shore and which runs east and west Sheltered compartments were made on both sides of this hedge by using 6 feet high wattle fencing, the compartments on the north side being used during a southerly wind, and those on the south side when the wind is northerly A large raised tank has been erected close to the hedge, and this is filled with sea water in a few minutes by means of a hand-operated suction and force pump A two-way pipe leads out of the tank, one to the north side of the hedge and the other to the south, and a sprayer is attached to one of them according to which side is being used for operations According to their condition and capabilities, some of the children stand on wooden gratings for spraying, some sit, and others who normally wear splints or jackets are laid down on the beach After spraying, their feet are put in a trough of hot water and they are rubbed down and dressed before leaving the shelters Operations were begun on May 14th and discontinued on Oct 10th, 1925 , during this period over 2000 sprayings were recorded, and it will be interesting to hear more of the results of this experiment

TREATMENT OF RINGWORM

At the Goldie Leigh Homes at Abbey Wood the Board has departments for the treatment of skin diseases and of ringworm During 1925 372 cases of ringworm were admitted, all of which were caused by the common fungus of ringworm in children—the *Microsporon audouini*—except four in which the large-spored *Trichophyton endothrix* was responsible. In the great majority of cases the ringworm was entirely confined to the scalp In a few, patches were also present on the glabrous skin, and in several cases the glabrous skin alone was involved Dr J M H MacLeod, consultant physician for skin diseases, points out that a certain number of cases are still being admitted which have been under treatment for varying periods with irritating antiparasitic applications, which have produced so much inflammation that it has been necessary to delay the exposure to the X rays, sometimes for weeks, to enable the inflammation to subside under soothing treatment before applying the rays The number of such cases, however, is fewer than in the previous year and he hopes "that in time it will be realised that the only effective treatment for ringworm of the scalp is the X rays and that the less done to the cases before they are sent up to be rayed the better" The new apparatus and method of dosage, described in detail in the report for 1924, continue to give satisfactory results, and during the year there has been no case of X ray dermatitis, followed by permanent baldness, and only one case had to be partially re-rayed owing to insufficient depilation of the hair The couch for restraining refractory cases is also proving adequate, and has rendered it possible to deal with many cases which otherwise could not have been rayed safely It has also allowed of the treatment of a number of infants between 1 and 2 years of age without subsequent ill-effects

---

[1] THE LANCET, July 24th, p 213.

INDIA

(FROM OUR OWN CORRESPONDENT)

Tuberculosis in Calcutta

DURING 1924 the total number of deaths in Greater Calcutta was 30,822, which is equivalent to a mortality of nearly 30 per 1000 for the city This figure was slightly higher than in the previous year, and an unsatisfactory feature was a rise in the number of deaths from tuberculosis In Calcutta nearly all deaths from this disease are due to the pulmonary form, and the medical officer of health, Dr H M Crake, thinks that the rarity of surgical tuberculosis (some 6 per cent only of deaths from tubercle being due to this variety) is a consequence of the fact that Bengal cattle are rarely consumptive Tuberculosis in India appears to run a very rapid course, possibly for this reason signs of old infection are comparatively uncommon amongst Indians. The death-rate varies in different classes of the community Amongst Mahommedans in 1924 it was 3 per 1000, amongst Hindoos, 2 3, and amongst Indian Christians, who are few in number, it was 3 8 Far more striking, however, was the variation in mortality at different ages and in the two sexes For boys between 10 and 15 years old the death-rate was only 0 45 per 1000, and for girls 2 2, but after this age there was a remarkable rise in the female mortality From 15 to 20 years it was 6 6, and from 20 to 30 6 4 per 1000, and in the fourth quinquennium of life six times as many girls died of tuberculosis as boys Dr Crake attributes this high death-rate to the retention of the purdah system in the densely populated gulleys of a congested city, where it is difficult to secure absolute privacy without shutting out the light and air The zenana is usually in the inner part of the house, ill lighted and ill ventilated, but effectually screened from observation, and in these unhealthy surroundings girls and young women are subjected, whilst still immature, to repeated pregnancies and long periods of lactation Probably there are 10,000 cases of tuberculosis in Calcutta, and hardly any precautions are taken against the spread of infection Thousands of consumptives are constantly spitting all over the place, and those who have to carry out the anti-tuberculosis scheme now approved by the Health Committee have a big task before them

The Reorganisation of Public Health Activities in Bombay

The report of a committee appointed by the Government of Bombay to consider the question of the reorganisation of the Public Health Department and the transfer of control of medical, vaccination, and veterinary staffs to district local boards, has been issued They recommend that the control of the existing staff of the subordinate medical service should remain as at present, but that all new appointments should be left entirely to local boards, who should receive grants-in-aid to enable them to take over this responsibility The result of the recommendation would be the ultimate assumption of control of the whole subordinate medical staff by the district local boards As to recruitment, the committee hold that as vacancies occur they should be filled from doctors registered by the Bombay Medical Council, subject to the approval of the Surgeon-General, at a minimum salary of 50 rupees per mensem Under the scheme outlined the civil surgeon would continue to inspect grant-in-aid dispensaries and his advice on technical and professional matters would be accepted by the local boards The transfer of control of the veterinary staff is not recommended but it is suggested that Government grants for the maintenance of veterinary dispensaries should be increased As to the vaccination staff, their future is considered in connexion with the desirability of reorganising the public health department It is the duty of district local boards to provide for medical relief and to undertake measures for the health, safety, and convenience of the public, and it is desirable that they should take in hand the sanitation of the districts The committee consider it necessary that these bodies should appoint district health officers with sufficient establishment under them They recommend that a district health staff should be appointed consisting of a health officer, inspectors, and sub-inspectors for each district according to its size and population, and make detailed suggestions as to the proportion of the cost of this scheme that should be borne by the Government They consider it necessary to retain the existing officers of the Public Health Department for advising and guiding the new health staff appointed by the boards and recommend that the officers of the Public Health Department should continue to exercise their present powers of professional inspection and advice They are of opinion that the appointment of the health staff by local boards should be made optional They have also considered the question of the transfer of the function of maintaining vital statistics to district local boards, and consider it desirable that after the boards have appointed district health officers they should have control over the maintenance of vital statistics

Vaccination in Bengal.

In the year 1924–25 over 2,661,000 persons were vaccinated in Bengal against small-pox The primary vaccinations increased by more than 4 per cent and revaccinations by 115 per cent, the average number of operations performed by each vaccinator in rural and municipal areas being 1492 Some 293,000 vaccinations were done in Calcutta The report presented by Major A D Stewart records that the number of infants successfully vaccinated throughout the Presidency per 1000 of the population was 275 as compared with 262 in the previous year Of the total of about 1,112 000 infants available for vaccination over 300,000 were dealt with and in some districts half the available infants were thus protected

LONDON HOMŒOPATHIC HOSPITAL.—This hospital, which had been closed for alterations and redecorations, was reopened on Sept 1st The dispensary has been enlarged and re-equipped and a sunlight lamp has been installed in the Mechano-Therapy Department The new works have cost £10,000, most of which has yet to be raised

ENLARGEMENT OF CHARING CROSS HOSPITAL.—The recent purchase of the adjoining premises of the Royal Westminster Ophthalmic Hospital will involve the largest extension scheme in the history of Charing Cross Hospital The institution has long been so badly cramped for room that many patients have had to be refused because there were no available beds and no space for increasing the number An additional floor was added as a children's department which reached the permissible limits of height, while the basement and sub-basement are already utilised The Ophthalmic Hospital building is not to be rebuilt, but will be so altered and adapted that it will provide a larger nose, throat, and ear clinic, more beds for heart cases, an extensive department for skin troubles, and a children's gymnasium and permit of other developments The cost of purchase and conversion will be £100 000 and a special appeal for that amount has been issued The hospital has no debt and has paid its way since 1915

THE MEDICAL REGISTER UNTRACEABLE PRACTITIONERS IN 1926

WE are requested by the Registrar of the General Medical Council to publish the following list of medical practitioners who have not replied to his inquiries as to the accuracy of their addresses Anyone who finds his or her name included in this list should communicate immediately with the Registrar of the General Medical Council, 44, Hallam-street, Portland-place, London, W 1, otherwise the name will be omitted from the next issue of the Medical Register

Achpise Alexander, L C P & S, 1923
Alcorn, Robert George, L R C S, 1874
Anderson, George Marshall, M B, 1925
Anklesaria, Nadirsha D, M B, 1921
Annecke, Siegfried, M R C S, 1921
Anugraham, Anandanada, L M S, 1919
Armstrong, Arthur C, *M C*, M C P & S, 1918
Arnason, Jon S, M C P & S, 1919
Arthur, Wilfrid S, M C P & S 1922
Aucoin, Edmond L, M D, 1920
Auger, Emile L, M D, 1921
Azoulay, Leon, M C P & S, 1924

Backhouse, Thomas C, M B, 1920
Bacot, William R M R C S, 1887
Bal, Jatindra N, L M S, 1922
Balendra, Wytilingam, L M S, 1922
Banerjee, Satis C, L M S, 1922
Bardi, Dosabhai R., L M S, 1905
Basu, Bijitendra, L M S, 1924
Batra, Harnand L, M B, 1924
Bawden, John Clemence, L S A, 1894
Baxter, Robert H, M B, 1923
Beamish, James Aylmer, M B, 1907
Bell, Christopher H C, M C P & S, 1919
Bennett, Louis A, M B, 1921
Benzimra, Walter J, M D, 1920
Bessette, Ubald, M D, 1921
Betzner, Norman E, M C P & S, 1917
Bewes, Edward A, L R C P, 1882
Black, Howard, M C P & S, 1919
Blakey, Leonard C, M C P & S, 1923
Blaze, John R, L M S, 1924
Borg, Paul, M D, 1905
Borrie, William G, M B, 1920
Bourdon, Charles A, M D, 1920
Bourget, Clermont, M D, 1920
Bourke, John, M B, 1923
Bowman, George M, M C P & S, 1924
Brachman, David Simon, M R C S, 1916
Brewer, Joseph, B C, 1914
Brisebois, Maxime, M D, 1921
Brown William H, M R C S, 1883
Bullock Arthur E, *M C*, M B, 1888
Bunn, Charles R, M C P & S, 1919
Burns, Charles W, M C P & S, 1920
Butters, Thomas L, M C P & S, 1917

Calnek, Stanley H, L M S, 1921
Cameron, Charles William M, M B, 1923
Camilleri, Victor, M D, 1914
Campbell William, M C P & S, 1922
Carroll, Charles R, L M S, 1906
Carroll, James Francis, M B, 1893
Carruthers, Bruce M, M B, 1915
Casling, Paul V, L M S S A, 1924
Cattell, Herbert W J J G, L R C P & S, 1897
Cezair, Hubert E C, L R C P & S, 1921
Chagnon Deodatus T, M D, 1921
Chakravarti, Devendra N M B, 1923
Chapman, Clement L, M B, 1921
Checchi Cyril, M B, 1915
Clark, Warren F, M C P & S, 1921
Clarke, Arthur, M R C S, 1862
Clarke, John M, M B, 1921
Clegg, Richard L R C P, 1881
Closs James R, M B 1910
Clowes, Arthur L, M B, 1924
Cohen, Cedric K, M B, 1915
Cohen, Reuben M C P & S, 1924
Collins, Ralph B, M C P & S, 1921
Colquhoun, Keith G, M B, 1915
Cooper, Meherjibhoy B, L M S, 1910
Corker, Joseph M B 1904
Cox Stafford M, L R C P, 1887
Crowe, Loren L M C P & S, 1923
Cumming, Patrick G, M R C S, 1921

Dandurand Jeremie N E, M D 1924
Daniel, William P T, L S A, 1890
Daruvala, Phiroze P, L M S 1924
Dasgupta Arunkumar M B, 1921
Davies, Henry A B, M R C S, 1884
Davis, Robert Evans Stuart M B, 1881
Day, Oswald J, M C P & S 1921
Delage, Charles E M D, 1920
De Ryck, Frans, M D, 1915
Desrochers, Antonio L M S 1922
Desrosiers, Willie, M D 1921
Dey, Joseph C, M B, 1912
D'Monte, Rose C, L M S, 1922
Dobrashian, George R, M R C S, 1913
Donaldson Sim, Ernest A, M R C S, 1901
Donevan, Frederick J, M C P & S, 1919
Drennan, Ralph M, M B, 1924
Drew, Thomas M, M B 1905
Duff, Thomas A J, M C P & S, 1919
Dunning, Charles S, M C P & S, 1920
Dyck, George, M D 1919
Dymond, Miss Bertha, M C P & S, 1919

Edmunds, Winifred P, M R C S, 1924
Elliott, Thomas W E, M B, 1915
Etsell, Thomas E, M C P & S, 1920

Fairfax, Edward W, M B, 1901
Faraci, Giuseppe, M D, 1908
Faucher, François, M D, 1920
Ferguson, George Gunnis, M B, 1886
Firth, Ian G M, M B, 1915
Fitzgerald, Gerald P M B, 1920
Fitzgerald, John C, L R C P & S, 1924
Flanagan, Patrick J, L R C P & S, 1890
Flecker, Hugo, M B, 1912
Flood, Patrick J L R C P & S, 1917
Fowler, Cosmo W, M B, 1914
Franklands, Herbert W, M B, 1914
Freele, Lloyd W M, M C P & S, 1919
Furey, Nicholson W, M C P & S, 1919
Furness, Arthur W, M D, 1922

Gaden, Keith B, M B, 1924
Gallacher, Michael J, M B, 1915
Gangriwala, Najmuddin K, M B, 1923
Gaudet Camille E, L M S, 1914
Gaulin, Eugene M D, 1922
Gault, Estelle R, M B, 1921
Genest, Laurent W, L C P & S, 1923
Ghows, Ismail M, L M S, 1918
Giblin, William E, M B, 1915
Giffard, Henry E, M R C S, 1877
Giglioli, Guido Y, M D 1904
Gillam, George J, M C P & S, 1922
Glassford, Eric MacA G, M B, 1921
Goode, Christina L, M B, 1901
Goode, George Ernest M R C S, 1900
Goodridge Leslie A, L M S, 1922
Gopalan, Vaidhyanatha, L M S, 1920
Gore, Dinanath N, M B, 1920
Graham, John A, M C P & S, 1922
Grant, Harry G, M D, 1913
Greco, Vincenzo, M D, 1921
Greene, Arthur P, L R C S 1872
Greenidge, Hewburn N, M C P & S, 1921
Grey, Harry, M C P & S, 1916
Grier, Reginald T, M C P & S, 1920
Grieve, Herbert R R, M B, 1923
Grimmett, Roger S, M C P & S, 1924
Grimoldby, James, L M S S A 1908
Guelpa, Guglielmo G, M D 1921
Gunne, Livingston G, M C P & S, 1916
Gupta, Sukumar, M B, 1922

Hakim Bakhtyar R R, M B 1923
Hall, Hector C M C P & S 1920
Hamilton, William, M D, 1877
Hansman, Frank S, M B, 1922
Haq, Anwarul, M B, 1921
Harper, James Watkins, M C P & S, 1918
Harrison Herbert M, M R C S 1895
Harvey, Miln C, M C P & S, 1923
Haughton, Edward, M R C S, 1858
Heaton, Arthur F M R C S 1892
Henderson, Randolph R, L M S, 1924
Henderson, Wm A L H, M B, 1915
Hensley Philip H, L S A, 1887
Heringer, Wilfrid J, M C P & S, 1918
Hewson, Robert D, M C P & S 1920
Higgins, Thomas F, L R C P & S, 1914
Hislop James G M B 1921
Ho Asjoe, Salomon, L R C P & S 1922
Hodgson, Harold W, *M C*, M R C S, 1900
Hope, Percy Lake M R C S 1899
Hopwood Cecil H, M B, 1902
Hoyten William J M R C S 1894
Humphry, Ernest, L S A 1885
Hunter, Alexander, O B E, L R C S, 1863
Hutchison, Keith O, M C P & S, 1924

Ito, Koken, M B, 1923

Jackson, Frederic S, M D, 1910
Jackson, Joseph L, M C P & S, 1924
Jacobs, Charles, M D, 1915
Jinadasa M, L M S, 1910
Jones, William E, M C P & S, 1919
Josa, Giam B, M D, 1915
Joshi, Manchershah F, M B, 1916
Joval, Joseph E I, M D, 1921
Judson, Frank McD, M C P & S, 1924

Kacker, Pooran C, M B, 1923
Kenealy, Arabella M, L R C P, 1883
Kennedy, Basil C, M B, 1919
Kenny, Maurice A, M C P & S, 1921
Kent, Hugh Braund, M R C S, 1908
Kerr, Frank R, D S O, M B, 1914
Khew, Tham Y, L M S, 1919
Kines, Roy M, M C P & S, 1923
Kirby, Rowland A, M R C S 1893
Kirkham, Frederick R, M C P & S, 1920
Kirti, Kanti C, L M S, 1921
Kirwan, Patrick M, M D, 1920
Kiteley, James A, M D, 1917
Klein, Keith, M B, 1924
Knight, Glen A, M B, 1897

Lane, Muriel S, M B, 1924
Lanzon, Edward, M D, 1916
Lavoie, Francois M, M C P & S, 1921
Lawson, Elston H, M C P & S, 1919
Leech, John Richard, M D, 1873
Lendon, Guy A, M B, 1920
Ligoure, Clement C, L M S, 1919
Locke, Frederick D, M C P & S, 1920
Loh, Poon L, L M S, 1918
Lucas, Melville F, M C P & S, 1920

MacAvelia, Millard T, M C P & S, 1920
McBride, Clifford D, M C P & S, 1923
McCaffrey, Ernest M, M B, 1919
McCallum, Donald, M C P & S, 1919
McCarville, Charles R., L M S, 1921
McColl, Neil, M B, 1919
McConnell, William F, M B, 1920
Macdonald, James O, M B, 1920
MacDonald, William M C, M B, 1923
McDonnell, Alexander J V, M R C S, 1915
MacDougall, Dan, M C P & S, 1920
McElwee, Daniel, M B, 1920
McFadyen, Oscar J, M D, 1922
Macfarlane, Harold G, M C P & S, 1920
McIntyre, Archibald J, M C P & S, 1919
MacKay, Jean C, M D, 1917
McKay, Joseph W, L M S, 1920
McKenzie, Hector, M C P & S, 1920
Mackenzie, John, M B, 1898
Mackenzie, Samuel R, M D, 1912
McKenzie, William G, M C P & S, 1921
Mackie, John P, M C P & S, 1922
McKie, Joseph G, M C P & S, 1920
MacKinnon, Albert H, L M S, 1919
MacKinnon, Alexander G, M C P & S, 1919
MacLean, John, M C P & S, 1916
McLeod, John H, M C P & S, 1921
MacMurchy, John N, M C P & S, 1924
McMurtry, Gilbert J M D, 1923
Maddison, Jessie C, M B, 1902
Magnan, Louis A, M D, 1922
Makuda Ichiro, M D, 1922
Malfatti, Hector, M D, 1903
Marcellus, Eathen H, M C P & S, 1918
Marchant, Gladys H, M B, 1921
Marshall, William A, M D, 1920
Martin, Charles A, M C P & S, 1923
Martin, Stanley H, L M S, 1924
Mathers, James A, M C P & S, 1919
Matheson, Henry A, M C P & S, 1919
Matheson James R, M C P & S, 1920
Mattice, Richard I, L R C P, 1902
Mehta, Amolak R, M B, 1921
Mehta Daulat R M B, 1921
Mendelsohn Harris *M C* M B, 1919
Menon Tottakkat K, M B 1912
Meredith, William R L R C P & S 1901
Merrick Charles G M C P & S, 1924
Miller, Jean C, M D, 1924
Mills, Cecil V, M C P & S, 1919
Mills Edward S, M C P & S 1924
Monfette, Georges L M S, 1914
Monteiro, Valery V, M B 1921
Moon, Harold R, M C P & S 1921
Morrison, George W, L M S 1921
Murdoch, John A M L M S 1912
Murtagh, Andrew P, L M S, 1917

Napier, Lionel F, M R C S 1922
Nasmyth Roy D, M C P & S, 1920
Navar Des R M B 1924
Neal, Leo A, M B, 1922
Neilson, Robert M M C P & S 1916
Nelson, William T M B 1922
Newton Brady Arthur, M B 1914
Nye, Leslie J J, M B, 1915

O'Callaghan Herbert M B 1913
O'Connell, John F, L R C P & S 1922
O'Connor, William P, M R C S, 1886
Olaribigbe, Alumu O, L R C P & S, 1915

Paddison, Edmund H, M R C S, 1878
Page, Frederick W T, M R C S, 1897
Page, William R, M B, 1921
Pagonis, Peter J, L S A, 1903
Pain, Francis, M R C S, 1886
Palmer, Arthur E A, M B, 1912
Pandit, Sudershun H L M S, 1924
Panikker, Aerath N N, M R C S, 1919
Papenfus, Edmund J, M R C S, 1918
Paradis, Charles R, M C P & S, 1922
Parbury Frederick D, M R C S, 1902
Parry, Claude A, L R C P & S, 1924
Partridge, Arthur J, M B, 1892
Patrick, Charles A, M B, 1879
Patterson William John, M B, 1904
Patton, William, M B, 1904
Paul, Gilbert E, M R C S, 1916
Peatman, William Z, M C P & S, 1921
Pellew, Leonard J, M B, 1915
Pennington, Louise A, L M S, 1916
Pepler, William H, L R C P, 1887
Peregrine, Edgar F. J, M.R.C S, 1920
Perera, Julius Ernest, M B, 1903
Perkins, Herbert F, M B, 1902
Perras, Joseph H F, M D, 1919.
Perron, Joseph M, M D, 1920
Perry, Sir Alan, L S A, 1883
Petherbridge, Walter C, M B, 1924
Petrie, Frederick McG, M C P & S, 1919
Pfeiffer, Gordon H, M B, 1921
Phaneuf, Joseph E, M D, 1920
Phillippe, Clement, M D, 1918
Phillips, John W G, M R C S 1916
Pickup, William A M D 1921
Pienaar, Frederick W, M B, 1920
Pigott, Louis M, M B, 1915
Pinto, Joseph O, L R C P, 1887
Piper, Francis P, M R C S, 1893
Piplani, Jagan N M B, 1924
Pippy, Olive, L M S, 1919
Pittar, Rowland J G A M B, 1922
Pitts, Arthur G, M R C S, 1901
Plouffe Adrien F, M D 1920
Pollock, John H, M B, 1913
Pollock, William M B 1879
Pooler, Edward L, M D, 1885
Pope, Frederick S, M R C S, 1916
Pott, Francis H, M R C S, 1885
Powell, Fred H, L R C P 1886
Power, John W L K Q C P, 1886
Power, Patrick J, L R C S 1887
Prickett, Marmaduke M R C S, 1878
Proctor, John S L R C P & S, 1891
Proksch, Louis L, M B 1895
Proujansky, Joseph, M R C S, 1920
Pullen, Ralph S McD M R C S 1893
Pulvertaft, Robert J V, M R C S, 1924
Puri, Jagan N, M R C S, 1916
Purnell, Kenneth C *M C* M B, 1919
Purvis, George S, M C P & S, 1920

Quigley, Joseph P, M R C S, 1912

Radloff, Theodor, M B, 1920
Radmore, George R, L S A, 1885
Rae David E, M B 1908
Rahim, Syed A, M B 1920
Rajab, Kandappah, L M S 1922
Ram, Tirath M B 1921
Raman Pillai, Kouikal P M B 1921
Rao Srinivas Ram, L A H 1912
Rao Stephen R, L M S 1910
Raphael Howard M M C P & S, 1920
Rasul Sheikh G, L R C P, 1913
Rau Bantwal N, M R C S, 1921
Rawlinson, Rupert L B C, 1917
Ray, Hemanta K L M S, 1921
Ray, William, M B 1912
Raymond Arthur W, *M C*, M B, 1915
Reddick Ward A, M C P & S, 1919
Rees, Rice L S.A 1902
Reid Ferdinand T L M S 1919
Reitz, Francis W, M R.C S, 1918
Rellum Albert R L R C P & S 1921
Renaud, Joseph H M C P & S 1924
Rennie Robert, M B 1900
Resnick Mildred L M S 1921
Reubens Adeline M B 1920
Rhodes William F M R C S, 1909
Rice, Wm A M B 1900
Rich Evelyn A, L R C P 1880
Richards Eulalia S L R C P & S, 1904
Richards Franklin C, L R C P & S 1904
Richer Fernande, M C P & S 1924
Riddell Clarence Eric M B 1923
Rider Frederick K L S A 1892
Ridout Constance E M R C S 1922
Riordan William F L R C S 1864
Robb Robert McN, M B 1906
Roberts Charles H M R C S 1889
Roberts Robert T F D M B 1917
Robertson Edmund B de B L F P S, 1877

Robertson, Robert, M B, 1888
Robins, Henry C, M B, 1914
Robinson, Charles St H, L R C P, 1896
Robinson, George S M R C S, 1879
Rochet, Paul G, M D, 1915
Rochfort-Brown Herbert, M R C S, 1891
Rogers, George F, M B, 1893
Rogers, George P L R C S, 1879
Rogers, William H L F P S, 1862
Romeo, Natale, M D, 1908
Rooney, Patrick J, L R C P & S, 1906
Rose-Innes, Arthur, M R C S, 1917
Roselli, Joseph, M D, 1920
Roseman, Hyman S M B, 1923
Rosenau, Albert, L R C P, 1901.
Ross, Alexander, M R C S, 1904
Ross, Donald M, L R C P, 1903
Ross, Hervey R, M C P & S, 1917
Rossiter, Harold T, M R C S, 1908
Rourke, Joseph M, M B 1920
Row, Frederick E, M R C S, 1881
Rowell, George B, M R C S, 1887
Rowlands, Richard P, M R C S, 1906
Rowthorn, William Henry, L R C P & S, 1896
Rusk, John, M B, 1894
Russell, John, B Ch, 1923
Rutherfoord, Henry T, M B, 1885
Rutnam, Alan R M R C S, 1922
Ryan, Timothy, J P, M B, 1923
Ryerson, George A S, L R C P & S, 1920
Rygate, Charles D H, M R C S, 1889

Sabastian, Thiruchel van, L R C P, 1910
Sakai Michio, M B, 1924
Salunke, Lakshman S, L M S, 1922
Samarasinghe, Andrew M, L R C P & S, 1922
Sampson, Francis C, L R C S, 1863
Sanderson, Arthur F, M R C S, 1909
Sanderson, John M L S A, 1898
Sanderson-Wells, Thomas H, M B E, M R C S, 1895
Sangster, John I, M R C S, 1876
Saunders, Douglas H, M B, 1922
Saundry, James B, M R C S 1868
Sawkins Frederick J T, M B, 1914
Sayers, Max, M B, 1922
Scannell, William G, M B, 1921
Schapiroff, Abraham, M R C S, 1905
Schneider Frank E E, M R C S, 1924
Schorn Alexander O, M B 1892
Scott, David E, M C P & S, 1916
Sears, Harley A, M C P & S, 1921
Seelenmeyer, Adolphe F, L R C P, 1885
Selim, Abd-el-Khalek, M R C S, 1914
Sen (Miss), Jamini, L M S, 1911
Sen, Parimal C, L M S, 1923
Sen, Praphulla C, M B, 1924
Sen Satindrakumar M B 1920
Sexton, Joseph P, L R C P & S, 1892
Seymour, John N, M B, 1882
Seymour, Maurice M, M C P & S, 1921
Shackleton, Ronald G M B, 1924
Shah, Sayyad H U, M B, 1922
Shakur, Abdus, L R C P, 1921.
Shalaby, Kamel I M B, 1917
Shannon James W, M B, 1890
Sharp, Walter A R, M B, 1905
Sharpe, Frederick G L R C P & S, 1901
Shaw, Alfred E M R C S, 1892
Shaw, David le B L M S, 1916
Shaw, John H, M B, 1922
Shaw, Noel F, M R C S, 1922
Sheldon, Thomas W, M R C S 1915
Shenstone Norman S, L M S S A, 1909
Sheridan, John J M B, 1921
Sherwin, John A H, M B, 1911
Shimada Dennosuke M B 1922
Shone, Herbert R, M R C S, 1924
Shorter, Herbert L A, M B 1914
Shroff, Dadabhoy S, L R C P 1882
Shubinsky Abraham, M C P & S, 1923
Simpson, Jenny H A, M B 1921
Sims, George H, M R C S 1918
Simson, Colin C, *M C* M R C S, 1898
Singh, Jaimal M B 1922
Singh, Jamit, M S, 1921
Singleton Francis E C L R C P, 1875
Sisk, Maurice, M B, 1895
Skinner, Robert A, M R C S 1873
Smartt, The Hon Sir Thomas W, K C M G L R C S 1878
Smeeth Henry G, M B 1887
Smith, Arthur C M R C S 1916
Smith, Arthur H M R C S 1891
Smith, Arthur L M D 1915
Smith, Edward J L S A 1883
Smith (Mrs) Frances A D M M B, 1899
Smith, George L, L M S 1919
Smith, Gerald K M B, 1911
Smith Henry C M B 1924
Smith Herbert M R C S 1881
Smith Issachar R M R C S, 1914
Smith James M B 1911
Smith John Edgar M B 1915
Smith John Kenneth M B 1914
Smith Neville H M R C S, 1917

Smith, Newman, L R C P, 1886
Smith, Wilburn, M R C S 1911
Smuts, Phineas A, M R C S, 1917
Smyth, Joseph, M D, 1870
Soares, Alexander D, M B 1919
Somers, James L E, L R C S, 1883
Sommerville, Andrew N, M C P & S, 1919
Sorley, John, M B, 1881
Spence, Daniel B, L S A, 1893
Spence, William A C, L R C P & S, 1900
Springthorpe, Annis G H, M B, 1924
Spurgin, Thomas, M R C S, 1879
Srivastave, Ram S M B, 1921
Stack, Mary J, M B, 1922
Stallard, Philip L, M R C S, 1907
Stanwell, St John, M B, 1893
Staples, Samuel J, M C P & S, 1919
State, Joseph E, M C P & S, 1922
Stephen, Clive T, M B, 1915
Stephen, Leslie D, M B, 1909
Stephens, Frederick G N, M B, 1910
Stephens, Henry J, M C P & S, 1920
Stephens, James B, M R C S, 1903
Stevenson, Sir Edmond S, M R C S, 1873
Stewart, James, L R C S, 1864
Stewart, William J, M B, 1913
Sthamer, Eduard F A, L R.C P, 1903
Stocker, Charles J, M R C S, 1875
Stout, Thomas D M, D S O, O B E, M R.C S, 1910
Stuart, William W, L R C P & S, 1904
Style, Robert G, M R C S, 1882
Styles, William V T, M R C S, 1914
Sutherland, Robert K S M B, 1912
Sutton, Mordaunt G, M B, 1919
Suzor, Jean R, M B, 1884
Sweeney, Hugh Vincent, M B, 1921
Symons, Henry J H, *M C*, M R C S, 1916

Taaffe, John F H, L S A., 1883
Tabone, Leti, M D, 1924
Tallack, John R A, M B, 1923
Tallarico, Giuseppe, M D, 1911
Tambe, Gangadhar R, M B, 1914
Taylor, Adrian H, L R C P & S, 1873
Taylor, Reginald M R C S, 1870
Taylor, William B B, M R C S, 1900
Taylor, William K, L A H, 1887
Tebbutt, Arthur H, D S O, M B, 1912
Ternan, William A P, L R C P & S, 1889
Thapar, Kripal S, M B 1921
Thavara, Mom C M R C S, 1914
Thaw, Alfred B, M B, 1917
Theunissen, Eugene B M B, 1918
Thomas, Frederick S, M B, 1922
Thomas, Frederick V, M B, 1895
Thompson, Eustace E, M C P & S, 1924.
Thompson, George M, M D, 1882
Thomson (Mrs), Margaret H T, L.S A, 1900
Thornton, Peter M B 1890
Thorp Arthur E, M R C S, 1894
Tickell, Henry M, M.R C S, 1893
Tidswell, Frank M B 1895
Tiernan, John, L F P S, 1883
Tilak, Hari V, M B, 1920
Titterton Herbert C, L A H, 1902
Tiwari, Charan D, M B, 1921
Tiwary, Sheo N, M R C S, 1912
Tolputt, Percy T L R C P & S, 1892
Toombs Herbert G, M R C S, 1894
Trackman, Joseph A M C P & S, 1924
Tremble, George E M C P & S, 1924
Tremble, John M B 1911
Trist John R R, *M C* L R C P, 1905
Tucker, Clifton E M B 1915
Turrill, Vernon le V, M C P & S, 1917

Ullah, Mohammed S, *M C*, M B, 1922

Vakil, Ardishir J L R C P & S, 1921.
Vakil Burjor P, M B 1919
Valerio, Ismael M R C S, 1906
Van Der Merwe Henry B M 19
Van Neuten, Gustave L M D, 1920
Veale Doris L, M R C S 1921
Veitch, John O M B 1895
Vellema Douwe M, M B 1922
Vercueil Leon O M B 1922
Verge Cuthbert A M B 1912
Vickerman Philip S O B E., M B, 1905
Vickers, William H P M B, 1890
Victory, Jose M R C S 1917
Vincent, George F L R C P, 1884
Vorster, Alewyn J M B 1919
Vosper, Cecil M R C S 1905

Wagner Philipp F H M B 1923
Wales John F, M D 1876
Walker Dallas B M B 1919
Walker John L M R C S, 1907

[Continued at foot of next page.

Public Health Services.

Safeguarding of Certification Forms

In a circular addressed to insurance committees the Minister of Health states that cases still come to light in which sickness or disablement benefit has been fraudulently obtained by means of forged medical certificates, the forms having been stolen from practitioners' surgeries Practitioners are reminded that books of certificate forms should be kept under conditions which will prevent their falling into the hands of unauthorised persons A warning to this effect is to be printed on the covers of the first batch of certificate books issued to practitioners when they first join the medical list, and on the first batch of books issued to all insurance practitioners at the commencement of each year

REPORTS OF MEDICAL OFFICERS OF HEALTH

The following are some of the statistics for 1925 of six county boroughs Three of them appear in a list in the Brighton report of the 11 densely populated towns of England—viz , West Ham with a density of 64 per acre, Brighton with 53 (without taking the foreshore into account), and East Ham with 43

Name of county borough	Estimated mid-year population (R G)	Birth rate	Death rates per 1000 of the population					Death-rates per 1000 births	
			All causes	Tuberculosis	Cancer	Resp diseases with influenza	Heart disease	Infant mortality	Maternal mort from childbirth
West Ham	318,500	22 0	10 7	1 27	1 12	2 4	1 3	66	2 8
East Ham	147,200	17 3	10 2*	1 07	1 36	2 0	1 4	53	3 1
Brighton	137,800	15 7	13 4†	1 39	1 72	2 5	1 8	59	3 7
Bournemouth	85,840	13 5	13 8	1 23	2 08	1 9	2 5	53	4 3
Preston	122,900	17 7	14 5	1 19	1 21	3 2	1 4	131	6 0
Grimsby	86,810	20 6	11 0	1 10	1 15	2 1	1 3	71	6 7

* Standardised death-rate 10 6 † Standardised death-rate 11 0

West Ham

Dr F Garland Collins reports that during the last five years coordination has been established between his department and the ancillary health services in the district and contiguous areas, also a further linking up of maternity and child welfare, tuberculosis and school medical services He considers that there is one weak link in the chain—namely, the lack of cooperation with the factory medical service In order to cope with the new legislation respecting milk and meat, two additional officers have been appointed, a veterinary surgeon and a meat inspector A sanatorium for children suffering from pulmonary tuberculosis has been a long-felt need, and it is proposed to erect accommodation for 40 children on a site on Langdon Hills belonging to the corporation Other proposals are an open-air swimming bath in West Ham Park and a colony for 500 mental defectives at Ockenden Dagenham Small-pox Hospital is generally in use as a tuberculosis sanatorium It had to be cleared in 1920 in order to make room for a small number of small-pox cases In 1922 the Council arranged with the board of the Orsett Hospital to admit up to 20 cases of small-pox, so as to enable Dagenham Hospital to be in continuous use for tuberculosis, except in the event of a considerable small-pox outbreak Much building is going on in Dagenham, and its population has increased during the last 5 years from 9127 to 38,000 During 1925 a residential open-air school to accommodate 80 boys was opened at Fyfield, near Ongar, Essex, and the children sent to it have derived remarkable benefit, a day open-air school for 60 girls exists inside the borough A large shortage of houses still prevails, and a housing scheme for the erection of 152 four-storied tenement flats is now before the Ministry From 1921 to 1925 the increase of population was 16,140, and the new houses erected numbered only 249 Ninety-six samples of milk were examined bacteriologically, of which 13 contained acid-fast bacilli indistinguishable from the tubercle bacillus It is stated that "appropriate action" was taken in each case Apparently the biological test was not used, since "no case of tuberculous cattle came to the notice of the sanitary authority during the year" The prevalence of diphtheria remains high The fact that it is not wise to delay giving antitoxin until the result of the bacteriological test is known was demonstrated in two of the fatal cases During the latter part of the year some 15 cases of pemphigus neonatorum occurred Six of the cases were born in Queen Mary's Hospital, seven were attended by the Plaistow Maternity Charity, and two were in the practice of a midwife The onset occurred between the fifth and tenth day after birth, with an inflamed lozenge-shaped area in varying situations The area soon became a blister, which was followed in some cases by many others Two of the 15 cases died, the eruption having spread over the whole body and become pustulate No source of infection was established

East Ham

Dr W Benton expresses his regret that the Council have not increased the staff of health visitors, because it is not now possible to superintend the children between infancy and the school age The housing shortage is "the one great outstanding defect" of the borough In the school report a reference is made to the need for improved dental clinic accommodation and for an increased staff Mr C S Neame, the school dentist, points out that the work is being much hampered, and that according to the Board of Education standard there should be at

The Medical Register Untraceable Practitioners in 1926

(Continued from previous page)

Walker, John N , M R C S , 1897
Walker, John R., M R C S , 1871
Wall, Alfred E , M B , 1923
Wallace, Daisy C , L M S S A , 1923
Wallace Douglas, M C P & S , 1917
Walsh, Frank B , M C P & S , 1921
Walsh, John J , L R C P & S , 1914
Walsh, Michael V , L R C P & S , 1913
Walsh, Vincent G , M B , 1921
Ward, Mary D G , M B , 1920
Waters, Robert, C B , M D , 1859
Watson, Harry J , M C P & S , 1920
Watson, John, M R C S , 1862
Watson (Mrs), Mary O M B , 1915
Watson, Samuel E , M B , 1911
Watt, James, M B , 1895
Weatherhead, John F , L S A , 1870
Webb, John N , M B , 1919
Webster, Leonard C , L R C P & S , 1906
Weddick, John, L R C P & S , 1874
Weinberg, Solomon J , L R C P , 1903
Weir, Crosbie, L , Med L S , 1916
Weisberg, Arnold, M B , 1923
Welply, Alfred, M B , 1900
West, David, M B , 1924
West (Mrs), Joan, M R C S , 1917
Wheeler, Frederic F , M R C S , 1919
White, Syer B , M B , 1912
Whyte, Frederick H M B , 1923
Wicht, Johan F , M B , 1920
Wijeyeratne, James De S M R C S , 1924
Wilde, Alfred N , M R C S , 1895
Wilkin, Richard McK , L R C P & S , 1900
Wilkin, Thomas J , L R C S , 1867
Wilkinson, Richard J , M.B 1899
Williams, John A de C M B , 1879
Williams Neville S , M R C S , 1910
Wilson, Janette R , M B 1921
Wilson, John S , M B , 1902
Wilson, Thomas, M B , 1902
Wolfe, Robert I , L S A , 1887
Woods, Henry C , C B , C V O , M D , 1863
Woods, John C L R C P & S 1894
Woods, Lionel D , O B E , L R C P & S , 1907
Woods, William M , L R C P 1906
Woodward, Henry M M , M R C S , 1904
Woodyatt John F , L R.C P , 1888
Wright, Alan G , M B , 1917
Wyllie, Hugh A , M B , 1919

Yeats, John F , L R C S 1884
Yoshinaka, Kogi, M B , 1922
Young David M , M B , 1917
Yourell, Fergus D , L R.C P & S , 1918

Zeederberg, James P , L.R.C P & S , 1908
Zimmerman, Carl J , M B 1923

least four dentists at work in East Ham instead of one as at present The school ophthalmic surgeon, Mr C L Gimblett, refers to the large number of cases of squint "This deformity," he says, "results from the poor development of binocular vision in early life, and should be treated at its first appearance—not by waiting until the child is 5 years old" He also emphasises the need in East Ham for a special school for weakly children

Brighton

Dr Duncan Forbes reports that increasing use is being made of X ray examinations for the diagnosis of tubercle Tuberculin is only used in the form of the Pirquet cuti-reaction for young children The urochromogen reaction is found of value in excluding hopeless cases from sanatorium treatment In a small number of cases artificial pneumothorax has proved of great value, ten patients underwent this treatment during the year The greatest possible use is made of natural sunlight at the sanatorium During a part of the school hours the children wear sun-bathing costumes, and carry out their drills and organised games in the sunshine under the guidance of the teacher During the winter months and on sunless days a small open carbon arc lamp has been in use for several years Provision has also been made at a private light treatment clinic in the town for patients suffering from lupus and tuberculous glands and joints Dr Forbes thinks that the results of light treatment are encouraging, but that the claims made for this treatment in some quarters are extravagant He insists that the crying need for the consumptive is to have work found for him When gardening was tried at the sanatorium the task allotted to the consumptives was monotonous and no payment was made The gardener now in charge recognises that the garden is to be run not for beauty or for gain, but to provide work as required for patients, a pocket money allowance of threepence per hour is made A similar change has been made in the workshop The manual work was formerly too heavy Two hundred pounds' worth of electrically driven machinery has been introduced, and also pocket money allowances These changes have made the patients much more content Dr Forbes would like to see the establishment of municipal work treatment centres An examination of 96 stillbirths resulted in the finding of the *Spirochæta pallida* in 12 of the livers The housing scheme of the corporation comprised the erection of 1116 houses, of which 927 were completed at the end of 1925 There are still a number of cases of overcrowding and of subletting without the use of the necessary conveniences The houses built are sufficient to meet the natural increase of the population, but there is more immigration than emigration in Brighton Two out of the 33 samples of milk examined for tubercle gave a positive result, but visits paid to the farm failed to discover the tuberculous udders In each case cows had been sold between the taking of the sample and the obtaining of the result The by-law for the "humane" slaughter of all animals has been in operation since 1922, during which time nearly 100,000 animals have been slaughtered in the borough The objections of the trade appear to have been withdrawn There were three minor shooting accidents to slaughter-men with some of the pistols used, but there have been no accidents since the introduction of the Cash captive bolt pistol, nor at any time with the R S P C A. cattle killer with free bullet Dr Forbes thinks that three principal points should have been borne in mind when the meat regulations of 1924 were framed First, better meat inspection to prevent the use of carcasses of animals which have suffered from acute illness, secondly, the prevention of the handling of meat by persons who have not washed their hands carefully after defecation This second point has been entirely missed by the framers of the regulations A butcher may have no basin in which to wash his hands after going to the w c, and may make sausages, serve meat, &c, with dangerously polluted hands In the circular letter to the retail trade in Brighton with regard to the meat regulations this point is specially emphasised The third point is that cooked meats are outside the scope of the regulations, although meat which has to be cooked before being eaten is less likely to give rise to trouble than cooked meats

Bournemouth

Dr A D Edwards reports that there were only seven notifications of ophthalmia neonatorum All the cases were mild, but in three instances it was considered advisable to admit mother and child into hospital Fifty-two milk samples were examined for tubercle, but it is not stated whether the examination was biological, or how many gave a positive result In the circular issued with regard to the meat regulations an illustration is given of a suggested type of counter case for cooked meats with glass top, shelves, &c, and marble slate, or hard wood ends Mr R A Cripps, the public analyst, shows that boric acid is still being freely used for sausages The new regulations prohibiting this will come into force on Jan 1st, 1927 Mr Cripps again draws attention to the unnecessary quantity of rice-flour added to shredded suet He considers that when a cheap food is added to an expensive one to make it fit for transit, &c, a reasonable limit should be fixed for the proportion of the cheap food to be added Out of 23 samples of butter and margarine 22 contained boric acid One sample of butter contained about 37 per cent of margarine, another of "cooking butter" contained 66 per cent of margarine, while a margarine sample contained 14 per cent more butter than the legal maximum of 10 per cent

Preston

Dr F A Sharpe points out that the great towns of Lancashire and Cheshire showed a marked increase in infant mortality as compared with 1924 Several had rates over 100, and Preston's rate of 131 was the highest of the 105 great towns of England and Wales In seeking for an explanation Dr Sharpe refers to the severe winter, the pollution of the atmosphere by smoke, especially by industrial plants, the three years of severe depression in the textile and engineering trades, and, lastly, the bad housing The decline in the mortality, resumed during the post-war trade boom, has been stopped by "the four lean years" Dr Sharpe refers to the large body of opinion in favour of the thesis that the decline in the tuberculosis mortality is more dependent upon a generous supply of food than upon any other factor, and he thinks we must anticipate a continued slight rise until the trade depression lifts "The heavy loss of life of women at childbirth deserves careful attention The tendency is in an upward direction Over 100 women have died in childbirth in the last ten years" Only 73 expectant mothers attended the antenatal centres, but this small number is partly due to the opening of an antenatal clinic at the Preston Royal Infirmary During the year a concerted effort was made to organise a nursing service available for all classes of society Hitherto the only nursing available has been a nursing sisterhood for Roman Catholics, a Poor-law nurse, and a nurse maintained by the parish church nursing association As the result of a public meeting and appeals the Preston and District Nursing Association has been started The milk samples examined for tubercle numbered 235, and of these 14 were positive As a result 13 cows with tuberculosis of the udder were removed from the milking herds and slaughtered under supervision During the inspection of cattle at the abattoir 79 udders were found to be affected with tuberculosis The majority of these animals were old cows and came from districts outside the area from which milk is drawn for the borough During May and June an outbreak of scarlet fever comprising some 10 cases, was traced to infected milk "Notwithstanding the immense effort made by the corporation and by private enterprise to supply the deficiency in houses, there is still a very great need," and it has not been possible to proceed with the closure and demolition of insanitary buildings. Preston has a practically stationary population, and the 2075 houses erected since 1911 were more than enough for the slight natural increase of the population On Jan 1st, 1926, there were 2000 unsatisfied applicants for new houses

Grimsby

Dr B C Stevens reports that the V D clinic has been removed from cramped premises in the general hospital to a house acquired by the corporation, and is doing increasingly good work. A new hospital of 24 beds for advanced cases of tuberculosis is nearly ready There is at present provision for early cases in males, but none for females For surgical tuberculosis in children four beds in another county are available, but, says Dr Stevens, "eight of our own would be better" There are, at present, four health visitors, one tuberculosis nurse, and three school nurses In order to cope with the work adequately, and to avoid overlapping and the visitation in the same house or street by three persons instead of one, Dr Stevens suggests there should be eight health nurses doing all the necessary visiting, each for her own small district The scarcity of institution beds for cases of mental deficiency creates a difficult position. The local authority has made good progress with the building of houses, but the overcrowding is not reduced "Why?" asks Dr Stevens, "Because no houses are available at a rental of 10*s* or 12*s* a week suitable for the casual labourer or the poor" The high maternal mortality emphasises the need for a maternity home Including two deaths following upon illegal operations and one due to valvular heart disease during the puerperium, the maternal mortality from childbirth was 8 3 The maternity and child welfare medical officer, Dr Janet Hepburn, conducts an antenatal clinic on one afternoon a week. The number of first attendances during 1925 was 160 (total births, 1792) Particulars were obtained about the feeding of 1167 babies At three months 61 per cent were breast fed and at six months 47 per cent

MENTAL HOSPITAL REPORTS

The *Glamorgan County Mental Hospital* at Bridgend had 1833 cases under treatment on Dec 31st, which means considerable overcrowding The medical superintendent calculates that only 35 per cent of the admissions can hope for recovery, although there have been fewer cases of general paralysis The recovery-rate was 30 per cent and the death-rate 10·4 per cent, 87 post-mortem examinations were held There were two deaths from dysentery and seven from severe diarrhœa, which emphasises the need of a properly equipped laboratory, 93 patients are allowed parole and 55 were let out on trial, 12 with money allowances A cinema and wireless have been installed There is a consulting surgeon, but no dentist; 105 nurses hold their certificate and 50 more have passed the preliminary examination Plans are ready for a new admission block, which will be of great value in segregating the patients and reducing congestion The report includes notes from the three chaplains

The *Essex and Colchester Mental Hospitals* are at Brentwood and Severalls At *Brentwood* there were 1661 patients on Dec 31st The death-rate was 8 7 per cent and 112 post-mortem examinations were made Only 4 per cent of the deaths were due to pulmonary tuberculosis, which is now but little in evidence There was one case of dysentery. A very large proportion of the admissions were general paralytics, and for these malarial treatment is to be tried In the admission wards a clinical and examination room has been provided, but there are still no facilities for hydrotherapy The dentists attend twice weekly Fifty-two patients are allowed parole and there are open wards On the female side there is a weaving and handicraft room which occupies over 40 women An operating theatre, a general bathroom, new verandahs, and hot water installation have been completed Sixty-six nurses hold their certificate There are a number of imbecile boys in the hospital, and these now have two small rooms to themselves At *Severalls* there were 1669 patients The low death-rate of 5 5 per cent was a record for the hospital, and there has been no dysentery for two years Post-mortem examinations were held in 85 per cent of the deaths General paralysis is being treated by malaria; 122 patients were allowed out on trial, 49 having money allowances, while over 200 patients have parole within the estate, and three beyond The poultry farm is developing satisfactorily There is a small weaving-room, but more space is required for this industry The pathological laboratory is being enlarged, and the work done therein includes routine investigations of blood and cerebro-spinal fluid, the exploration of new tests for general paralysis, and routine examination for typhoid carriers, which has resulted in the discovery of six Ninety-six nurses now hold their certificate, and the supply of suitable candidates is greater than it was

The *City of Leicester Mental Hospital* at West Humberstone had 898 inmates on March 31st. The death-rate was 9 1 per cent. and the recovery-rate 41 1 per cent The cause of death was verified in 75 3 per cent of the cases The visiting commissioners remark that "the general atmosphere of the hospital was one of happiness and goodwill", 77 per cent of the patients are usefully employed and the medical superintendent urges the appointment of an occupation officer, remarking very rightly that the equipment of a mental nurse should include a knowledge of how to make useful occupation for her cases 47 per cent of the male and 36 per cent. of the female patients are on parole, and leave of absence has been granted 1395 times during the year A magazine, entirely produced by patients, has been widely circulated The pathologist submits his first report this year and records a small outbreak of dysentery, after which two carriers were discovered The question of carriers is being investigated An outbreak of ringworm drew attention to the possibility of this disease being more common in mental hospitals than is realised Malarial treatment was given to seven cases of general paralysis and to three of neurosyphilis Only one case showed improvement The dental surgeon reports that he has seen over 300 patients, and that all new admissions have also been examined While patients are under his care they undergo at the same time a course of oral hygiene in the wards, a most important adjunct to dental work He states that he is now seeing infinitely cleaner mouths than before Thirty-six nurses are certificated and three have the M.P A diploma.

The *Monmouthshire Mental Hospital* at Abergavenny houses 1167 patients and has 37 vacancies The death-rate was 6 4 per cent, and the cause was verified post mortem in 77 per cent of these There was an influenza epidemic and one case of dysentery, but otherwise the health of the patients was good The recovery-rate was 26 9 per cent, but many of the admissions were feeble or infirm and there was a high proportion of general paralytics All the sewing work of the hospital is done in the wards, and boots are both repaired and made The detached houses and two wards are administered on the open door system, and parole is allowed to over 100 patients within the grounds and 31 outside Shopping parties visit the town weekly A dentist attends weekly, and the appointment of a visiting surgeon is recommended by the commissioners During the year 11 nurses obtained their final certificate The report includes notes from the three chaplains

The *James Murray's Royal Asylum* at Perth had 163 patients on its register on March 31st, having had the largest number of admissions during the year on record, amounting to 55 5 per cent of the average inhabitants Just under 60 per cent were voluntary boarders and the authorities have found no difficulty in persuading these people to stay as long as required A few certified patients are allowed out on probation. The report includes no statistical tables The medical superintendent points out that the bodily health of patients admitted is generally poor, and discusses the relationship of pyorrhœa to mental disorder In some cases eradication of deeply-placed septic foci led to rapid improvement, but in others the results of drastic dental treatment were disappointing The death-rate was 9 3 per cent and post-mortem examinations were made in 10 out of the 14 fatal cases There were four cases of German measles, but no more serious epidemic As is the custom here, every available nurses at for the certificate examination of the Nursing Association.

The *West Sussex County Mental Hospital* at Chichester has 759 patients, and although not immediately pressed for accommodation, has approached two boards of guardians to see if they will receive quiet aged patients in their infirmaries The death-rate was 4 7 per cent and post-mortems were held in 78 per cent of cases A number of relieved patients have been sent out on trial, eight of them with money allowances Parole has been granted to 60 patients, and 14 per cent of the women wear their own clothes There was an epidemic of influenza, but otherwise the health has been good Individual attention is given in the kitchen to recovering patients who show any aptitude for cooking The excellent X ray apparatus is at present housed in a temporary hut 70 per cent of the male and 50 per cent of the female nurses are certificated or registered

The *Croydon Mental Hospital* at Warlingham had 713 residents on March 31st, and the recovery-rate for the year reached 52 38 per cent, 19 per cent higher than the average figure for county hospitals Accommodation has been taxed to the utmost The death-rate was 6 45 per cent The general health was good, there was only one case of dysentery The hospital has electrotherapeutic and X ray plant, and a new bacteriological laboratory is being fitted up A dentist attends weekly Malarial treatment has proved satisfactory for general paralysis, 50 per cent of the cases being discharged and continuing well A large proportion of the patients are usefully employed in various domestic offices and in mat-making The numbers out on trial are, however, still not great Twelve nurses have the M P A certificate and 13 more have passed the preliminary The three chaplains each supply a note to the report

The *Hertfordshire County Mental Hospital* at St Albans accommodates 904 cases and has an excess of beds, many of which are, however, occupied by out-county patients A three-valve wireless set, four pianos, and a billiard table have been added The report makes the important announcement that the committee have arranged to allocate an area of 130 acres of the estate for a mental deficiency institution The death-rate was 6 5 per cent, post-mortem examinations being held on 49 cases out of the 59 who died The recovery-rate was 40 8 per cent, an increase on the previous year. There was one case of diphtheria and one of enteric fever The male sick patients are successfully nursed by women The dentist treated 123 patients, and there were several major operations during the year One ward has been made "open" Thirty-seven nurses have their certificate, while 22 others have passed the preliminary examination

The *Brighton County Borough Mental Hospital* at Hayward's Heath had 828 cases in residence on Dec 31st There has been no dysentery since 1924 and no epidemic disease save one case of mumps Full parole has been given to 47 patients, without untoward result The recovery-rate was 57 3 per cent for males and 39 5 per cent for females A wireless set has been fixed and electricity is being installed. Forty three nurses hold their certificate and 24 more have passed the preliminary test The chaplain and dentist also present reports; the latter attended 435 patients Last year a dressmaker was appointed to supervise the making of the women's clothes and to make an attempt to get away from stereotyped patterns Unfortunately, there is no admission ward and new cases have to be treated amongst the chronics There is a possibility that an out-patient clinic may be started in Brighton; it is to be hoped that this important venture will mature successfully

The *Kingseat Mental Hospital*,' Aberdeen, had 628 patients at the end of the year, an increase of nine It is still in the unfortunate position of having to refuse voluntary patients because the parish council receive a small grant for certified cases The medical superintendent justifiably complains of this reactionary and obstructive policy There was a recovery-rate of 38 per cent and a death-rate of 6 8 per cent As there was continual diphtheria and scarlet fever in the district the patients and staff were tested and "positives" immunised, and since then there have been no cases of epidemic disease The hospital has long been overcrowded and mental defectives have been treated in association with other patients In addition to its prejudicial effect on the patients, this also makes the nursing more difficult and discourages the staff All will welcome the relief afforded by the new villas, which will soon be ready for use

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED AUGUST 28TH, 1926

Notifications —The following cases of infectious disease were notified during the week —Small-pox, 90 (last week 62); scarlet fever, 1036, diphtheria, 725, enteric fever, 59; pneumonia, 361, puerperal fever, 42, cerebro-spinal fever, 11, acute poliomyelitis, 40, acute polio-encephalitis, 2, encephalitis lethargica, 39, continued fever, 1, dysentery, 11, ophthalmia neonatorum 104 There were no cases of cholera or typhus fever notified during this week The case of bubonic plague at Liverpool will come into next week's return

Deaths —In the aggregate of great towns, including London, there were no deaths from small-pox, 2 (0) from enteric fever, 10 (0) from measles, 5 (2) from scarlet fever, 31 (6) from whooping-cough, 24 (6) from diphtheria, 124 (23) from diarrhœa and enteritis under 2 years of age, and 18 (4) from influenza The returns from diarrhœa and enteritis, although showing a rise of about 25 per cent. on the figures of the previous week, are not much more than one-half the figures of the corresponding week a year ago The figures in parentheses are those for London itself

---

A CASE OF BUBONIC PLAGUE IN LIVERPOOL.—In the case of a boy of 10, who became ill on August 27th and died in hospital on August 30th, the diagnosis of plague has been confirmed by the bacteriologist of the Ministry of Health The boy's father, a dock employee, is himself in hospital recovering from an illness the symptoms of which are suggestive that he, too, may have suffered from plague. The remaining members of the household are under supervision and steps to prevent the spread of infection are being taken by the Liverpool Public Health Department

TREATMENT OF TUBERCULOUS INSURED PERSONS IN IRELAND —At the meeting of the National Association of Insurance Committees in Dublin last week a discussion was held on the treatment of tuberculous insured persons It has been the experience of many committees that the sanatorium fund is insufficient for the adequate treatment of all tuberculous insured persons On the other hand, the local authorities were unwilling to undertake the treatment of insured persons in excess of the number for whom payment could be made by the insurance committees A deputation from the Association recently waited on Dr E Stephenson, chief medical officer of the Department of Local Government and Public Health and stated that the insufficiency of the sanatorium benefit fund was largely due to non-compliance with the Insurance Acts, and suggested that the Government should meet its moral obligations to insured people who had complied with the Acts Dr Stephenson in reply, admitted the hardship for insured persons, but said that his Department was concerned to safeguard the ratepayers If the deputation submitted their views in the form of a memorandum he would submit it to the Minister

Correspondence.

"Audi alteram partem"

HELIOTHERAPY IN PULMONARY TUBERCULOSIS

To the Editor of The Lancet

Sir,—I was greatly interested to see the article by Dr J E Wood on this subject in your issue of August 21st There appears to be a dread of employing sunshine in pulmonary tuberculosis, in spite of its recognised value in other forms of the disease This fear would seem to be very largely hypothetical In January of this year Dr Rollier very kindly showed me a large number of cases in his wonderful clinics at Leysin I asked him particularly about the effect of sunshine in pulmonary tuberculosis He replied that he was a surgeon and not a physician, and did not deal with pulmonary cases except where so-called surgical and pulmonary tuberculosis coexisted In such cases he gave full sunshine treatment, with apparently excellent results I examined these cases and was very favourably impressed by them Disease that was presumed to be hilum tuberculosis was treated as a routine by heliotherapy, and the cases did exceedingly well Dr Rollier constantly pointed out that sunshine treatment failed to cure where there was a mixed infection without free drainage This condition, of course, obtains in many cases of phthisis But, after prolonged fresh air treatment the mixed infection is frequently overcome, and then sunshine treatment would be indicated I have often wondered whether it would be possible to drain a cavity exteriorly where the pleura is adherent, if one large cavity was keeping up the mixed infection, and then to give sunshine treatment Heliotherapy, it would seem, would be indicated after thoracoplasty, apicolysis, and other surgical procedures where the collapse of the diseased part has presumably minimised the mixed infection One hears much talk of severe reactions following exposure to sunshine. This, however, is the same with surgical tuberculosis If the diseased part is irradiated too soon, or too much, a devastating reaction may occur This is avoided by following Rollier's technique exactly So would it be, I imagine, with phthisis, if the diseased part were only gradually approached and finally exposed cautiously, watching carefully any reaction until it was safe to give prolonged exposures I earnestly hope that an extended trial will be made of heliotherapy in pulmonary tuberculosis

I am, Sir, yours faithfully,
F G Chandler, M D , F R C P

London, N W , August 30th, 1926

THE TECHNIQUE OF BLOOD TRANSFUSION

To the Editor of The Lancet

Sir,—Mr Keynes made a noteworthy improvement in the apparatus for transfusion of blood, but in using it I found certain disadvantages which it seemed impossible to obviate Mr Keynes without making trial of the modifications I have suggested criticises and condemns them The crucial point is whether or not the risk of contamination is merely academic I would maintain that for the purposes in view, involving repeated transfusions carried out in the ward or in the private house, this risk is not negligible The liability to clotting is largely dependent upon the modifications introduced to prevent contamination But even when using Keynes's method of collecting the blood, clotting does take place occasionally both in the tube and in the needle It is not so much a question of the rate of flow, as Mr Keynes suggests, as of its intermittency, and this is beyond the control of the operator I must confess that it is astonishing to me that Mr Keynes in the course of his eight years' experience has not met with this difficulty It would be interesting to have the experience of others His assertion that clotting in the needle cannot be prevented by using the apparatus in question is only worth consideration if it is founded on experience

As regards the toxicity of the dose of citrate that I mentioned, I can only say that my results bear out the opinion of Lewisohn, as quoted by Mr Keynes in his monograph on Blood Transfusion, that 5 g of sodium citrate is innocuous to man But I am surprised that it did not occur to Mr Keynes that in using my method he can use whatever concentration of citrate he likes He himself has pointed out that the tonicity of the solution is a matter of little importance Incidentally, it is another advantage of my method that the amount of citrate used can be accurately regulated to the amount of blood actually withdrawn The elaborateness of the apparatus is more apparent than real I have myself collected 400 c cm of blood without assistance

I am, Sir, yours faithfully,
London Hospital, Sept 6th, 1926 Paul C Gibson

To the Editor of The Lancet

Sir,—It is obviously desirable that the technique of so important a therapeutic measure as blood transfusion should be made as perfect and fool-proof as possible Dr Gibson attempts to improve the citrate method introduced by Mr Geoffrey Keynes His only objections to this method are first, that it does not eliminate the clotting difficulty, and, secondly, that the open method of collection is used which carries with it the risk of contaminating the blood

In my experience, when one has mastered the technique of the Keynes method, the clotting difficulty does not exist, while to avoid contaminating the blood during collection an elaborate complication such as that described is unnecessary A plug of cotton-wool is effective, or, if suction is used, as I believe it may be with advantage, a rubber stopper fitted with an inlet tube prevents infective material falling into the flask

I would suggest that the Keynes method, except for minor unessential modifications, as a citrate method, is incapable of improvement While acknowledging much valuable practical advice in Dr Gibson's paper, I feel it regrettable that he has not applied his obvious ingenuity to effect some improvement in the methods which badly need it—namely, those for administering whole blood without addition of anti-coagulants

Blood transfusion in the treatment of medical diseases may not have achieved the brilliant results commonly obtained in surgical cases, but to conclude that "it is at any rate desirable that the remedy should be given a careful and exhaustive trial before it is decided finally to abandon it" is a singularly pessimistic view, suggesting that Dr Gibson so far has not found his results commensurate with the technical labour expended

I am, Sir, yours faithfully,
Kenneth Stone

Harley street, W , August 31st, 1926

AN UNUSUAL DISABILITY

To the Editor of The Lancet

Sir,—I recently examined a man with a complete ankylosis of the left hip and in which the left knee was involved His chief complaint was that, although he could fully undress himself when going to bed at night, he required help to dress himself in the morning At first sight this did not appear quite clear and it required an actual demonstration to prove it He was unable to reach his left foot with either hand He wore shoes and by using his right foot was able to remove the left shoe, and he was able to remove the left sock by means of his right toes He may in time to able to educate the toes of the right foot to complete his morning toilet unaided, but this at present appears an impossibility —I am, Sir, yours faithfully,
J J Scanlan

Old Broad street, London, E.C , Sept 6th, 1926

THE CARDIAC CIRCULATION AND DISEASE

To the Editor of The Lancet

Sir,—In his valuable paper in your last issue Dr Geoffrey Bourne states that an agency that could reduce the frequency of the heart-beat like digitalis would be of great therapeutic value May I remind your readers that, as has been long ago and repeatedly pointed out by good observers, we have such an agency in *cold* ? In acute disease the heart is singularly responsive to local applications of cold, and the vicious circle of threatening heart failure may often be broken thereby In chronic conditions of rapid heart from myocardial weakness, cooling (but not "hot") baths of various kinds may similarly be relied upon to increase the force and diminish the frequency of the pulse

The relation between the diastole and the nutrition of the heart is an interesting one, and Dr Bourne's view agrees with the observation that many persons with feeble but slow hearts are long lived It may be noted that cold applied to the precordium during hot baths and applications often prevents acceleration of the heart This method, known at Pistyan as "heart-cooling," enables thermal treatment to be used in many cases of debility, "rheumatic" and other

I am, Sir, yours faithfully,

R Fortescue Fox

London, Sept 6th, 1926

PASTEURISATION OF MILK

To the Editor of The Lancet

Sir,—It is a wholesome sign of the times when someone like Mr. McLachlan does not fear to take his stand against the sophistication or doctoring of natural food Many years ago I had a hard fight in an English residential town—Cheltenham—to kill the trade of selling sterilised milk; now, I have not the least doubt but that 90 per cent of a section of the population of that town alone would have been rickety had this section's mothers not had the good sense to be impressed by my simple reasoning "What nourishment is the little one having ?"—the little one being the picture of pre-rachitic hæmic impoverishment "Cow's milk," was the reply "Cow's milk, boiled or sterilised" "Why?" "I thought it killed the germs" "Is a mother's milk boiled or sterilised ?" That settled the doom of the laboratory worker's advice The true test of a food was, and is, the effect on the nutrition and development and strength of the consumer, and the wise man was the one who foresaw what would happen to the consumer in 10 or 12 years My experience is that the laboratory worker has never done this Pasteurised milk has, and will have, the same deplorable results as boiled or sterilised milk, because, and this is the all-important point, *it is cooked* Anyone can perform the following experiment Place an egg in water for 30 minutes at the temperature of 145° F and the result is *a cooked egg*, and do not pasteurisers frequently proudly say that they hold the milk at 150°, *or thereabouts*, for half an hour ? The nutritional, developmental, and sthenic value of milk is destroyed by pasteurising, and it does not need much prevision to know that rickets and its congeners are in the future to wreck or to ruin the health of the young

No one is much to blame, and least of all the parents, but anyone who has studiously observed, over a series of years, the lamentable effect of feeding anyone on sophisticated or doctored milk can only be doing a public duty by persisting in pointing out the destructive effects on the growing body organism —deformity and maldevelopment, asthenia, predisposition to disease, and inability to withstand any morbid process In effect, the same condition results to a food from pasteurising as from the use of a preservative such as boric acid; there is devitalising of organismal life—i e, of bacterial life—not destruction, and there is devitalising of the cellular life of the food itself Now, surely, mothers, educated doctors—i e, those who have jettisoned much of the impedimenta of their schooling—and laboratory workers all know the baneful results of boric acid and other similar preservatives on foodstuffs, whether for the child or the adult

I am, Sir, yours faithfully,

R Cunningham Affleck

Edinburgh, August 27th, 1926

NOMENCLATURE OF ABNORMAL UTERINE HÆMORRHAGE

To the Editor of The Lancet

Sir,—I am interested in Prof Blair Bell's criticisms in your last issue of the nomenclature suggested and approved at the Nottingham meeting of the B M A. for the varieties of abnormal uterine hæmorrhage, and I welcome this opportunity of clearing up any doubts that may still exist in his mind and in those of others I am indeed sorry that illness prevented him from being present at the discussion in question which, if it has done nothing else, has served to focus attention once more upon the urgent necessity for standardising a nomenclature in connexion with this subject I do not claim on this occasion to have put forward anything new in the matter of terminology What I did attempt to "propound," if this word must be used, was a pathological basis to substantiate terms which are already in use Mere names to cover symptoms do not appear to have much value unless they are backed up by pathological facts

The nomenclature I used in my paper at Nottingham is practically the same as that employed by me in my article on Uterine Hæmorrhage in the "Practitioner's Encyclopædia of Obstetrics and Gynæcology" (Fairbairn), published in 1921 Here Prof Bell will find that full credit is accorded to him as regards the word "epimenorrhœa" "Menostaxis" was a term introduced by me in 1921 to designate a prolonged "period" and which has, as a pathological basis, a patchy necrosis of the endometrium It is in other words, an incomplete menstrual abortion, and is a distinct entity "Menorrhagia," in the sense in which I employ and teach the term, is a short, sharp hæmorrhage due to atonicity of the uterus, probably with a neuro-muscular basis It is analogous to post-partum hæmorrhage Both "menorrhagia" and "metrostaxis" are terms that have long been in use, and neither Prof Bell nor I lay claim to any originality in the matter Prof Bell complains that in the classification accepted at Nottingham no reference is made to his term "epimenorrhagia" I did not include it because candidly I could not see the necessity for it As I understand the word it means too frequent and too excessive periods It has no definite pathological basis apart from what is included under the other names, and to my mind is mere hair-splitting One of the great difficulties in investigating uterine hæmorrhage from a clinical standpoint is that not only two but sometimes three of the standardised varieties may and do occur together If each one of these numerous possible combinations is to be honoured with the dignity of a name such as "epimenorrhagia" an algebraical and pathological problem is set which I am only too pleased to leave to Prof Bell to elucidate

The Nottingham classification of uterine hæmorrhage is at least based upon pathology in addition to symptomatology, and it has the merit of fact in addition to theory From a practical standpoint therefore, the matter amounts to this—the old terms of "menorrhagia" and "metrostaxis" are retained with the limitations noted in my opening paper, the comparatively new terms "epimenorrhœa" and "menostaxis" are introduced to designate specific pathological types of bleeding and the name "epimenorrhagia" is dropped as being redundant In this "new" terminology what is good of the old has been retained and, of the new, I think the honours stand even

I am, Sir, yours faithfully

Beckwith Whitehouse.

Birmingham, Sept 4th, 1926

Obituary.

J HOWARD MUMMERY, C B E D Sc PENN, F R C S ENG, L D S

We regret to announce the death at the age of 79 of Mr J Howard Mummery who had for many years been a recognised leader of the dental profession not only in this country but among pathologists in every scientific centre

Mummery was the son of a distinguished scientist and dentist, J R Mummery who was one of the first to investigate the incidence of dental caries among different races and whose work is still quoted as authoritative He was educated privately and received his medical training at University College Hospital where he early commenced work as a microscopist and started investigations in the difficult field of dental histology which he was pursuing within a few weeks of his death

J HOWARD MUMMERY

As a histologist Mummery's ability can have been equalled by few and rarely excelled The dental tissues present so many technical difficulties that the investigation of their minute structure calls for exceptional skill and patience In this work he was supreme, and his additions to our knowledge of the normal and morbid structure of the teeth have played a great part in creating a scientific conception of dental disease and its treatment Dental anatomy plays an important part in zoology, so that his labours were appreciated not only by dentists but by all biologists and anthropologists He was among the first to describe adequately the development of dentine, and his account, written as far back as 1892 is still generally accepted His best-known piece of research was that on the innervation of the highly sensitive dentine Since the dental pulp is richly supplied with nerve-fibres, it would seem natural to suppose that these eventually enter the tubes of the dentine For many years histologists sought to demonstrate this point but without success for the technical difficulties of preparing sections to show a hard tissue like dentine and a delicate tissue like the pulp in their anatomical relation without distortion were extremely great Mummery took up the problem and laboured at it long and unceasingly, and eventually after work, the magnitude of which only a few of his friends realised, he was able to demonstrate that the nerve-fibres passed into the dentinal tubes His results were published in the *Philosophical Transactions* of the Royal Society, and attracted widespread attention and some criticism, not all of which was either fair or pertinent On the whole, it may be said that histologists generally, and not only those engaged in dental research have accepted Mummery's conclusions

Among Mummery's other important contributions to dental pathology may be mentioned an inquiry into the various forms of inflammation of the pulp and the morbid anatomy of the odontomata, but indeed there are few branches of dental science to which he did not make additions of first-rate importance As a worker he was painstaking and exact and nothing but the best that he could do satisfied him Were he studying any point in dental histology he would cut scores of sections before he could come to any conclusions that he would publish or depend upon and would remorselessly scrap sections that many would have been proud to have prepared As a result his various papers possess high value, and his conclusions as to the structure of the dental tissues have been generally upheld by subsequent workers Nor was he merely a technician of great skill, he was a vigorous and clear thinker, with a wide knowledge of general anatomy and pathology which he brought to bear on the various dental problems that occupied his attention His unwillingness to publish anything until he was sure of his ground is exemplified by the fact that at the age of 72 he published his first and only book the "Microscopic Anatomy of the Teeth," and it was at once hailed as a highly original and important work A second edition was soon called for, and Mummery took the opportunity of adding a section on comparative anatomy which made this edition almost a fresh publication The book, like the manual of John and Charles Tomes, is already a classic in its own domain

Mummery retained his mental vigour unimpaired to the end and was engaged in active research up to within a few weeks ago It is not given to many men to add substantially to their fame after the age of 70, but Mummery did so, and in many respects the last decade of his life was the most fruitful A serious illness a year ago, from which he made a rather remarkable recovery, impaired his strength considerably, but his brain was as alert as ever, and though he tired more easily his hand lost none of its skill Within the last three months three papers of histological research, all of first-rate importance, were written by him and have been published A correspondent who worked with Mummery often during the last few years records it as an inspiring sight to watch this passionate devotion to knowledge, sometimes checked but never stopped by the diminution of the physical powers "Mummery in private life," he adds, "was a charming companion, humorous widely read, and with many artistic interests He was moreover, one of the kindest of men and loved nothing better than to place his great knowledge at the disposal of others Indeed, he was almost prodigal of his time in helping younger men Though few of his contemporaries survive, yet he kept on adding to his friends, for he was always prepared to receive new ideas, and up to the end retained an elasticity of outlook that was positively youthful"

Mummery received the C B E for his services during the war in connexion with the treatment of injuries of the jaws, the University of Pennsylvania conferred on him the D Sc in recognition of his general services to dental science, and the Royal College of Surgeons of England made him an honorary Fellow He was a member of the committee for the investigation of dental disease of the Medical Research Council and carried out useful researches for that body He was one of the few dentists whose reputation was international and his death is a loss to the medical profession which he served with such keenness and genius

SAMUEL ARTHUR POWELL O.B.E., M.D. BELF., M.CH. R.U.I., J.P., V.D.

LIEUT COLONEL IN CHARGE OF OFFICERS' HOSPITAL BOMBAY

THE death occurred on August 28th of Dr S A Powell after a short illness. "Dick" Powell was born at Bandon co Cork in 1864: was educated at Trinity College, Dublin, the Royal University of Ireland and Belfast. He qualified M B R U I in 1887 and M Ch the same year. A brilliant surgical future was expected of him but he was attracted away from Belfast to the more adventurous life offered by a civilian post in Assam. Here he became interested in field observation and did some valuable laboratory work on obscure problems of tropical disease before he again changed his work for that of a police surgeon in Calcutta. When the South African war broke out Powell became medical officer to Lumsden's Horse, being frequently mentioned in despatches, but after that war returned to India as police surgeon in Bombay. He gained considerable experience in toxicology and medico-legal matters and was appointed to the Professorship of Jurisprudence in Grant Medical College Bombay; some of his work is incorporated in chapters of Lyon's Medical Jurisprudence. As a lecturer he was lucid and incisive interesting Indian students because he understood their standpoint and appreciated their difficulties in acquiring knowledge given in a language not their own. He also acted as professor of biology: his lectures were chosen carefully and illustrated by native types of plants and animals not imported specimens from Europe. His Practical Biology for Indian Students has been through many editions and remains a model of how to apply general knowledge to local conditions. Dr. Powell was examiner to the Punjab and Allahabad Universities and held other academic posts. In the Senate of the Bombay University his local knowledge enabled him to reconcile conflicting opinions, and his incisive and ready wit outmanœuvred obstruction. When the Great War began Dr Powell was in Germany but was able to get back to Bombay and worked from 1915 to 1919 as Lieut-Colonel I D F commanding the Byculla Officers Hospital. The strain of the war affected his health and he was compelled to leave India. After a time he took up consulting work in tropical diseases in London contributing several papers to the Royal Society of Medicine and the Royal Society of Tropical Medicine. He acted as consulting physician on tropical diseases to the Ministry of Pensions.

Powell was above all a clubable man. He was popular with all classes and races in India and had many hobbies. In his early days in Assam he ran a training stable for a time and rode his own horses. His sympathetic understanding of the Indian people enabled him to clear away many misunderstandings and he had an intimate personal knowledge of the criminal classes that lent point and humour to his lectures on medical jurisprudence. Many of his old pupils in India will regret to learn of his death.

CECIL JOHN DAVENPORT F.R.C.S. ENG., L.R.C.P. LOND.

ON Sept 4th Mr C J Davenport died suddenly in Shanghai at the age of 63. Mr Davenport was born in Adelaide South Australia and came to England to study medicine at St Bartholomew's Hospital where he qualified M R C S, L R C P in 1887 taking the F R C S Eng in 1889. After holding resident posts at his teaching hospital he proceeded to China in 1889 under the auspices of the London Missionary Society and established a medical mission in Chungking. After some years of pioneer work there he was moved to Wuchang where he carried on the medical work till invalided home at the time of the Boxer rising. In 1905 he was appointed medical superintendent of the Chinese Hospital Shantung-road Shanghai—the post he held till his death. Originally a mission hospital but under the control of local committees in 1905 the hospital was in low straits from lack of qualified staff. Under Mr Davenport's superintendence it has risen to a high standard of efficiency, many thousands of poor Chinese being treated yearly in the wards and out-patient departments and many doctors and nurses being trained. Recently a sum of over £300,000 was left by the late Mr H Lester of Shanghai, for its development and endowment and though Mr Davenport's retirement had previously been planned to take effect next year, he was being pressed to remain in Shanghai and give his advice and help in the administration of the benefaction for the hospital and its proposed medical school. The extent of his administrative duties had forced him to give up much of his surgical work to his lasting regret. Mr Davenport's sudden death is a severe loss to the local community where his judgment and vision were widely appreciated. He had no wish for personal advancement or distinction but as a president of the China Medical Missionary Association and the recipient of a decoration from the Chinese Government he was shown some formal recognition in recent years. Mr Davenport's life was given up entirely to the forwarding of his work: his keenness upright character and kindliness endeared him to the many of all nationalities with whom he was brought into contact. The chaotic state of the China he loved and the events of the past few years were causes of much anxiety and grief to him but his efforts to improve the conditions of medical work in that country were maintained to the end. He married in 1890 Miss Miles who prior to the marriage was Sister Martha at St Bartholomew's Hospital and was one of the first fully trained British nurses to go to China. He had two daughters and a son Robert Cecil who is in practice as an ophthalmic surgeon in London.

CENTENARY OF COOMBE LYING-IN HOSPITAL DUBLIN

As already announced the Coombe Lying-in Hospital is celebrating its hundredth anniversary from Tuesday Sept 14th to Friday Sept 17th. The proceedings will open with a reception at the Royal College of Surgeons by the Governors of the Hospital on Tuesday at 8 15 P.M. On the following day the centenary congress will be opened by its President *Sir William Smyly* at the Royal College of Surgeons at 9 30 A.M. A paper on Obstetrical Teaching in Sweden, by Prof Essen Möller will be followed by a discussion in which Prof A Couvelaire of Paris Prof Munro Kerr Dr L Cassidy Prof Fletcher Shaw and Mr Comyns Berkeley are expected to take part. At 11 15 Prof J. P. Faure of Paris will show a film illustrating abdominal hysterectomy and the rest of the morning will be devoted to papers on the Unnecessary Induction of Labour, by Mr Eardley Holland and the Treatment of Climacteric Hæmorrhages by Prof Paul Werner, of Vienna. In the afternoon the Coombe Hospital will be on view and in the evening there will be a dinner at the College of Surgeons. On Wednesday the opening paper will be read by Prof Munro Kerr, on the Lower Uterine Segment Cæsarean Section Operation. Prof J B de Lee, of Chicago Prof Möller Mr Eardley Holland and Prof Werner will join in the discussion. The remaining subjects of papers to be read on Wednesday are Two Important Advances in the Practice of Obstetrics and Gynæcology (Prof A Donald) Three Obstetrical Principles (Prof de Lee) and Some Problems in Antenatal Diagnosis and Prognosis (Prof Louise McIlroy). In the afternoon there will be a polo match in Phœnix Park between Coombe Hospital and the All Ireland Polo Club and in the evening a special performance by the Abbey Theatre Company. On Friday the proceedings are to open with a paper on Eclampsia by Prof H Hinselmann of Altona; this will be discussed by Mr Eardley Holland Dr J Hendry Dr Hugh Davidson and Dr Gibbon FitzGibbon amongst others. Papers will be read by Dr R W Johnstone on the Early Diagnosis of Cancer by Prof Beckwith Whitehouse, one on the Cause of Menstrual Pain and by Prof F J Browne on Intranatal Infection in the Newly born. From 4-6 P.M. there will be a garden party in the Zoological Gardens. Anyone wishing to take part in the discussions or the various functions should write to the hon secretary Dr L Cassidy at 6 Kildare-street Dublin who will be pleased to send programmes and cards of invitation.

Obituary.

J HOWARD MUMMERY, C B E , D Sc Penn , F R C S Eng , L D S

We regret to announce the death at the age of 79 of Mr J Howard Mummery who had for many years been a recognised leader of the dental profession not only in this country but among pathologists in every scientific centre

Mummery was the son of a distinguished scientist and dentist J R Mummery, who was one of the first to investigate the incidence of dental caries among different races and whose work is still quoted as authoritative He was educated privately and received his medical training at University College Hospital where he early commenced work as a microscopist and started investigations in the difficult field of dental histology which he was pursuing within a few weeks of his death

J Howard Mummery

As a histologist Mummery's ability can have been equalled by few and rarely excelled The dental tissues present so many technical difficulties that the investigation of their minute structure calls for exceptional skill and patience In this work he was supreme, and his additions to our knowledge of the normal and morbid structure of the teeth have played a great part in creating a scientific conception of dental disease and its treatment Dental anatomy plays an important part in zoology, so that his labours were appreciated not only by dentists but by all biologists and anthropologists He was among the first to describe adequately the development of dentine, and his account, written as far back as 1892 is still generally accepted His best-known piece of research was that on the innervation of the highly sensitive dentine Since the dental pulp is richly supplied with nerve-fibres, it would seem natural to suppose that these eventually enter the tubes of the dentine For many years histologists sought to demonstrate this point but without success for the technical difficulties of preparing sections to show a hard tissue like dentine and a delicate tissue like the pulp in their anatomical relation without distortion were extremely great Mummery took up the problem and laboured at it long and unceasingly and eventually after work, the magnitude of which only a few of his friends realised, he was able to demonstrate that the nerve-fibres passed into the dentinal tubes His results were published in the *Philosophical Transactions* of the Royal Society, and attracted widespread attention and some criticism not all of which was either fair or pertinent On the whole, it may be said that histologists generally, and not only those engaged in dental research, have accepted Mummery's conclusions

Among Mummery's other important contributions to dental pathology may be mentioned an inquiry into the various forms of inflammation of the pulp and the morbid anatomy of the odontomata, but indeed there are few branches of dental science to which he did not make additions of first-rate importance As a worker he was painstaking and exact and nothing but the best that he could do satisfied him Were he studying any point in dental histology he would cut scores of sections before he could come to any conclusions that he would publish or depend upon and would remorselessly scrap sections that many would have been proud to have prepared As a result his various papers possess high value, and his conclusions as to the structure of the dental tissues have been generally upheld by subsequent workers Nor was he merely a technician of great skill, he was a vigorous and clear thinker, with a wide knowledge of general anatomy and pathology which he brought to bear on the various dental problems that occupied his attention His unwillingness to publish anything until he was sure of his ground is exemplified by the fact that at the age of 72 he published his first and only book, the "Microscopic Anatomy of the Teeth," and it was at once hailed as a highly original and important work A second edition was soon called for and Mummery took the opportunity of adding a section on comparative anatomy which made this edition almost a fresh publication The book, like the manual of John and Charles Tomes, is already a classic in its own domain

Mummery retained his mental vigour unimpaired to the end and was engaged in active research up to within a few weeks ago It is not given to many men to add substantially to their fame after the age of 70, but Mummery did so, and in many respects the last decade of his life was the most fruitful A serious illness a year ago, from which he made a rather remarkable recovery, impaired his strength considerably but his brain was as alert as ever, and though he tired more easily his hand lost none of its skill Within the last three months three papers of histological research, all of first-rate importance, were written by him and have been published A correspondent who worked with Mummery often during the last few years records it as an inspiring sight to watch this passionate devotion to knowledge, sometimes checked but never stopped by the diminution of the physical powers "Mummery in private life," he adds, "was a charming companion, humorous, widely read, and with many artistic interests He was moreover, one of the kindest of men and loved nothing better than to place his great knowledge at the disposal of others Indeed, he was almost prodigal of his time in helping younger men Though few of his contemporaries survive, yet he kept on adding to his friends, for he was always prepared to receive new ideas, and up to the end retained an elasticity of outlook that was positively youthful "

Mummery received the C B E for his services during the war in connexion with the treatment of injuries of the jaws , the University of Pennsylvania conferred on him the D Sc in recognition of his general services to dental science , and the Royal College of Surgeons of England made him an honorary Fellow He was a member of the committee for the investigation of dental disease of the Medical Research Council and carried out useful researches for that body He was one of the few dentists whose reputation was international and his death is a loss to the medical profession which he served with such keenness and genius.

SAMUEL ARTHUR POWELL, O B E, M D Belf, M Ch R U I, J P, V D,

LIEUT COLONEL IN CHARGE OF OFFICERS' HOSPITAL BOMBAY

The death occurred on August 28th of Dr S A Powell after a short illness "Dick" Powell was born at Bandon, co Cork, in 1861, was educated at Trinity College, Dublin, the Royal University of Ireland, and Belfast He qualified M B R U I in 1887 and M Ch the same year A brilliant surgical future was expected of him but he was attracted away from Belfast to the more adventurous life offered by a civilian post in Assam Here he became interested in field observation, and did some valuable laboratory work on obscure problems of tropical disease before he again changed his work for that of a police surgeon in Calcutta When the South African war broke out Powell became medical officer to Lumsden's Horse, being frequently mentioned in despatches, but after that war returned to India as police surgeon in Bombay He gained considerable experience in toxicology and medico-legal matters and was appointed to the Professorship of Jurisprudence in Grant Medical College, Bombay, some of his work is incorporated in chapters of Lyon's Medical Jurisprudence As a lecturer he was lucid and incisive, interesting Indian students because he understood their standpoint and appreciated their difficulties in acquiring knowledge given in a language not their own He also acted as professor of biology, his lectures were chosen carefully and illustrated by native types of plants and animals not imported specimens from Europe His Practical Biology for Indian Students has been through many editions, and remains a model of how to apply general knowledge to local conditions Dr Powell was examiner to the Punjab and Allahabad Universities, and held other academic posts In the Senate of the Bombay University his local knowledge enabled him to reconcile conflicting opinions, and his incisive and ready wit outmanœuvred obstruction When the Great War began Dr Powell was in Germany, but was able to get back to Bombay, and worked from 1915 to 1919 as Lieut-Colonel I D F, commanding the Byculla Officers' Hospital The strain of the war affected his health and he was compelled to leave India After a time he took up consulting work in tropical diseases in London, contributing several papers to the Royal Society of Medicine and the Royal Society of Tropical Medicine He acted as consulting physician on tropical diseases to the Ministry of Pensions

Powell was above all a clubable man He was popular with all classes and races in India and had many hobbies In his early days in Assam he ran a training stable for a time and rode his own horses His sympathetic understanding of the Indian people enabled him to clear away many misunderstandings, and he had an intimate personal knowledge of the criminal classes that lent point and humour to his lectures on medical jurisprudence Many of his old pupils in India will regret to learn of his death

CECIL JOHN DAVENPORT, F R C S Eng L R C P Lond

On Sept 4th Mr C J Davenport died suddenly in Shanghai at the age of 63 Mr Davenport was born in Adelaide, South Australia and came to England to study medicine at St Bartholomew's Hospital where he qualified M R C S, L R C P in 1887 taking the F R C S Eng in 1889 After holding resident posts at his teaching hospital he proceeded to China in 1889 under the auspices of the London Missionary Society and established a medical mission in Chungking After some years of pioneer work there he was moved to Wuchang where he carried on the medical work till invalided home at the time of the Boxer rising In 1905 he was appointed medical superintendent of the Chinese Hospital Shantung-road Shanghai—the post he held till his death Originally a mission hospital, but under the control of local committees, in 1905 the hospital was in low straits from lack of qualified staff Under Mr Davenport's superintendence it has risen to a high standard of efficiency, many thousands of poor Chinese being treated yearly in the wards and out-patient departments and many doctors and nurses being trained Recently a sum of over £300 000 was left by the late Mr H Lester, of Shanghai, for its development and endowment, and though Mr Davenport's retirement had previously been planned to take effect next year, he was being pressed to remain in Shanghai and give his advice and help in the administration of the benefaction for the hospital and its proposed medical school The extent of his administrative duties had forced him to give up much of his surgical work, to his lasting regret Mr Davenport's sudden death is a severe loss to the local community, where his judgment and vision were widely appreciated He had no wish for personal advancement or distinction, but as a president of the China Medical Missionary Association and the recipient of a decoration from the Chinese Government he was shown some formal recognition in recent years Mr Davenport's life was given up entirely to the forwarding of his work, his keenness, upright character and kindliness endeared him to the many of all nationalities with whom he was brought into contact The chaotic state of the China he loved and the events of the past few years were causes of much anxiety and grief to him, but his efforts to improve the conditions of medical work in that country were maintained to the end He married in 1890 Miss Miles, who prior to the marriage was Sister Martha at St Bartholomew's Hospital, and was one of the first fully trained British nurses to go to China He had two daughters and a son, Robert Cecil, who is in practice as an ophthalmic surgeon in London

CENTENARY OF COOMBE LYING-IN HOSPITAL, DUBLIN

As already announced, the Coombe Lying-in Hospital is celebrating its hundredth anniversary from Tuesday, Sept 14th, to Friday Sept 17th The proceedings will open with a reception at the Royal College of Surgeons by the Governors of the Hospital on Tuesday, at 8 15 P M On the following day the centenary congress will be opened by its President, Sir William Smyly, at the Royal College of Surgeons, at 9 30 A M A paper on Obstetrical Teaching in Sweden, by Prof Essen Möller, will be followed by a discussion in which Prof A Couvelaire, of Paris, Prof Munro Kerr, Dr L. Cassidy, Prof Fletcher Shaw, and Mr Comyns Berkeley are expected to take part. At 11 15 Prof J P Faure, of Paris, will show a film illustrating abdominal hysterectomy, and the rest of the morning will be devoted to papers on the Unnecessary Induction of Labour, by Mr Eardley Holland, and the Treatment of Climacteric Hæmorrhages by Prof Paul Werner, of Vienna In the afternoon the Coombe Hospital will be on view, and in the evening there will be a dinner at the College of Surgeons On Wednesday the opening paper will be read by Prof Munro Kerr, on the Lower Uterine Segment Cæsarean Section Operation Prof J B de Lee, of Chicago, Prof Möller, Mr Eardley Holland and Prof Werner will join in the discussion The *remaining subjects of papers to be* read on Wednesday are Two Important Advances in the Practice of Obstetrics and Gynæcology (Prof A Donald), Three Obstetrical Principles (Prof de Lee), and Some Problems in Antenatal Diagnosis and Prognosis (Prof Louise McIlroy) In the afternoon there will be a polo match in Phœnix Park between Coombe Hospital and the All Ireland Polo Club *and in the evening a special* performance by the Abbey Theatre Company On Friday the proceedings are to open with a paper on Eclampsia by Prof H Hinselmann of Altona, this will be discussed by Mr Eardley Holland Dr T Hendry Dr Hugh Davidson and Dr Gibbon FitzGibbon amongst others Papers will be read by Dr R W Johnstone on the Early Diagnosis of Cancer by Prof Beckwith Whitehouse *one on the Cause* of Menstrual Pain and by Prof F J Browne on Intranatal Infection in the Newly Born From 4–6 P M there will be a garden party in the Zoological Gardens Anyone wishing to take part in the discussions or the various functions should write to the hon secretary Dr L Cassidy at 6, Kildare street Dublin, who will be pleased to send programmes and cards of invitation

The Services.

ROYAL NAVAL MEDICAL SERVICE

The following appointments are notified —Surg Comdrs F G H R Black to *Victory*, for R N Hospl, Haslar, temp, supy, H H Babington, loan to R A N cancelled, G G Vickery to Canterbury (on transfer), J A Maxwell to *Pembroke* for R N Hospital, Great Yarmouth (temp), J Bourdas to *Furious* (on recommg), A G V French to *Malaya*, and to *Malaya* (on recommg), and H M Whelan to *Ganges* for R N Sick Quarters, Shotley

Surg Lt-Comdrs F G Hunt to Dartmouth on commg for voyage out and home, H Hurst to *Carysfort* and to *Carysfort* for voyage out and home, and J R Brennan to *Castor* and to *Castor* (on commg) for voyage out and home

Surg Lt S Morrow to *Furious* (on recommg)

Surg Lt R W Higgins, M V, to *Pembroke* for R M Infirmary, Chatham

Surg Lt (D) T E Brevetor to *Pembroke* for R N Barracks, Whatham

Surg Comdr M W Mason placed on Ret List at own request.

Surg Capt W L Martin to be Surg Rear-Admiral

Surg Lt-Comdr H Wilks to be Surg Comdr

Mr J K G Way, as Surg Lt, for short service, and appointed to R N Hospital, Haslar, for course

ROYAL NAVAL VOLUNTEER RESERVE

Surg Lt W Caithness to *Victory*, for R N Barracks, for 14 days' training

Surg Sub-Lt E I Puddy to be Surg Lieut

ROYAL ARMY MEDICAL CORPS

Maj M D Ahern to be Lt-Col., and remains secd, vice Lt.-Col R T Brown to ret pay

Maj and Bt Lt-Col C H Turner to be Lt-Col, vice Lt-Col M D Ahern (secd)

The undermentioned Capts to be Majs A E S Pringle-Pattison (Prov), with precedence next below H D F Brand, R H Alexander, R W Galloway, W Frier, F S Gillespie, R R G Atkins (Prov), W E Tyndall, G A Bridge

Capt (Prov Maj) G R Grant is restd to the estabt

Capt J McP MacKinnon is restd to the estabt

Temp Lt. C F McLean relinquishes his commn and retains his rank

J F Wilde to be temp Lt

TERRITORIAL ARMY

The King has approved of the following appointment — To be Honorary Surgeon to His Majesty Col Frederic H Westmacott, C B E, T D, F R C S, Assistant Director of Medical Services, 42nd (East Lancs) Division, in succession to Col E C Montgomery-Smith, C M G, D S O, T D, M D (Retd)

Maj (Prov) J A Stenhouse is confirmed in his rank

R McD Cairns, late R N V R, to be Lt

D S Middleton to be Lt

General List.—Qrmr and Capt D T Dixon retires on account of ill-health and retains his rank

ROYAL AIR FORCE

Group Capt A W Iredell to Headquarters, Inland Area, Stanmore, for duty as Principal Medical Officer

Flying Officers W W Coffey and J Hutchieson to Research Laboratory and Medical Officers' School of Instruction on appointment to Short Service Commissions

Flight Lt (Dental) H J Procter to No 5 Flying Training School, Sealand

Medical Quartermaster and Flying Officer C B Willsher is placed on the retired list on account of ill-health

INDIAN MEDICAL SERVICE

The King has approved the grading of the undermentioned officer with seniority as shown below in supersession of all previous notifications Capt (Prov) W Aitchison (June 20th, 1924)

Temp Lieuts to be temp Capts Dina Nath Ahluwalia, Bhann Datta Sharma Manmohan Nath Khanna

Surg Lt-Comdr S R Johnston, R N has been awarded Sir Gilbert Blane's Gold Medal, he having obtained the highest aggregate marks at the examinations held in 1926 for promotion to the rank of Surgeon Commander

Medical News.

Progress of the London Hospitals —The annual reports of several more of the London hospitals have just been issued

Royal Free —For seven months of last year 54 of the 218 beds were not available owing to alterations in the wards, but 2504 in-patients were treated at an average total cost of £9 16*s* 9*d* each There were more than 32,000 casualty cases Six small rooms for the use of private patients of limited means were opened and have been in constant use Also, two small wards for venereal, obstetric, and septic obstetric cases have been opened, together with a maternity clinic in Essex-road, Islington Lord Riddell lent 50 35 mg of radium The ordinary expenditure exceeded the ordinary income by £17,610

Brompton Hospital for Consumption —Last year 2535 in-patients were treated at a cost of £23 2*s* 1*d* each, and there were 4088 new out-patients Of the 476 beds available 449 were constantly occupied The hospital at Brompton cost over £60,000 and the Frimley Sanatorium over £20,000 to maintain A new wing of the hospital, with X ray rooms, is being provided at a cost of £25,000 (which has not yet been obtained) as a memorial of the late Lord Chevlesmore who was chairman for 21 years

St Mary's, Paddington —There were 4143 in patients, and the average cost per occupied bed was £163, as compared with the average of £184 of the hospitals which come within the purview of King Edward's Fund The annual subscriptions were the largest since 1911, but were still "almost absurdly low"

Seamen's Hospital —The 105th annual report of the Seamen's Hospital Society states that since the foundation of the Society 1,100,000 persons have been treated at the parent hospital at Greenwich, about one-fifth of whom were in-patients There were last year 3168 in-patients at the "Dreadnought" Hospital at Greenwich who cost a fraction under £11 each The Society possesses three other hospitals, including the Hospital for Tropical Diseases in Endsleigh-gardens, a sanatorium, a convalescent home and a dispensary, with a total of 542 beds The income last year exceeded expenditure by more than £9000

Health of Belfast —Dr H W Bailie's report for the year 1925 records the number of births registered in the city as 10,234, equivalent to a birth-rate of 23 4 per 1000 This is a decrease of 0 5 per 1000 compared with the previous year In the preceding ten years, 1915–24, the average annual birth-rate was 25 1 The number of deaths registered was 6131, equivalent to a death-rate of 14 per 1000, a decrease of 0 3 per 1000 compared with the previous year The average number of deaths for the ten years 1915–24 was 6829, being an average death-rate of 16 7 The number of deaths under 1 year of age was 1069, being 17 4 of the total deaths registered This represents a decrease of 3 per 1000 compared with the preceding year 1738, or 28 35 per cent., of the total deaths registered were caused by chest diseases, 575 being due to phthisis 517 to pneumonia, and 646 to other diseases of the respiratory system. Zymotic diseases accounted for 574 deaths, or 9 36 per cent of the total deaths registered 203 of these deaths were caused by diarrhœa, 99 by whooping-cough, 167 by measles, 49 by scarlet fever, 38 by diphtheria, and 18 by typhoid fever The death-rate from phthisis was 1 3 per 1000 of the population, from pneumonia 1 2, and from other diseases of the respiratory system 1 5, showing a decrease of 0 1 from phthisis, of 0 2 from pneumonia, and of 0 1 from other diseases of the respiratory system The death-rate from zymotic diseases was 1 3, an increase of 0 3 compared with the preceding year This increase was due to diarrhœa, measles, and typhoid fever The deaths from typhoid fever numbered 18, compared with 3 in the preceding year, an outbreak of the disease being due to infected milk sent into the city from a dairy situated outside the city No case of typhus fever or of small-pox occurred during the year The case mortality of scarlet fever was 3 per cent and of diphtheria 10 3 per cent There were 8 cases of encephalitis lethargica, of which 7 proved fatal The deaths from this disease in the previous year numbered 30 No case of cerebro-spinal meningitis or of poliomyelitis occurred during the year 299 samples of fresh milk were examined for tuberculosis, and 17 of these (5 7 per cent) were found to be infected In such cases steps are at once taken to prohibit the sale of milk from the infected farm until the dairy herd has been examined by the veterinary inspector of the district and the source of infection has been traced

INDUSTRIAL WELFARE SOCIETY—At the seventh annual lecture conference which opens to-day (Friday) at Balliol College, Oxford, and continues until Wednesday, Sept 15th, lectures will be given by Mr H A Mahony on Dental Service in Industry, and by Dr Innes H Pearse on the Future of Preventive Medicine in Industry, when Dr M L Dobbie Bateman will preside Mr Ralph C Hazell will give Some Experiences and Results of Welfare Work.

ROYAL ALBERT EDWARD INFIRMARY, WIGAN—The report for the year ending March 31st 1926, reports that the number of beds is not nearly sufficient to meet the demands of the large area served by the institution, the waiting-list numbers 150, of whom 80 are women The 3058 in patients who were treated to a conclusion were an increase of a patient a day over the previous year Of the total expenditure of £42,000, £1650 was derived from employees' contributions

FRENCH HEALTH RESORTS—For many years Mme Juppe-Blaise had charge at the Office Français du Tourisme of a bureau, conducted in the interests of medical men desiring information concerning the French spas Mme Juppé-Blaise is now opening an office of similar scope in premises adjacent to the British Medical Association headquarters, and informs us that for the present inquiries about hotels, prices, and travelling arrangements can be directed to her, care of the Financial Secretary, B M A

ALL RUSSIAN OPHTHALMOLOGICAL CONGRESS—The main items in the programme of this Congress, which will be held in Moscow from Sept 27th to 30th, are 1 Organisation of Medical Help in Eye Diseases Measures of Fighting and Preventing Blindness 2 Trachoma and its Prevention 3 Chronic Eye Diseases Methods of Diagnosis and Scientific Investigations 4 Individual Scientific Communications Further information may be obtained from Dr V N Polovtsev at the offices of the Red Cross Society of Russia, 150, Southampton-row, London, W C 1

MATERNAL MORTALITY AND MORBIDITY IN AMERICA—A national programme for the prevention of maternal mortality and morbidity throughout the United States is outlined by the Children's Bureau of the U S Department of Labour in a report on maternal mortality made public on August 30th The report is the work of Dr Robert Morse Woodbury, formerly director of statistical research for the Children's Bureau Dr Woodbury estimated that the total annual number of maternal deaths in the United States is more than 20,000 Comparison of the United States rates of maternal mortality with those of other countries shows that the United States ranks among those having the highest rates, such as New Zealand and Chile Analysis of the causes of maternal deaths in that country shows that the most important single cause is puerperal septicæmia, puerperal albuminuria and convulsions are among other causes noted, also accidents of pregnancy and labour and hæmorrhage Colour and nationality are also important factors In the report the preventability of maternal mortality is considered in the light of the analysis of causes and causal factors It is held that almost all the mortality from puerperal septicæmia is preventable by the rigorous observance of asepsis For the prevention of the most important causes of maternal deaths the essential recommendations by the bureau are Effective supervision by a public health agency over hospitals and over the training and admittance to practice of physicians, midwives, and nurses, and the requirement that all cases must be reported It is considered that other puerperal causes of death may be prevented in a large proportion of cases by proper prenatal and natal care of the mother The problem of prevention is therefore summarised by the Children's Bureau report as that of ensuring to every mother skilled assistance before and during childbirth A preventive programme is suggested by the report, of which the main outlines are as follows (1) Regulation of the practice of obstetrics by requiring a licence to practise from both physicians and midwives by establishing minimum requirements for obtaining such a licence, and by defining and prescribing penalties for malpractice (2) Regulation of public and private hospitals and maternity homes through legal provisions governing the establishment of such institutions, which should be licensed and subject to inspection (3) Legislation for the control of venereal diseases, including the making of these diseases notifiable (4) Requiring that puerperal septicæmia be made notifiable, as is now the case in a number of States (5) Provision through Governmental or public sources of better facilities for training medical and nursing personnel and more adequate clinics hospitals and maternity homes (6) Subsidies in aid of State or local activities by Federal or State governments (7) Educational work directed toward informing mothers of the need of adequate maternity care

BRITISH INSTITUTE OF PHILOSOPHICAL STUDIES—An interesting programme of lectures has been arranged for the forthcoming session beginning Oct 4th In the Michaelmas term the Hon Bertrand Russell will give two courses of lectures (1) on the Problems of Philosophy, (2) on Mind and Matter. Dr T. W Mitchell will deliver ten lectures on Medical Psychology, Prof G Dawes Hicks will deliver ten lectures on the Development of Philosophy since Kant and Prof C W Valentine a course of 20 lectures on General Psychology In the Lent term Dr C Delisle Burns will lecture on the Philosophy of Social Life, and Prof J S Mackenzie on Social Values A full syllabus of lectures can be obtained on application to the Director of the Institute, 88, Kingsway, London, W C 2

Medical Diary.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c

POST GRADUATE HOSTEL Imperial Hotel, Russell square, W C 1

MONDAY Sept 13th—9 P M, Sir William Hale-White, K B E F R C P, will open a discussion on The Days of Richard Bright

FRIDAY Sept 17th—9 P M, Mr E Muirhead Little, F R C S, will open a discussion on Amputation Stumps

All medical practitioners cordially invited

Appointments.

New Sussex Hospital for Women and Children, Brighton COOK, BESSIE E, M B, Ch B Lond, has been appointed Temporary Honorary Assistant Anæsthetist, and SYMONDS, V WINIFRED M R C S, L R C P, has been appointed House Surgeon for a term of six months

The Chief Inspector of Factories has appointed Dr R P GAMMIE to be Certifying Surgeon under the Factory and Workshop Acts for the Bishop's Stortford District of the County of Hertford Dr J P MURPHEY for the Pontesbury District of the County of Salop, Dr F A JUCKES for the Horsham District of the County of Sussex Dr MARY A E SOMERS for the Weston super Mare District of the County of Somerset Dr F C ALTON for the Hollingbourne District of the County of Kent, Dr R J E CHRISTIE for the Earsdon District of the County of Northumberland, and Dr N F GRAHAM for the Tibshelf District of the County of Derby

Vacancies.

For further information refer to the advertisement columns

Ayr County Hospital—H S At rate of £100
Brighton Royal Sussex County Hospital—H S £150
Bristol General Hospital—Sen Res M O £200
Cancer Hospital, Fulham road, S W—Clin Asst £250
Cardiff, Prince of Wales Hospital—H S £100
Cardiff Royal Infirmary—Ophth H S At rate of £50
Dewsbury and District General Infirmary—H S £200
Dublin St Vincent's Hospital—Asst S to Out patient Dept
Edinburgh, Royal Mental Hospital Morningside—Asst M O £350
Evelina Hospital for Children Southwark S E—H P £120
Greenwich Dreadnought Hospital—H P and H S Each at rate of £110
Hospital for Epilepsy and Paralysis Maida Vale, W—Res M O and H P At rate of £150 and £100 respectively
Hospital for Sick Children Great Ormond street, W C—H S, H P, and Asst Cas O Each at rate of £50
Ipswich East Suffolk and Ipswich Hospital—H S £100
Lancashire Asylums Board—Pathologist £1000
Leamington Spa Warneford General Hospital—Res H S £150
Leicester Isolation Hospital and Sanatorium, Groby road—Res M O £350
Lincoln County Hospital—Jun H S At rate of £150
London Homœopathic Hospital Great Ormond street, W C—Res M O £100
Macclesfield, Parkside Mental Hospital—Res Clin Asst £75
Manchester, Ancoats Hospital—H S At rate of £100
Manchester Babies' Hospital Burnage lane, Levenshulme—Res M O At rate of £125 Also Res Clin Asst At rate of £50
Mount Vernon Hospital for Diseases of the Chest Northwood, Middlesex—Res M O At rate of £250
National Hospital for Diseases of the Heart, Westmoreland street W—Res M O At rate of £150
Nottingham General Hospital—Res Cas O At rate of £200
Oswestry Shropshire Orthopædic Hospital—Two H S s £150
Plymouth Homœopathic and General Hospital—H S At rate of £100
Prince of Wales's General Hospital Tottenham N—Two H S s and H P Each at rate of £120 Also Jun H S and Jun H P At rate of £90 each
Rochdale Infirmary and Dispensary—Jun H S £200

Royal London Ophthalmic Hospital City road, E C —Two Refraction Assts Each £100 Also Asst S

Royal Northern Hospital, Holloway, N —Obstet H S Also H S Each at rate of £70

St Helens County Borough —Asst M O H £650

St Mary's Hospital for Women and Children, Plaistow, E —Hon Asst P Also Clin Asst

Salford City —Bacteriologist £600

Salford Royal Hospital, Manchester —H S At rate of £125

Samaritan Free Hospital for Women, Marylebone road, N W —H S At rate of £100

South London Hospital for Women, South Side, Clapham Common, S W —H P and three H S's Each at rate of £50

Stoke-on Trent, North Staffordshire Royal Infirmary —H S £150

Western Ophthalmic Hospital, Marylebone road, N W —Sen and Jun Non Res H S's At rate of £150 and £100 respectively Also Hon Asst S 100 guineas

West End Hospital for Nervous Diseases, Regent's Park, N W —Jun H P At rate of £100

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Newhaven, in the County of Sussex, at Thame, in the County of Oxford, and at Measham, in the County of Leicester

The Home Secretary gives notice that in consequence of the resignation of Col Albert Herbert Tubby, C B , C M G one of the Medical Referees under the Workmen's Compensation Act for the District of Clerkenwell County Court (Circuit No 41), the appointment held by him is vacant Applications for the post should be addressed to the Private Secretary, Home Office, Whitehall, S W 1, and should reach him not later than Sept 30th, 1926

Births, Marriages, and Deaths.

BIRTHS

CALWELL —On Sept 1st at Holland Park avenue, W , the wife of W K Calwell, M D D P H , of a son

CRONIN —On Sept 1st at Westbourne grove, W , the wife of A J Cronin, M D Glasg , M R C P Lond , D P H , of a son

DODD —On Sept 1st, at The Red House Dartmouth grove, Blackheath S E 10, the wife of Dr Fredk H Dodd—a son

FOULKES —On Sept 3rd, at Exeter, the wife of R K Foulkes, M B , B S Lond , of a daughter

HINE —On Sept 6th at Rossmore, Harpenden, the wife of Montague Hine, F R C S of a daughter

HORDER —On Sept 6th, at Findelen, London road, Tunbridge Wells, the wife of Cecil A Horder, F R C S of a daughter

NICHOLSON —On Sept 7th, at a nursing home, Leeds, the wife of Dr James Nicholson Riffa House, Liversedge of a son

VINT —On Sept 2nd, at Oaklands, Langton Green Tunbridge Wells, the wife of Morley Dyson Vint, M A , M B , B Chir Cantab , of a son

MARRIAGES

ANDERSON—ALLEN —On Sept 1st, at St Mary's, Comber, Co Down, William Arthur Anderson, M A , M D to Phebe Elizabeth, only daughter of Mr and Mrs Allen, Unicurval, Comber, Co Down, N Ireland, and The Elms, Iffley Oxford

GROSS—KUTNER —On August 10th, Malcolm Gross, M B , B S Lond , D P H , of Wolverhampton and Clapham, S W , to Adelaide Kutner, of Hampstead

MOSELY—SPURR —On August 24th, at St Marylebone Register Office, Frederick Maurice Mosely, B A Cantab , M R C S L R C P , of London, to Stella Margaret, second daughter of Dr Frederick Spurr of London and Hove Sussex

SCOTT—HOPKIN —On Sept 2nd at Paddington, John A A P Scott, L R C P Lond M R C S Eng , of Tottenham, to Gladys M Hopkin, of Tottenham

WARE—HOPPER —On August 31st, quietly, at Wimbledon, Sydney Arthur Thomas Ware, M R C S Eng , L R C P Lond , of the Sudan Medical Service, to Doris Thorne Hopper, of Torquay

WALSH—LE CREN —On Sept 2nd, at the Parish Church, Elmstead Market Essex Harold Victor Walsh M B , B Ch B A O Belf , of Ipswich, to Jeannette de Lisle, daughter of the late F B Le Cren

WILSON—ALLEN —On August 28th at York, William Brockie Wilson, M C M B Ch B Glasg , to Mary Young Allen, daughter of Mr and Mrs W Y Mercer, late of Homeleigh, Gainsboro'

DEATHS

BOSTOCK —On Sept 4th at Horsham Edward Ingram Bostock, M R C S Eng , L S A J P in his 81th year

DAVENPORT —On Sept 4th suddenly, at Shanghai, Cecil John Davenport F R C S , Medical Superintendent of the Chinese Hospital, Shantung road Shanghai, China, aged 63

MUMMERY —On August 30th at Trevone Bay, North Cornwall, after a short illness John Howard Mummery, C B E , F R C S Eng , L D S of Albert Bridge road, S W , aged 79

TANNER —On Sept 6th, at Eastern Lodge, Kempsey, Worcestershire Richard Canning Tanner M R C S Eng , and L S A , 1861, within five days of his 87th birthday

TONKING —On Sept 4th at Trevu, Camborne, Cornwall John Herbert Tonking, M B Lond , M R C S Eng , L R C P Lond , aged 62 years

VAUGHAN —On August 26th, at Bridgwater, Lieut Colonel W F H Vaughan, M R C S Eng L R C P Lond , late R A M C , son of W Palmer Vaughan

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages and Deaths

Notes, Comments, and Abstracts.

NOTES ON THE VALUE OF SWISS SANATORIUM TREATMENT *

By Alex Sandison, M B , B C Camb , B Sc Lond

THE justification for these notes is the fact that it has been my lot to make two tours of Swiss sanatoria at Montana, Leysin, Davos, Arosa, and elsewhere in the past four years, and during that period I have also had special opportunities for gauging the effect of treatment in Switzerland on a large number of cases of tuberculosis I have thus been fortunate in having facilities on the one hand for obtaining detailed knowledge of typical sanatoria in Switzerland, and on the other for observing their clinical results on a scale not often available to tuberculosis workers in this country It is on the basis of this experience that I have formed the opinions I express

It is a common belief in lay and medical circles that the high altitude, clear air, and sunshine obtainable in Switzerland produce results in the treatment of tuberculosis which are superior to those obtainable in this country On my first visit in March, 1922, I endeavoured to consider the matter in a strictly impartial way, and on my return felt that there was, on the whole, a balance of evidence in favour of Switzerland, but that it was very difficult to determine whether or not any particular case fell within the class that might expect to obtain peculiar benefit Since then I have had opportunity to compare over a longer period the progress of cases treated in Switzerland with those who remained in this country Such comparison does not, so far as pulmonary cases are concerned, show clearly any general superiority of one form of treatment over the other, and in making it I am assuming that the treatment in this country is given in a modern sanatorium situated in a healthy locality, and that the treatment in Switzerland is that provided in a typical Swiss sanatorium at an altitude of 4000–6000 feet

As the result of my second tour in June, 1925, I am more confirmed in the opinion that Switzerland holds out peculiar advantages only to a limited number of cases, that its special value is largely psychological, and that, leaving aside for the moment surgical tuberculosis, the average case of pulmonary tuberculosis is likely *in the long run* to do as well under appropriate sanatorium *treatment in* this country as in Switzerland This conclusion will not be accepted by many Swiss tuberculosis specialists, nor by some in this country In going round Switzerland one is amused by the unanimity with which the value of altitude treatment is emphasised, whilst at the same time one is told that these beneficial effects are only fully obtainable in the locality and at the altitude of particular sanatoria One resort is said to be too windy, but it retorts that the other is too dusty One is too high or too liable to mist, another is alleged to be in a windy valley In truth all statements may be true, but the implication that climatic conditions are ideal where you happen to have an institution, and deleterious elsewhere, can hardly be accepted, and leads the impartial inquirer to the conclusion that they are all equally good or equally bad

To my mind the real truth was expressed by the physician of a well known Swiss sanatorium who said to me "Treatment in Switzerland is *un traitement de luxe* Give me a patient to whom time and money are no object, who can, if necessary, live abroad after his treatment, and who is not worried as to ways and means, and I can almost promise to cure him in the course of years Time is essential, ample funds are essential, for the treatment I give implies the highest standard of comfort and diet But if the patient has only limited time, if his financial resources are slight he will do better to undergo a more intensive treatment, which he can probably receive equally well in England, and be content with the attainment of relative quiescence of the disease rather than complete cure "

I am increasingly of opinion that this expresses the true value of Swiss sanatoria as curative agents The idea that Swiss treatment provides a short cut to cure is not correct, nor do I think it true that save for the definite, though often temporary, psychological stimulation usually apparent in the earlier stages of treatment there is any certainty that benefit of a permanent character will result which might not have been obtained elsewhere In saying this I do not forget certain cases which, for reasons not clearly apparent, have assuredly benefited permanently from Swiss treatment after failing to make progress under other conditions I know of no certain test however, by which such cases can be recognised beforehand Moreover almost every form of treatment for tuberculosis, orthodox or unorthodox, can show cases of this kind, and one is inclined to believe that the improvement is a matter of idiosyncrasy rather than of treatment. Certainly no special form of treatment can on such cases alone be considered of generally applicable value.

---

* Based on a paper read before the Tuberculosis Society

The following are, to my mind, the main advantages and disadvantages of treatment in Swiss sanatoria—i e , altitude treatment—for *pulmonary* tuberculosis as compared with ordinary English sanatorium treatment. I exclude cases obviously unsuitable for altitude—e g , on account of cardiac defects.

Advantages of Treatment in Swiss Sanatoria

(1) *Psychological*.—The complete change of scenery and surroundings undoubtedly produces for a time an increased sense of well-being which has a beneficial effect on the pathological condition, but is rarely sufficiently strong or lasting to effect a permanent benefit. With this benefit, due to climatic and scenic change, are often associated the effects of suggestion. The patient has become imbued with the belief that in Switzerland, and there alone, will he regain his health, and the realisation of his wish produces a mental satisfaction which is at least more helpful to his body than the mental unrest of a man who is denied his dearest wish. Again, however, the physical effects of this wish-realisation are not necessarily permanent and when progress is slow reaction sets in.

(2) *Physical*.—Statistics are so inconclusive that I am inclined to believe that my general impression based on a detailed acquaintance for some years with the progress of cases treated abroad is as likely to be correct as any mass of statistics. Be it said at once that many, perhaps most, cases do improve physically at Swiss sanatoria, and their disease tends towards quiescence or even arrest. But so do many and even most treated in good sanatoria at home, especially the early cases. Swiss sanatoria complain that they do not get the cases early enough. So do English sanatoria, the truth being that good sanatorium treatment anywhere will probably produce good results in any early case. Similarly, Swiss sanatoria say they do not have the cases long enough. Given unlimited time, however, English sanatoria are as likely to produce quiescence or arrest as Swiss.

There are, however, cases where English sanatorium treatment has failed to produce quiescence or arrest, the condition becoming one of stagnation in unstable equilibrium, and in certain cases of this type Swiss treatment does produce good results, giving apparently the stimulation required for further and continued progress. This does not apply to all such cases, and it is most difficult to estimate the likelihood of it doing so in any particular case. It is for this type that I think Switzerland does hold out special advantages. Tuberculosis, however, is such an uncertain disease and sudden improvement occurs in such unexpected conditions, that dogmatism is unwise.

(3) *General Climatic Effect*.—The pure and invigorating air of the Swiss mountains and the large amount of sunshine cannot fail to produce the psychological stimulation I have referred to. Further, the freedom from dust and smoke is an obvious advantage. Certainly a case of tuberculosis is likely to do better in a Swiss sanatorium than in an English town or in damp, foggy, unhealthy conditions anywhere. To regard an English manufacturing town, with its dust, fog and smoke, narrow streets and cramped houses as at all comparable with a Swiss mountain resort is obviously ridiculous, yet such is the comparison implied in many arguments on the climatic benefits of Switzerland. The equivalent of Swiss sanatoria is of course good English sanatoria in healthy country districts. On such a comparison the final results of treatment, in my experience, are very similar.

Disadvantages of Treatment in Swiss Sanatoria

(1) *Expense*.—(*a*) *Travelling expenses* are considerable, especially if the patient has to travel as a stretcher case. (*b*) *Nursing* is nominally included in the fixed daily charge, but nursing at a Swiss sanatorium is a very different thing from what the Englishman is accustomed to and expects. The ordinary Swiss sanatorium nurse has not the training of our nurses, and the proportion of nurses to patients is much smaller than with us. In short, for anything beyond quite simple nursing and domestic service there is little provision in the English sense, and a patient with, for example, a severe hæmoptysis or other condition requiring frequent skilled nursing has to engage a special nurse at considerable additional cost. Thus the expenses of treatment may speedily mount to a very high figure, especially when removal to a less expensive place of treatment is impossible or dangerous owing to distance and the acuteness of the disease. Certain sanatoria run by English doctors with English nurses on English lines must be excepted from these remarks on nursing. (*c*) *Medicines* are invariably charged extra. Swiss chemists are a close corporation with special privileges. It is, I understand, illegal for a doctor in a sanatorium to dispense any drugs other than what is necessary in emergencies. Thus the chemists have a strong monopoly and charge accordingly. (*d*) *General*. Swiss sanatoria are usually commercial concerns. So, of course, are English private sanatoria, but there are degrees of efficiency in the detection of items on which additional charges may be made, and in Switzerland these items, though individually small, may amount to a surprising total in the monthly bill. (*e*) *Kurtaxe*. This local tax may amount to 6*d* or 1*s* a day.

These sources of extra expense could be regarded with more equanimity if there were more certainty of special advantage in return. For the rich they are unimportant, but to the average tuberculous patient these extra charges often produce a financial anxiety which may go far to counteract what special benefits there are in Swiss treatment. Their extent, moreover, is not usually realised before the patient has embarked on the treatment and they often come as a serious shock.

(2) *Diet*.—Swiss sanatoria naturally diet their patients according to continental standards and customs. Breakfast is a ‘café complet,” lunch and dinner are rather heavy meals with a predominance of oily ingredients and made-up dishes with a wearisome reiteration of veal as the staple meat. This is a welcome change for most of us when we go abroad on holiday, but as a continued diet for an Englishman, and especially a sick one, it often becomes wearisome.

I was informed by one medical superintendent that his diet scale was worked out with the greatest accuracy as to the ‘calorie value’ necessary for high altitudes. That may be true enough, but calories are not everything, and food taken without appetite and even with repugnance does not get sufficiently digested to be fully assimilated. This diet question is one of special importance to the patients who have to be in bed and get no exercise. I came across several instances where the patient was justifiably weary of a diet which, though ample in amount, was foreign to his tastes and customs and not sufficiently modified according to the condition of his disease. These remarks do not apply with the same force to the English run sanatoria mentioned in (1) (*b*) above, where the diet is much more like that of English institutions.

(3) *Alcohol*.—Swiss sanatoria lay great stress on forbidding smoking to their patients, but permit considerable use of wines, beer, and even spirits. English sanatoria take the opposite view. The sale of alcoholic liquors is, moreover, a source of revenue to Swiss sanatoria. I was told by one medical superintendent that his committee had called attention to the diminishing receipts on this account. The medical superintendent had rightly retorted that he was glad they were less, but the incident shows a conflict of aim between the management and the medical superintendent of the sanatorium.

Further, there are no licensing restrictions abroad comparable to ours, and it is ridiculously easy for a patient to get what alcohol he likes and when he likes outside, and I fear it is at times too easily obtained within the sanatorium itself. Thus any patient who has a tendency to alcoholic indulgence is usually subjected to considerable temptation. English sanatoria have, of course, their own difficulties with the alcoholic, but in general it may be said that the opportunities for alcoholism are much less in England and the attitude one of more active discouragement.

(4) *Discipline*.—Englishmen do not take kindly to foreign control and the foreigner does not usually know how to handle the Englishman. Hence there are always possibilities of trouble, for there is not the same type or method of discipline in Swiss sanatoria, and the headstrong patient is more likely to run amok. The development of fashionable winter sports near Swiss sanatoria is an obvious potential source of disciplinary trouble.

(5) The *Pension System*.—Apart from sanatoria where there is a resident medical staff, there are numerous so-called sanatoria at Leysin, Davos, Arosa, &c., which are simply boarding houses catering more or less exclusively for tuberculous persons. These “pensions” vary greatly in quality of accommodation—some are almost of sanatorium standard, others cramped and unsatisfactory. The charges are on the whole high, but do not include any medical or nursing attendance, such being separately arranged for, usually with a local doctor who is more or less directly attached to the ‘pension.’ There is rarely any control of the patient, who is practically as free as if he were in his own home. These “pensions” cannot be regarded without careful inquiry as at all equivalent to sanatoria, and their prospectuses give but a very partial indication of their nature.

(6) *Declimatisation*.—By this I mean that prolonged treatment in Switzerland *declimatises* the patient for life and work in this country. Swiss doctors will advocate more or less continuous residence and treatment in Switzerland for two, three, or more years. The result is that the patient comes to believe that he must always fly to Switzerland to avoid the

English winter and, in fact, he does find it harder to keep well in England, although his general condition may have been much improved

For the average tuberculous patient it is an obvious advantage to receive his treatment in climatic conditions broadly similar to those in which he has eventually to return to work The less climatic difference there is between the place of treatment and cure and the place where work can be recommended the more lasting the cure will be *This is in* itself a general argument against prolonged Swiss treatment, for to become acclimatised *to altitude is to become de*climatised to English conditions and makes resumption of work so much *the harder and the more* precarious

Thus, whilst a single year or 18 months in Swiss altitudes need not produce any serious declimatisation, continuous treatment there beyond that period, or regular return throughout each winter for several years, makes it more and more impossible for the average quiescent type of case ever to resume steady work in this country Once again, Swiss treatment is suitable for the man of independent means who can live where he likes, when he likes, but has its dangers *for the average man who has to work for his* living

Surgical, *Non-Pulmonary Tuberculosis*

So far my remarks have had reference to the treatment of pulmonary tuberculosis The value of treatment in Switzerland for surgical tuberculosis requires separate consideration.

There is ample evidence to show the directly beneficial effects of altitude and sun treatment *on surgical tuberculosis* The climate of this country cannot provide light and sun *to the same extent. On the other hand,* the recent developments of artificial light treatment already demonstrate that curative results can be produced by artificial heliotherapy, and the work of Sir Henry Gauvain at Alton teaches us not to disparage unduly our own climate Perhaps the special advantages of Switzerland for surgical tuberculosis are already to a considerable extent capable of reproduction in a "light department" Such artificial heliotherapy is, indeed, often given as an addition to the natural light treatment in Swiss sanatoria, for the sun does not always shine there It is as yet too early to say how far the "Alpine sun" lamp can rival the Alpine sun itself, but it is equally too early to deny its potentialities

The psychological advantages of Switzerland, previously alluded to, hold good in surgical as in non-surgical tuberculosis, and so *for that matter do the general disadvantages* except that the average nursing provision for surgical cases is of a higher standard but often at an extra cost

The present position seems to me to be as follows (1) Swiss treatment has real and specific value for surgical tuberculosis (2) This specific value can apparently be also obtained from artificial light treatment in this country *(3)* If artificial light treatment is available, therefore, it should first be given a trial (4) If the artificial light treatment does *not show good results in a reasonable time* it is legitimate to consider that the case should go to Switzerland and to anticipate good *results there from natural light treatment*

So far I have been considering treatment at altitudes It is necessary for completeness to allude to.

Cases of Tuberculosis Requiring Sun but not Altitude

These cases are typically those with severe chronic bronchitis, asthma, and emphysema added to tuberculosis. To them an English winter is undoubtedly likely to bring recrudescence of active disease with a possibility of fatal result They *cannot* stand altitude treatment, but they do need warmth, sunlight, and freedom from damp and fog Thus, they *are not suitable for* Swiss sanatoria, which are almost invariably situated at considerable altitude, and they can best find the *conditions they require* on the French or Italian Riviera Institutional treatment may or may not be necessary, according *to the severity of the* condition

---

MEDICAL MISSIONARY WORK

In a little book entitled "A Woman Doctor on the Frontier" (C of E Zenana Missionary *Society, 1925, 1s 3d*), Dr Charlotte S Vines has given a series of sketches of medical work as it is carried on in the remote districts of India. Here blood feuds and highway robbery appear to be the chief interests of the people, who die but rarely in their beds The tales now told emphasise the difficulties under which operations can be performed without untoward *results* The same missionary society has published another book, "Flashlights on Chinese Life," which was prepared by the late Dr Mabel Pantin just before her death It contains some vivid little snapshots of Chinese life, its pathos and humour, tragedy, and courage The book is illustrated by a number of photographs and some sketches, and will be welcomed by those who are interested in the life of Eastern peoples and in the efforts of missionaries to improve their physical and spiritual conditions of life

CIVIL SERVICE BONUS

The Ministry of Health gives notice that as from the beginning of the present month the Civil Service bonus will be on the basis of an average cost of living figure of 70 The bonus payable for the six months commencing Sept 1st, 1926, to officers whose salaries do not exceed £500 a year will therefore be one-eighth less than that payable during the preceding six months In the case of salaries over £500 a year the bonus will still be subject to the special arrangements made in 1921

OPHTHALMIC BENEFIT

Only a certain number of the approved societies have adopted the scheme by which their *members are entitled* to a consultation with an ophthalmic specialist for the fee of one guinea, *and since other societies continue to send their* members to opticians, it rests with the specialists concerned *to make their service so successful* that pressure from the members may lead to the general adoption of the scheme *It is essential* that the list of specialists should be carefully scrutinised, a task which we believe has so far been efficiently performed Further, it is essential that the principle of free choice should be maintained, and for this purpose that the insured person should have the opportunity of choosing a specialist from the list Full use of the scheme implies that no unnecessary difficulty will be put in the way of obtaining the necessary recommendation from the panel practitioner stating the need of advice by an ophthalmic surgeon

"£2000 REWARD"

The management of a well-known general hospital has received the following communication addressed "To the Governors"

> *(Confidential)*
>
> Two Thousand Pounds Reward
>
> I will *pay this amount to any* person who will *get me elected* as a surgeon upon the staff of a fairly large infirmary One thousand upon election, *the balance at the* year end (if I still hold the appointment)
>
> This is a bona fide offer
>
> I am anxious to become a "specialist" It is impossible or nearly so, to become a specialist unless elected to a hospital In a town of county borough size as a minimum as practically all the surgery is done in institutions
>
> *Please* use the personal column of the *Daily Mail* under pseudonym of "Lumbar Puncture" in answering in strictest secrecy

The first inference from the communication is that it is not written by a doctor, for no one conversant with *pro*fessional work would believe, even if they thought it possible to buy the post, that to be "a surgeon upon the staff *of* a fairly large infirmary" would ipso facto make the holder of the post a recognised "specialist." On the other hand, the communication may be, despite its odd and unprofessional form, the cry of a disappointed doctor who has some reason to believe that, given the opportunity, he would have made a name for himself as an operating surgeon, but who finds that the public in his particular environment prefer the services of those, possibly his seniors, who are upon the staff of the local hospital We are familiar with instances where this situation has been a hard one, but we know of *no instances where time and proven* merit have not come *to* the rescue

PUBLIC HEALTH IN THE TONGAN ISLANDS

A British *protectorate over the Tongan or* Friendly Islands was proclaimed in 1900 These islands are situated in the Southern Pacific to the *E S F of Fiji and 390* miles therefrom with an area of 385 square miles The estimated population in 1925 was 25,088, all *Tongans with the exception* of about 580 Europeans, 240 half-castes, and 370 natives of other Pacific islands For a long period of years there has been a steady increase in the population, the birth-rate per 1000 in 1924 was 35 9 and the death-rate 18 1 During the year a campaign against hookworm was undertaken The Board of the Rockefeller Foundation *lent* the services of an expert for a preliminary survey and to inaugurate the campaign The native population *responded* to mass treatment with gratifying results, and a beginning was made in the task of improving the sanitary *condition* of the villages and the water-supplies A standard type of fly-proof latrine was adopted and is now being *made* by the Government for sale to the natives The village water-supplies, consisting of large concrete cisterns, *are* being repaired and where necessary enlarged, and measures have been taken to ensure sufficient supplies of clean water *For eight* months of the year—from May to November—the thermometer rarely registers higher than 83° F, *and,* as *the humidity* is comparatively low during these months, Europeans do *not* feel the heat to the same *extent* as in *the groups of* islands to the north During the wet season—from December to March—the temperature ranges *from 65° to 94°,* with a higher humidity Malaria and other tropical fevers are unknown

English winter and, in fact, he does find it harder to keep well in England, although his general condition may have been much improved

For the average tuberculous patient it is an obvious advantage to receive his treatment in climatic conditions broadly similar to those in which he has eventually to return to work The less climatic difference there is between the place of treatment and cure and the place where work can be recommended the more lasting the cure will be This is in itself a general argument against prolonged Swiss treatment, for to become acclimatised to altitude is to become *de*climatised to English conditions and makes resumption of work so much the harder and the more precarious

Thus, whilst a single year or 18 months in Swiss altitudes need not produce any serious declimatisation, continuous treatment there beyond that period, or regular return throughout each winter for several years, makes it more and more impossible for the average quiescent type of case ever to resume steady work in this country Once again, Swiss treatment is suitable for the man of independent means who can live where he likes, when he likes, but has its dangers for the average man who has to work for his living

Surgical, Non-Pulmonary Tuberculosis

So far my remarks have had reference to the treatment of pulmonary tuberculosis The value of treatment in Switzerland for surgical tuberculosis requires separate consideration

There is ample evidence to show the directly beneficial effects of altitude and sun treatment on surgical tuberculosis The climate of this country cannot provide light and sun to the same extent On the other hand, the recent developments of artificial light treatment already demonstrate that curative results can be produced by artificial heliotherapy, and the work of Sir Henry Gauvain at Alton teaches us not to disparage unduly our own climate Perhaps the special advantages of Switzerland for surgical tuberculosis are already to a considerable extent capable of reproduction in a "light department" Such artificial heliotherapy is, indeed, often given as an addition to the natural light treatment in Swiss sanatoria, for the sun does not always shine there It is as yet too early to say how far the "Alpine sun" lamp can rival the Alpine sun itself, but it is equally too early to deny its potentialities

The psychological advantages of Switzerland, previously alluded to, hold good in surgical as in non-surgical tuberculosis, and so for that matter do the general disadvantages except that the average nursing provision for surgical cases is of a higher standard but often at an extra cost

The present position seems to me to be as follows (1) Swiss treatment has real and specific value for surgical tuberculosis (2) This specific value can apparently be also obtained from artificial light treatment in this country (3) If artificial light treatment is available, therefore, it should first be given a trial (4) If the artificial light treatment does not show good results in a reasonable time it is legitimate to consider that the case should go to Switzerland and to anticipate good results there from natural light treatment.

So far I have been considering treatment at altitudes It is necessary for completeness to allude to

Cases of Tuberculosis Requiring Sun but not Altitude

These cases are typically those with severe chronic bronchitis, asthma, and emphysema added to tuberculosis To them an English winter is undoubtedly likely to bring recrudescence of active disease with a possibility of fatal result They cannot stand altitude treatment, but they do need warmth, sunlight, and freedom from damp and fog Thus, they are not suitable for Swiss sanatoria, which are almost invariably situated at considerable altitude, and they can best find the conditions they require on the French or Italian Riviera Institutional treatment may or may not be necessary, according to the severity of the condition

---

MEDICAL MISSIONARY WORK

In a little book entitled "A Woman Doctor on the Frontier" (C of E Zenana Missionary Society, 1925, 1*s* 3*d*), Dr Charlotte S Vines has given a series of sketches of medical work as it is carried on in the remote districts of India Here blood feuds and highway robbery appear to be the chief interests of the people, who die but rarely in their beds The tales now told emphasise the difficulties under which operations can be performed without untoward results The same missionary society has published another book, "Flashlights on Chinese Life," which was prepared by the late Dr Mabel Pantin just before her death It contains some vivid little snapshots of Chinese life, its pathos and humour, tragedy, and courage The book is illustrated by a number of photographs and some sketches, and will be welcomed by those who are interested in the life of Eastern peoples and in the efforts of missionaries to improve their physical and spiritual conditions of life

CIVIL SERVICE BONUS

The Ministry of Health gives notice that as from the beginning of the present month the Civil Service bonus will be on the basis of an average cost of living figure of 70 The bonus payable for the six months commencing Sept 1st, 1926, to officers whose salaries do not exceed £500 a year will therefore be one-eighth less than that payable during the preceding six months In the case of salaries over £500 a year the bonus will still be subject to the special arrangements made in 1921

OPHTHALMIC BENEFIT

Only a certain number of the approved societies have adopted the scheme by which their members are entitled to a consultation with an ophthalmic specialist for the fee of one guinea, and since other societies continue to send their members to opticians, it rests with the specialists concerned to make their service so successful that pressure from the members may lead to the general adoption of the scheme It is essential that the list of specialists should be carefully scrutinised, a task which we believe has so far been efficiently performed Further, it is essential that the principle of free choice should be maintained, and for this purpose that the insured person should have the opportunity of choosing a specialist from the list Full use of the scheme implies that no unnecessary difficulty will be put in the way of obtaining the necessary recommendation from the panel practitioner stating the need of advice by an ophthalmic surgeon

"£2000 REWARD"

The management of a well-known general hospital has received the following communication addressed "To the Governors"

> (*Confidential*)
>
> Two Thousand Pounds Reward
>
> I will pay this amount to any person who will get me elected as a surgeon upon the staff of a fairly large infirmary One thousand upon election, the balance at the year end (if I still hold the appointment)
>
> This is a bona fide offer
>
> I am anxious to become a "specialist" It is impossible or nearly so, to become a specialist unless elected to a hospital In a town of county borough size as a minimum as practically all the surgery is done in institutions
>
> Please use the personal column of the *Daily Mail* under pseudonym of "Lumbar Puncture" in answering in strictest secrecy

The first inference from the communication is that it is not written by a doctor, for no one conversant with professional work would believe, even if they thought it possible to buy the post, that to be "a surgeon upon the staff of a fairly large infirmary" would ipso facto make the holder of the post a recognised "specialist" On the other hand, the communication may be, despite its odd and unprofessional form, the cry of a disappointed doctor who has some reason to believe that, given the opportunity, he would have made a name for himself as an operating surgeon, but who finds that the public in his particular environment prefer the services of those, possibly his seniors, who are upon the staff of the local hospital We are familiar with instances where this situation has been a hard one, but we know of no instances where time and proven merit have not come to the rescue

PUBLIC HEALTH IN THE TONGAN ISLANDS

A British protectorate over the Tongan or Friendly Islands was proclaimed in 1900 These islands are situated in the Southern Pacific to the E S F of Fiji and 390 miles therefrom with an area of 385 square miles The estimated population in 1925 was 25,088, all Tongans with the exception of about 580 Europeans, 240 half-castes, and 370 natives of other Pacific islands For a long period of years there has been a steady increase in the population, the birth-rate per 1000 in 1924 was 35 9 and the death rate 18 4 During the year a campaign against hookworm was undertaken The Board of the Rockefeller Foundation lent the services of an expert for a preliminary survey and to inaugurate the campaign The native population responded to mass treatment with gratifying results, and a beginning was made in the task of improving the sanitary condition of the villages and the water-supplies A standard type of fly-proof latrine was adopted and is now being made by the Government for sale to the natives The village water-supplies, consisting of large concrete cisterns, are being repaired and where necessary enlarged, and measures have been taken to ensure sufficient supplies of clean water For eight months of the year—from May to November—the thermometer rarely registers higher than 83° F, and, as the humidity is comparatively low during these months, Europeans do not feel the heat to the same extent as in the groups of islands to the north During the wet season—from December to March—the temperature ranges from 65° to 94°, with a higher humidity Malaria and other tropical fevers are unknown

Cameron Prize Lectures

ON

SOME RESULTS OF STUDIES IN THE PHYSIOLOGY OF POSTURE

Delivered at the University of Edinburgh, May 19th and 20th, 1926,

By RUDOLPH MAGNUS,
PROFESSOR OF PHARMACOLOGY, UNIVERSITY OF UTRECHT

Part II *

B General Static Reactions of the Mid-brain Animal

After cross-section through the calamus scriptorius the animal behaves like a spinal preparation without static functions (only the tonic neck reflexes are present), if under the influence of one or other stimulus the muscles get some "background-tonus," the change of such tone after turning of the neck can be demonstrated After a cut just in front of the entrance of the eighth nerves the animal shows decerebrate rigidity and has active tonic neck and labyrinthine reflexes The centres which give rise to the rigidity and the labyrinthine reflexes are situated in the caudal part of the medulla oblongata They are including their afferent and efferent paths, extracerebellar

This picture remains in the main unchanged if the cutting of the brain-stem is performed more orally Then also reflexes on the abducens and trochlearis nerves and neck righting reflexes appear, but the general condition remains the same The latter does not change fundamentally, until the cut is made through the most oral part of the mid-brain in rabbits and cats through the foremost half of the anterior colliculi and in front of the origin of the oculomotor nerves The condition of the animal is then no longer "decerebrate" but becomes "normal" The difference is caused by the absence of rigidity, the appearance of a normal distribution of tone, and the presence of the righting function That means that the animal is able from all abnormal positions by its own active movements to right itself into the normal position and to keep this position against all disturbing influences

If the cuts are made more orally, no *essential* differences in the static behaviour can be observed It makes no appreciable difference in the static behaviour whether the basal ganglia are present or have been extirpated If the fore-brain is left intact the influence of optic stimuli upon posture in some species of animal can be demonstrated Extirpation of the cerebellum gives rise to very characteristic symptoms, but all the static reactions which are described in these lectures are present, and can still be evoked with great certainty Some of these reactions seem to be exaggerated in the decerebellated animals

The most convenient way to study all static reactions of the mid-brain animal is to prepare a thalamus preparation Then the heat regulation is undisturbed, the function of the mid-brain centres is not greatly interfered with by operative shock, and in consequence of the absence of the fore-brain no voluntary movements disturb the observation It is clear, however, that control experiments on mid-brain animals should always be made For this purpose the rabbit, which is very resistant to shock, should be chosen

1 *The Normal Distribution of Tone*

The distribution of muscle tone in the whole body musculature in the mid-brain and thalamus animal differs from that in the decerebrate preparation by the absence of the exaggerated enduring contracture of the static muscles These have only just sufficient tone to carry the weight of the body and to balance it The result is the "normal" attitude and posture of the thalamus, as compared with the "caricature" attitude of the decerebrate preparation

In the former even slight muscular actions are sufficient to change the position of the body

While in the decerebrate preparation the flexor muscles are completely deprived of tone, they are in the mid-brain animal just as much under tonic innervation as they are in the normal animal In consequence of this the flexor muscles participate much more in all sorts of reflexes than they do in decerebrate rigidity Reflex inhibitions of flexor muscles can, on the basis of their "background" contraction, easily be demonstrated The experiments of Girndt have shown how the reflex behaviour of a thalamus animal is influenced by the presence of flexor reflexes

The attitudinal reactions of the thalamus and mid-brain animal differ also from those of the decerebrate preparation by the presence of flexor responses Changes in the position of the head, under decerebrate rigidity, give rise to reactions chiefly in the extensor muscles, whereas in the mid-brain and thalamus animal flexors and extensors are influenced simultaneously. The change of tone in the flexors and extensors follows the laws of reciprocal innervation, increased extensor tone being accompanied by flexor inhibition and vice versa This makes the static reactions more smooth and exact

After ordinary reflex excitations the extensor muscles do not show the prolonged after-effect of the decerebrate preparation, and this also prevents the appearance of stiff movements The decerebrate preparation shows no positive supporting reflex and only a very imperfect negative phase. The whole supporting reaction, which changes the limb from the movable and instrumental condition into a static support and vice versa, is only fully developed in the mid-brain or thalamus animal

All these observations show the fundamental part the mid-brain centres play in the whole static function It is to be expected that the study of the thalamus animal will disclose many interesting facts, and that, just as the last 20 years have with such great success been devoted to the study of the decerebrate preparation of Sherrington, in the next period the mid-brain animal must be the chief object for further careful analysis

2 *The Righting Reflexes*

Analysis has shown that the righting function is carried out by the cooperation of five groups of different reflexes It is, therefore, intelligible how it should be impossible to study the action of one of these groups by paralysing the sensory nerve-organs, from which this group of reflexes takes its origin The result of such a procedure would only be that the four other groups of reflexes would compensate for the loss of function so produced, and that probably no disturbance of righting would result Here, as in other complex functions of the central nervous system, it is not permissible to draw conclusions from the isolated paralysis of one set of reflex centres. A complete understanding of the whole mechanism is only possible if the experiment starts from the "zero condition" in which *all* centres or mechanisms concerned in this complex function have been paralysed, so that it is completely absent in the animal. Then in subsequent experiments one or another centre of sense organ may be spared and the function arising under this new condition compared with the "zero condition" It is thus possible to study every single reflex while excluding all others and, finally, to analyse the cooperation of these several reflexes towards a general function

(a) *The "Zero Condition"*

In the case of the righting reflexes the zero condition is fulfilled if a thalamus or mid-brain animal after extirpation of both labyrinths is held freely in the during normal respiration) in order to overcome this resistance

---

* Part I appeared in The Lancet last week

I do not know whether prolonged subjection to this positive pressure is capable of doing the delicate lung alveoli harm, but it is a fact that if this resistance to the return stream be removed the anæsthesia is very much quieter and more peaceful In order to overcome it I have resorted to the practice of double intubation—that is to say, side by side with the catheter a second and larger tube is passed by way of which the return stream will travel This is made of a special thin-walled, hard rubber which does not easily collapse, and is tied to the catheter and passed into the trachea with it Its advantages in producing quiet breathing, freedom of airway, however much the jaw be depressed, and in preventing bubbling of blood which often obscures the surgeon's view when only a single catheter is used, are so considerable that I am sure one is justified in using it in nearly every case In intranasal operations, for instance, the use of a post-nasal sponge becomes quite unnecessary.

OPERATIONS ON THE MOUTH, TONGUE, AND THROAT

When the mouth is the site of operation, the nose is chosen as the route for delivering the anæsthetic—the catheter being passed down one side and the return airway down the other. As a preliminary measure and before starting the anæsthetic, in order to prevent bleeding which may obscure one's view with the laryngoscope, it is advisable to spray the nose with adrenalin, or a mixture of cocaine and adrenalin The catheter and the return tube should be well lubricated with sterile vaseline to facilitate their passage through the nose

As originally described by me,[3] this method consists in passing the catheter through the nose, and then, by the aid of a direct laryngoscope and a special guiding rod, catching it up in the pharynx and directing it into the trachea; but with practice I have found that the catheter can nearly always be manipulated through the cords quite easily if it is stiffened by a wire stylet, and bent to form about half a circle With stylet in place it is passed down the nose and then, by direct vision, guided into the trachea. It does occasionally happen, however, that a deviate septum or an incorrect curve on the stylet will necessitate the use of the guiding rod, by means of which one can pick up the catheter at its eye and guide it between the cords The return tube has a stouter stylet which runs through a hole in the metal angle-piece at the top of the tube, and it can be moved from side to side in the pharynx by rotating the stylet which obtains some purchase on the metal angle-piece

I had a special guiding rod made to pick up this tube as one does the catheter,[4] and although generally the stylet is sufficient, on occasions it proves very useful In this way the air passages are shut off from the mouth, which can be full of blood without danger of any entering the trachea There are three sizes of return tube, which are chosen according to the size of the patient

It is in these operations about the mouth and throat (big dental extractions, tonsil dissections, excision of tongue, &c) that double intubation is especially useful, for not only is the anæsthesia tranquil, and the airway maintained, however much the jaw be depressed, but the surgeon's work is not hampered by the constant need for swabbing away blood which has bubbled up from the mouth

Single Intubation

In the majority of cases I suppose an intratracheal anæsthetic is given, because by its use the airway can be controlled without holding up the jaw or otherwise handling the patient's head, and the anæsthetist can keep well out of the surgeon's way It is only in very few cases that a positive pressure is really necessary

It occurred to me that if one could pass a single tube of adequate size through the mouth (or nose) and into the trachea, and allow the patient to breathe backwards and forwards through it, a state of things much more akin to that which occurs during natural respiration would be achieved Moreover, the first part of the respiratory passages would be just as well cut out; and, provided the tube were sufficiently large to fill the glottic opening, there would be no danger of blood or other material entering the trachea This was found to be no more difficult than passing the smaller return airway for use with a catheter, in fact, the single operation takes less time A special stylet was made for controlling the tube when passing it through the mouth.

This single intubation has the added advantages that a rebreathing bag may be attached, and gas and oxygen given in the ordinary way—this gives a much more satisfactory anæsthesia, and also (when necessary for such cases as diathermy) chloroform from a Junker's bottle may be very easily administered through it

CHEST CASES

In operations where the pleural cavity is to be opened it is a great advantage to be able to control the collapse of the lung, and where necessary to keep it blown up This can be easily done by double intubation combined with some method of checking the return stream For this purpose a simple apparatus provided with a shutter and pressure gauge is connected with the return tube

We found first of all from our experiments on dogs, and later on when administering anæsthetics to human beings, that the symptoms of collapse from which patients suffer when a pneumothorax is first produced can be very largely prevented by maintaining a positive pressure in the lung of 15–20 mm Hg, and only reducing it very slowly should the surgeon require the lung to be collapsed

SUMMARY

(1) Intratracheal anæsthesia is the method of choice for all operations upon the head, nose, mouth or throat, where the anæsthetist cannot maintain a satisfactory anæsthesia and a free airway by the ordinary methods without seriously interfering with the surgeon

(2) When there is blood in the upper air passages it is a necessity—effectively preventing its entrance into the bronchi and air cells, and lessening the liability to pulmonary complications In double or single intubation we have a refinement which is of great help to the operator in shutting off the air passages and giving him a clear field for operating

(3) In intrathoracic operations where normal respiratory mechanism is interfered with, double intubation enables one not only to maintain respiratory exchange, but to regulate the collapse of the lung, and so save the patient much shock

---

[3] Brit Med Jour 1920, ii, 590

[4] Brit Med Jour, June 30th, 1923

ADVISORY COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH —Prof Vernon Herbert Blackman, Sc D, F R S, Prof Frederick George Donnan, C B E, D Sc, LL D, F R S, and Prof Frederick Alexander Lindemann, Ph D, F R S, have been appointed by Order of Council dated August 20th, to be members of the Advisory Council to the Committee of the Privy Council for Scientific and Industrial Research, in the place of members who have retired on the completion of their terms of office

Mr Henry Kimpton announces the forthcoming appearance of a book on the "Surgical Treatment of Goiter," by Dr Willard Bartlett, with a foreword by Dr Charles Mayo, a fifth edition of Hajek's "Pathology and Treatment of the Inflammatory Diseases of the Nasal Accessory Sinuses," translated and edited by Dr Joseph D Heitger and Dr French K Hansel, and a manual of "Clinical Laboratory Procedure," for the use of the general practitioner, by Dr Robert A Kilduffe, city bacteriologist, Atlantic City

The easiest way to demonstrate these reflexes is to hold a normal animal in the lateral position in the air, the head also being kept firmly in the lateral position. In this condition the neck righting reflexes tend to keep the body in the lateral position. If now the animal is placed upon the table and the head kept continuously fixed in the lateral position, the body is seen to be righted into the normal position in spite of the tendency of the neck righting reflexes to keep the body on its side. The active stimuli for these reflexes arise in the sensory nerve-endings of the body surface, which are stimulated asymmetrically by the pressure against the ground. If by means of a weighted board the other side of the body is also pressed upon, the symmetry of stimulation is restored and the body therefore remains in the lateral position.

In climbing animals similar strong influences arise from the feet and hands, and cause orientation of the body towards trees, walls, roofs, &c.

(*f*) *Optical Righting Reflexes*

The four groups of above-described reflexes are the only righting reflexes of the thalamus animal, and also of intact rabbits and guinea-pigs. In higher mammals such as cats, dogs, or monkeys with intact cerebrum the eyes contribute towards the orientation of the head. In order to study these reflexes the delabyrinthised animals must be examined freely in the air. Then it can be seen that the head, if blindfolded, is completely disorientated and shows no correction from any abnormal position. If the eyes are opened, the head is brought into the normal position as soon as the visual attention of the animal is attracted, and it fixes with its eyes something in its environment such as food, a fly, the assistant, &c. If this visual attention ceases, the head may go back into any abnormal position.

The exact position of the centres for these reflexes has not yet been determined. It may be supposed that they are localised in the optical cortex.

All these reflexes coöperate in the intact animal, and enable the body to attain and to keep a certain position. If the animal is moving on the ground all these reflexes coöperate in the same sense, but if the animal is climbing a vertical surface or beneath a horizontal roof—i e, of a cage—sometimes conflicting influences come into play and lead to interesting results.

The integrity of every single factor of this complicated function is doubly ensured. The head is righted by labyrinthine, tactile and optical stimuli; the body by proprioceptive and tactile stimuli. The tactile stimuli act separately upon the body and upon the head. The orientation of the head and of the body takes place in relation to gravity, sustaining surface (ground, &c), distant environment (optical) and to parts of the body—a very complex combinátion of reflexes. It is indeed an interesting task to watch the coōperation and interference of these reflexes during the movements of various animals in their ordinary life.

3 *The Centres for the Righting Reflexes.*

The position and distribution of the centres for the righting reflexes have been determined by Rademaker. In a great number of experiments with cats and rabbits he made transverse sections through the brain-stem at different levels, determined those reflexes which were present after recovery from the shock of the operation and those which were absent, and made in every case a careful histological examination of a complete series of microscopical sections. A synopsis of all experiments showed the most caudal level for each reflex at which a transverse section of the brain-stem did not interfere with its function. The conclusion could then be drawn that the centres of that special reflex must, together with the afferent and efferent paths, be situated caudally from this level. Then cutting across somewhere behind this level led to the disappearance of the reflex. In this case the conclusion that the centre must be situated orally to this level cannot be drawn with absolute certainty, because it is always possible that the centre lies behind the cut, but is thrown out of action by shock or diaschisis. In this way it was found by Rademaker that section through the anterior part of the anterior colliculi and just orally from the points of origin of the third nerves does not interfere with the presence of normal labyrinthine and body righting reflexes, whereas a section carried out some millimetres more caudally—i e, behind the origin of the third nerves—destroys the above-mentioned righting reflexes. In the latter case the neck righting reflexes are still present. Their centres are arranged more caudally in the pontine region. Extirpation of the dorsal half of the mid-brain does not interfere with the presence of the righting reflexes. Total extirpation of the cerebellum leaves all righting reflexes, including the body righting reflexes, intact. By these experiments it is proved that the centres for the righting reflexes lie in the ventral part of the mid-brain behind a section just in front of the third nerves. The disappearance of the labyrinthine and body righting reflexes after cutting the mid-brain behind the third nerves suggested the possibility that the centres for these reflexes were situated just at the level of the oculomotor nerves. The most remarkable nucleus here is the red nucleus, the magno-cellular part of which gives origin to the rubro-spinal tract, which crosses at about the same level in the decussation of Forel. As median sagittal splitting of the mid-brain destroys the righting reflexes in question, the probability is increased that the red nuclei are the centres sought for. Therefore Rademaker proceeded to make dorsal or ventral median incisions into the mid-brain, which divided it just deeply enough to leave Forel's decussation undisturbed. Animals with such incisions showed the righting reflexes. But as soon as the cut was made a little deeper, so that the rubro-spinal tracts were severed, the labyrinthine and the body righting reflexes acting upon the body disappeared. Other experiments of Rademaker showed that the righting reflexes were normally present after the destruction on both sides of the substantia nigra and the pyramidal tract. Also lesions lateral to the red nuclei did not prevent the appearance of the righting reflexes. By all these experiments it is proved that in the cat and rabbit the red nuclei are the centres for the labyrinthine righting reflexes and the body righting reflexes which act upon the body. The efferent path for these reflexes is the rubro-spinal tract. The *body righting reflexes acting upon the head* have their centres at the same level but not in the red nuclei. The centres for the optical righting reflexes are cortical, the centres for the neck righting reflexes lie more caudally in the pontine or upper bulbar region. The exact course of the afferent paths for all these reflexes is still to be determined. It is only known that they do not pass through the cerebellum.

In the thalamus animal extirpation of the red nuclei or isolated severance of the rubro-spinal tracts causes still another change. It leads to the disappearance of the normal distribution of tone and the appearance of decerebrate rigidity. The presence in the thalamus animal of rubro-spinal impulses counterbalances the influences from the centres in the lower bulbar region, which, if acting alone, cause the extensor tone to be greatly increased with diminution of flexor tone.

The following experiment of Rademaker's was very striking. In a thalamus animal a thread was drawn through the medial plane of the mesencephalon in the dorso-ventral direction just behind Forel's decussation. The animal showed normal distribution of tone, all righting reflexes, and normal sitting and running. Then slight traction was applied to the thread just sufficient to divide the rubro-spinal decussation. The result was maximal decerebrate rigidity, paralysis of the labyrinthine righting reflexes, and the body righting reflexes acting upon the body.

While in the thalamus animal cutting of the rubro-spinal tract causes such marked effect, in the normal animal with intact fore-brain the same operation has much less drastic consequences. The extensor tone air without touching the ground Then no attempt will be made by active movements to bring the head or the body into the normal position If the animal is held by the pelvis in the lateral or supine position the whole body, including the head remains also in this position The " zero condition " of animals with *intact* cerebrum differs according to species Rabbits and guinea-pigs, in which the eyes are not used for righting purposes, if delabyrinthised and held freely in the air, show no righting reflexes Cats, dogs, and monkeys, on the other hand, must be also blindfolded

Under all these conditions the animal is completely disorientated and cannot bring its head or body into the normal position

(*b*) *Labyrinthine Righting Reflexes*

If their labyrinths are intact then all thalamus animals as well as normal rabbits and guinea-pigs and blindfolded normal dogs, cats, and monkeys, when investigated freely in the air, show the following reflexes —

If the animal is held by the pelvis in the normal position the head also assumes the normal position If the pelvis is held in the lateral position the head is by rotation brought into the normal position It is possible to turn the pelvis from one lateral position into the other, while the head remains in the normal position In whatever position the pelvis be supported—e g , supine or vertical with the head above or below—the head itself is always held in the normal position

These reflexes act primarily on the neck muscles They are originated in the labyrinths and disappear after labyrinth extirpation They also disappear after detaching the otoliths by centrifuging For the discussion as to which otolithic maculæ are responsible for the labyrinthine righting reflexes we must divide these reflexes into two groups

1 The *asymmetrical righting reflexes* bring the head from asymmetrical—e g , lateral—positions into symmetrical positions about a vertical plane

2 The *symmetrical righting reflexes* provide that out of all possible symmetrical positions the normal position is taken.

The asymmetrical righting reflexes are evoked from the maculæ sacculi This is proved by the fact that after unilateral labyrinth extirpation the resting position of the head is no longer the normal position, but the lateral position . from which it must be concluded that the maculæ concerned cannot lie in one plane, so that the utricular maculæ cannot be responsible for these reflexes The asymmetrical righting reflex after unilateral labyrinth extirpation is very strong, if the head is kept in the lateral position with the intact labyrinth below , then the saccular otolith pulls on the macula The head comes to rest and the reflex therefore reaches its minimum, if the intact saccular macula lies horizontal with the otolith pressing upon it In this case therefore it can be proved that the maximum of stimulation in the macular epithelium must be evoked by the pulling, and the minimum stimulation by the pressing otolith The utricular maculæ are probably the point of origin of the symmetrical righting reflexes. This has been concluded from experiments, in which the labyrinths of guinea-pigs have been paralysed step by step with cocaine, so that first the saccular and then the utricular reflexes disappeared, while the reflexes from the canals preserved their function for some time longer

In every case the symmetrical righting reflexes bring the head into such a position that the utricular maculæ lie horizontally, so that the otoliths press upon the sensory epithelium This reflex then reaches its minimum and the head comes to rest

The labyrinthine righting reflexes provide for orientation of the head in relation to space, gravity being the controlling influence

(*c*) *Body Righting Reflexes Acting upon the Head*

For an isolated demonstration of these reflexes we start again from the " zero condition," and hold a labyrinthless thalamus or intact animal (blindfolded or not according to the species) freely in the lateral position in the air Then the head also will be in the lateral position. We now place the animal upon the table, and notice that immediately after the body of the animal comes into contact with the ground the head is rotated towards the normal position This reflex is evoked by the asymmetric stimulation of the pressure sense organs on the body surface This can be proved by compensating for the asymmetry of stimulation—e g , by placing a weighted board upon the upper side of the animal, so that the pressure upon each side of the animal is the same The head then falls back into the lateral position If the board is taken away the head is again righted If the animal then be lifted from the ground, the head returns to the lateral position These observations show the importance of tactile stimuli for the orientation of the head By these influences the head is orientated in relation to the ground or other surfaces with which the body of the animal comes into contact Reflexes of this sort can be evoked not only from the surface of the trunk but also from the soles or palms In this way the heads of climbing animals, such as monkeys, squirrels, &c , are orientated towards the objects upon which the animal is climbing

These reflexes also play a rôle in the correction of abnormal positions of the head After unilateral labyrinthectomy the rotation of the head towards the operated side, which is often very distinct, becomes greatly diminished if the animal be placed on the ground

In this way two active influences cooperate in righting the head the one in relation to gravity, the other in relation to the ground

(*d*) *Neck Righting Reflexes*

The neck righting reflexes orientate the body in relation to the head When, by the combined action of the labyrinthine and body righting reflexes, the head is restored to the normal position, while the trunk still remains in the original abnormal position (e g , the lateral), then the neck is twisted This evokes a reflex by which the thorax is brought into symmetry with the head This may give rise to a rotation of the lumbar region, which in turn causes a similar reflex upon the hind part of the body, so that finally the whole body has followed the head into the normal sitting position In a similar way dorsiflexion of the head gives rise to lordosis of the whole vertebral column Ventroflexion is followed by a curving of the whole body in the ventral direction Inclination of the head towards one shoulder evokes curving of the vertebral column with the concavity to this side

All these influences can be immediately seen if an intact animal be held freely in the air with the pelvis in all different positions The head is then primarily brought into the normal position, and the fore-part of the body follows the head, whereas the pelvis is prevented from doing so by the hand supporting it Several of these reflexes can easily be demonstrated in the supine position of the animal , movements of the head in different directions evoke in this position very marked reactions upon the hind part of the body The neck righting reflexes make it possible, by simple movements of the head, to bring the body of even very strong animals on its side

(*e*) *Body Righting Reflexes Acting upon the Body.*

The neck righting reflexes ensure the orientation of the body in relation to the head , the body righting reflexes right the body in relation to the ground (or any surface with which the body comes into contact—e g , in climbing) These reflexes make it possible for the body to be righted, even if the head is not in the normal position

BLOOD-SUGAR IN THE NORMAL AND DIABETIC

BY C D SHAPLAND, M B, B S LOND,
RESIDENT PHYSICIAN, RUTHIN CASTLE.

AT one time it was believed that the blood-sugar concentration remained at a practically constant level, even a large carbohydrate meal producing no increase in the amount of circulating sugar Pavy was of the opinion that the liver prevented any rise in the blood-sugar concentration, and if for any reason the liver failed in its function and a hyperglycæmia resulted, the excess of sugar would be immediately excreted in the urine

In 1911, however, Baudouin[1] found that there was a slight increase in the amount of blood-sugar one hour after a meal, an observation which was confirmed and slightly extended by Frank[2] and Reicher and Stein[3] Two years later Jacobsen[4] showed that the rise in blood-sugar occurred much earlier than one hour after a meal, and indeed, might be present within five minutes of a dose of sugar, a maximum concentration was usually reached in from 15 to 30 minutes after the dose of sugar, and in seven cases the blood-sugar had returned to its original level after 60 minutes These observations have been confirmed by Bang, Graham MacLean, and many others, and, during the last five years, the changes in blood-sugar concentration following the ingestion of a definite quantity of carbohydrate have been found of practical value in the diagnosis of early mild cases of diabetes and anomalous types of glycosuria

The changes in blood-sugar concentration which occur in youth, old age, in diabetes and obesity after the ingestion of a fixed quantity of cane sugar are dealt with in the first part of this paper In the second part the daily variations of the blood-sugar seen in normal and diabetic individuals on weighed diets are described and illustrated

TEST BLOOD-SUGAR CURVES AFTER INGESTION OF CANE SUGAR

(a) *Method*

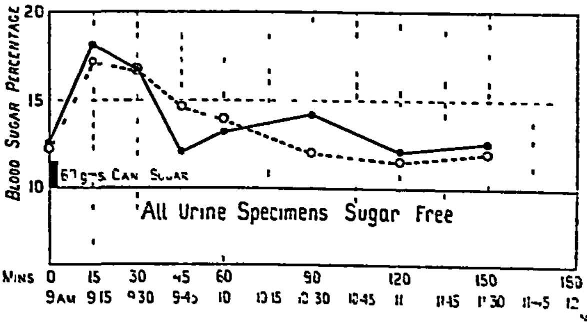
The blood-sugar curves were obtained in the following manner After the subject of the experiment had fasted for about ten hours the bladder was emptied and the urine collected, at the same time 0 2 c cm of blood was taken for sugar estimation, 60 g of cane sugar dissolved in 6 oz of water flavoured with lemon-juice were given, and thereafter samples of blood were taken every 15 minutes for the first hour and at half-hourly intervals for a further two hours The urine passed at the end of each hour was tested for sugar with Fehling's solution, and if present, its quantity determined gravimetrically The sugar in the blood samples was estimated by MacLean's method When the results are graphically recorded the variations form a blood-sugar curve

(b) *Curves in Health*

Fig 1 shows the effect of the ingestion of 60 g of cane sugar on the blood-sugar concentration of a *healthy young adult* From the resting level of 0 12 per cent the blood-sugar rises rapidly to 0 18 per cent, this maximum being attained in 15 minutes after taking the sugar The blood-sugar now begins to fall, and after 45 minutes is even lower than the fasting level Following this stage there is a slight secondary rise before the blood-sugar settles down to its normal fasting level All the urine specimens from this subject were sugar-free

Fig 1 shows also the average blood-sugar curve (dotted line) obtained from *ten healthy individuals* whose ages ranged from 20 to 40 years The curve displays the same general features as the previous curve From the resting level of 0 12 per cent the blood-sugar concentration rises quickly and attains its maximum of 0 17 per cent in 15 minutes The time taken to attain the highest point may sometimes be increased, according to MacLean[5] the highest figure may not be attained until as much as one hour after taking the sugar, but in this series the longest time in a healthy adult under 40 years of age has been 45 minutes Variations, no doubt, depend mainly upon inequalities in the digestive functions, such as the rate of discharge of the sugar through the pyloric sphincter, the volume of the intestinal contents, the extent and nature of bacterial digestion, and the rate of absorption, but, speaking generally, in healthy subjects the highest blood-sugar reading should occur within an hour of taking the sugar The maximum concentration attained varies a good deal; the highest in this series were 0 20 per cent, the lowest 0 16 per cent, a good average being 0 17 to 0 18 per cent Naturally, as the blood-sugar concentration is changing from minute to minute it is a matter of chance whether one of the quarter-hourly samples coincides with the point of highest rise or not

FIG 1



Sugar tolerance test The continuous line shows curve from normal subject the dotted line is a composite curve from ten healthy subjects aged 20–40 years

Immediately after the maximum figure is reached the blood-sugar begins to fall, and this fall is almost as rapid as the initial rise, so that in a healthy young subject the blood-sugar is usually little above the fasting level some 90 minutes after the ingestion of the sugar, frequently, indeed it is even below the original level at this time In this series (Fig 1) the shortest time for the blood-sugar concentration to swing back to its fasting level was 45 minutes, the longest 120 minutes, and the average time 90 minutes from the taking of the sugar All the urine specimens from these subjects were sugar-free

(c) *Curves in Diabetes*

In *diabetes* the blood-sugar curve is of a very different type Fig 2 shows such a curve, taken from a case of moderate severity. The blood-sugar rises from the raised fasting level of 0 15 per cent and reaches the high maximum of 0 33 per cent. after 45 minutes Thereafter the fall is gradual, even after three hours the blood-sugar has not fallen to its original level Sugar appeared in the urine, 2 8 g being present in the first hour's specimen, 2 5 g in the second, and rather less than 0 2 g in the third.

In Fig 2 the dotted line represents a composite curve obtained from *ten diabetic patients* aged 20 to 60 years The typical features of a diabetic blood-sugar curve are well shown Starting from the raised fasting level of 0 17 per cent the blood-sugar rises steadily until, after 45 minutes, it has attained the high maximum of 0 29 per cent The point of greatest concentration was reached at its earliest in 30 minutes, at its latest in 90 minutes, the average interval being 45 minutes from the ingestion of the sugar The highest blood-sugar reading at the period of maximum rise was 0 39 per cent, the lowest 0 22 per cent, and the average 0 29 per cent, but the actual height to which the curve rises depends not only on the severity of the disease and the quantity of sugar ingested, but also on the height from which the curve starts and whether this fasting level has been reduced or not by is, however, increased, but much less so than in the thalamus preparation Only if, in addition to the rubro-spinal bundles, the pyramidal tracts are also severed, does there follow a marked increase of extensor tone The pyramidal tract has the function of partly counterbalancing the influence exerted in the spinal cord by the hind bulbar centres, which tend to increase the extensor tone We see thus that the tone and excitability of the spinal centres is governed by influences arising in the brain, a part of these tending to shift the mechanism in the direction of increased extensor tone, another part counterbalancing this influence with the result that both groups of muscles get equally their right share

4 *Righting Reflexes in Man*

The study of righting reflexes in man is still in its infancy. We know that these reflexes are present here also, but a careful analysis along the lines shown by animal experimentation has not yet been carried out, and not much is known about the way in which they cooperate towards providing the erect posture Landau, Schaltenbrand and others have begun the study in children during their first developmental stages, in which they acquire the erect posture and learn how to stand and to walk. Only when this pioneer work has been accomplished will an understanding of pathological conditions be possible

Labyrinthine righting reflexes can be demonstrated in children who are blindfolded and held by the pelvis in different positions in the air The head can then be seen to be moved towards the normal position (Schaltenbrand)

Neck righting reflexes are very active in man In children they have been studied by Landau, who showed that babies in the prone position usually bring the head by dorsiflexion into the normal position, and this is followed by strong lordosis of the vertebral column with extension of the limbs Passive ventroflexion of the head causes disappearance of the lordosis so that the whole body becomes ventrally concave Schaltenbrand published photographs of babies in which rotation of the head causes the body to roll from the supine into the lateral position, a reflex which, according to Zingerle, can be demonstrated in many patients Text-book photographs of gymnasts give ample evidence of the presence of similar neck righting reflexes in normal adults

Our own experience teaches that the optical righting reflexes in man play a very important rôle Of this many examples could be given It is sufficient to remember that in aviation the exclusion of visual impressions when the aeroplane is passing through mist or clouds makes orientation practically impossible Often when the aviator emerges from the clouds and can once more see the ground, he finds that he has been completely disorientated with respect to the earth

The " zero condition," in which all righting reflexes are suppressed, is realised if labyrinthless deaf-mutes are submerged under water Then no body righting reflexes can be evoked, optical orientation is absent, and the labyrinths are functionless As a consequence of this such patients will be drowned if no care is taken to help them out of the water

Experiments of Garten and his pupils on an inclining chair clearly demonstrated the great influence of the body righting reflexes evoked by the contact with the surface of the seat Even when labyrinthine impulses were made as ineffective as possible and the eyes were closed, there was a very precise estimation of the smallest deviations from the horizontal plane It is a pity that his early death prevented Garten from completing this research and from placing his experimental subjects under " zero conditions "

As to the relative influence of the different sensory organs for orientation it can be said that optical and tactile influences play a very important rôle in man, whereas the part played by the labyrinths is probably less than in rabbits and guinea-pigs These observations tend to show that in the mammalian series the rôle of the labyrinths decreases

Final Remarks

In concluding, I wish to draw your attention to the fact that the whole righting apparatus, with the only exception of the cortical centres for the optical righting reflexes, is arranged subcortically in the brain-stem, and in this way made independent of direct voluntary influences The attitudinal as well as the righting reactions are involuntary If under the influence of cortical impulses the normal position of the body be disturbed, the brain-stem apparatus is ready to restore it, so that every new cortical action finds the body in a normal starting position without previous voluntary effort

By the action of the subcortical mechanisms described in these lectures the different sense organs are always brought into the normal relation with the external world For the nerve-endings in the skin this is accomplished by the action of the above described attitudinal and righting reflexes In the case of the eyes a very complicated reflex mechanism has been developed differing in various species of animals, which regulates the position of the eyes in relation to the environment Here also labyrinthine and neck reflexes come into play The result of all these arrangements is that the sense organs are righted in relation to the external world, so that every sensory impression, before being transferred to the cortex cerebri, has already acquired a certain special condition (local sign) depending on the previous righting functions acting upon the whole body or parts of it In this way the action of involuntary brain-stem centres plays a very important part in conscious activities, especially as regards spatial sensations

All these things have not yet been worked out in detail, and as these lectures are addressed to an audience of students I am glad to say There is work enough left for you to do !

References

F Arndts Ein Beitrag zur Frage nach den der Lagewahrnehmung dienenden Sinnesfunktionen, Ztschr f Biol, 1924, lxxxii, 131 Zur Frage nach den der Lagewahrnehmung dienenden Sinnesfunktionen, Pflüger's Arch. f d. ges Physiol, 1924, cciv, 539

S Cobb Review on the Tonus of Skeletal Muscle, Physiological Reviews, 1925, v, 518

A Forbes The Interpretation of Spinal Reflexes in Terms of Present knowledge of Nerve Conduction, Physiological Reviews, 1922, ii, 361

J F Fulton and E G T Liddell Electrical Responses of Extensor Muscles During Postural (Myotatic) Contraction, Proc Roy Soc, 1925, xcviii, 577

O Girndt Physiol Beobacht an Thalamuskatzen, II Mitt, Pflüger's Arch f d ges Physiol, 1926

A De Kleyn Experimental Physiology of the Labyrinth, Jour of Laryngology and Otology, 1923, p 646

A. Landau Über motorische Besonderheiten des zweiten Lebenshalbjahres, Monatschr f Kinderheilk., 1925, xxix, 555

E G T Liddell and C S Sherrington Reflexes in Response to Stretch (Myotatic Reflexes), Proc Roy Soc B, 1924, xcvi, 212 Further Observations on Myotatic Reflexes, Proc Roy Soc, B, 1925, xcvii, 267

R Magnus Körperstellung, Berlin 1924 (This book gives a complete review up to 1923) The Experimental Basis for Theories on Vestibular Function, Proc Roy Soc of Med, Section of Laryngol and Otol, 1924, xvii, 11 Croonian Lecture Animal Posture, Proc Roy Soc, B, 1925 xcviii, 339

E A Blake Pritchard Die Stützreaktion, III Mitt, Pflüger's Arch f d ges Physiol, 1926

G G J Rademaker Die Bedeutung der roten Kerne und des übrigen Mittelhirnes f. Muskeltonus, Körperstellung und Labyrinthreflexe, Berlin, 1926

G Schaltenbrand u O Girndt Physiol Beobacht an Thalamuskatzen, I Mitt, Pflüger's Arch f d ges Physiol, 1925, ccix, 333

G Schaltenbrand Normal Bewegungs und Haltungs und Lagereaktionen bei Kindern, Deutsch Zeitschr f Nervenheilk, 1925, lxxxvii, 23,

R Schoen Die Stützreaktion, I u II Mitt, Pflüger's Arch f d ges Physiol, 1926

C S Sherrington Problems of Muscular Receptivity, Nature, June 21st and 28th, 1924

A Simons Kopfhaltung und Muskeltonus, Zbl f d ges Neurol u Psychiatrie, 1925, xl, 372

H Zingerle Klin Studien über Haltungs und Stellreflexe, sowie andere autom Körperbewegungen beim Menschen, J f Psychol u Neurol, 1925, xxxi, 330

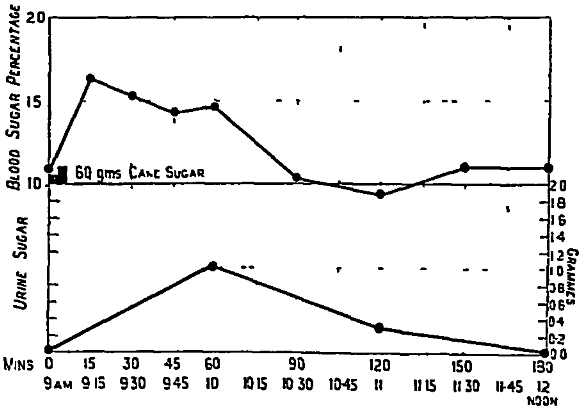
dextrose is absent from the urine of normal individuals is accepted If, on the other hand, the views of Benedict and Osterberg,[11] who find that dextrose is constantly present in normal urine in amounts up to 0 1 per cent , are held, then there is no absolute renal threshold, and the latter must be defined as the critical point in blood-sugar level below which the sugars of blood and urine run parallel, above which a large excess of sugar escapes into the urine (Macleod)

Whichever view is held there is no doubt that above a certain level of blood-sugar concentration a large amount of sugar appears in the urine , this generally lies in health between 0 16 and 0 18 per cent for the whole blood, and somewhat higher, about 0 19 per cent , for the plasma The figure varies in different individuals and, in this series, averaged between 0 18 and 0 20 per cent for the whole blood A difference is often observed in the threshold value if the latter is determined both on the basis of a rising and descending curve of sugar concentration in the blood Thus in Fig 3 sugar did not appear in estimable quantities in the urine until the blood-sugar concentration had reached 0 21 per cent , whereas it was still being excreted when the blood-sugar had fallen to 0 16 per cent This phenomenon is of practical importance, and, according to John, "glycosuria must be interpreted not only in its relation to the synchronous blood-sugar content and to the level of kidney permeability to sugar, but also in its relation to the blood-sugar variations during the preceding period during which the urine was secreted "[12]

A striking phenomenon in the curve of the healthy subject (Fig 3) is the intervention of the storage mechanism directly the blood-sugar concentration approaches the normal renal threshold for sugar This storage mechanism is so efficient that even if sugar ingestion is pushed to the limit of digestive tolerance it is rarely possible to produce a demonstrable glycosuria in a normal individual It is, indeed, doubtful if alimentary glycosuria can occur in perfect health , should it occur in a subject with a normal renal threshold for sugar, it indicates a defect in dealing with excess of carbohydrate and, therefore, the patient should be regarded as a potential diabetic.

In many cases of diabetes—in my experience especially the more severe—the renal threshold may be raised This elevation of the threshold of the kidney for sugar was at one time looked upon as a protective adaptation, limiting as it does the amount of sugar lost in the urine Nowadays, however, it is generally regarded as being disadvantageous to the patient, for the blood can contain more sugar than usual without its appearance in the urine Hence urine examination does not give a correct impression of the clinical condition With the urine containing little or no sugar dietetic restrictions are likely to be relaxed, hyperglycæmia, therefore, will probably occur more often, hyperglycæmia which is probably the cause, and certainly the concomitant, of many of the secondary changes and complications of the disease, and which taxes still further the already overworked and malfunctioning islet tissue of the pancreas

FIG 4

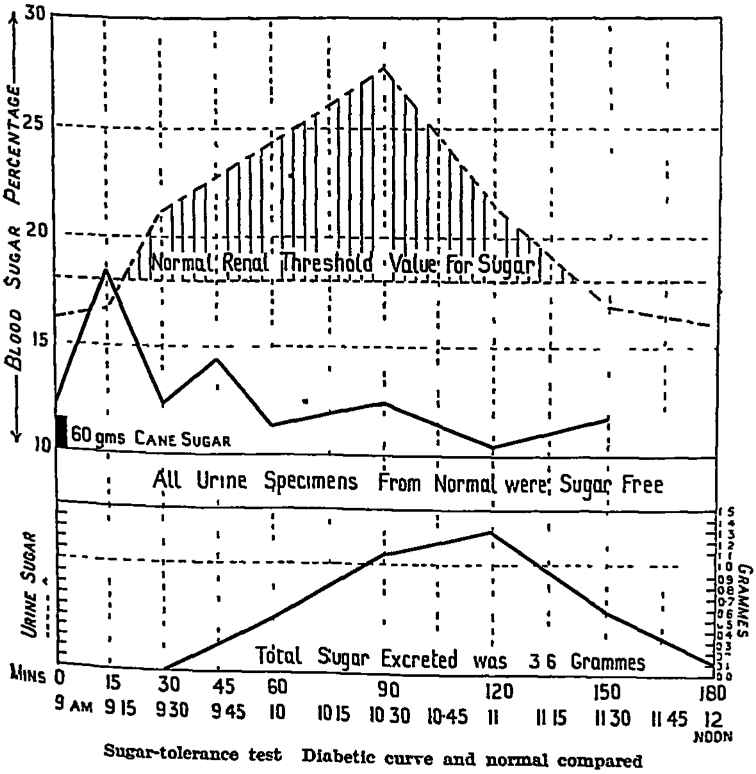


Sugar tolerance test Curve from a case of "renal glycosuria"

In a review of 50 cases of diabetes of varying severity Pickering[13] discusses various points connected with the renal threshold from a clinical standpoint He finds a greater proportion of high thresholds among the mild cases and suggests that a high renal threshold is not necessarily an unfavourable sign The threshold in his series, however, was not determined by blood-sugar curves, and a comparison of his results with those here recorded would not be strictly accurate

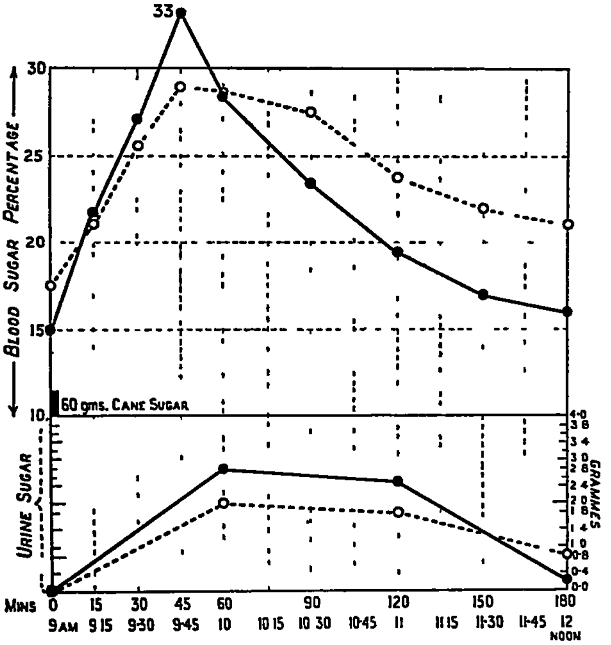
Just as the kidney threshold for sugar may under certain conditions become raised, so is there a clinical state in which the threshold is lowered This condition, which is generally known as "renal glycosuria," was described by Klemperer[14] in 1896 The number of cases reported has grown largely since blood-sugar observations became general in the investigation of glycosuria In most cases the patient is healthy, and the only abnormality discovered is a small amount of sugar in the urine, usually less than 5 g in the 24 hours Fig 4 shows a blood-sugar curve taken from such a case It presents the ordinary features of a normal blood-sugar curve, the only difference being the slight lowering of the point of maximum rise when compared with

FIG 3



Sugar-tolerance test Diabetic curve and normal compared treatment Following the attainment of the point of highest rise the blood-sugar concentration begins to fall, but the decline is slow and gradual, so that even after three hours it has not fallen to its original level In only one of these cases did the blood-sugar regain its fasting level in three hours, in the remaining cases the average estimation at the third hour exceeded the average fasting level by as much as 0 04 per cent

Fig. 2.



Sugar-tolerance test Continuous lines show curve from a diabetic subject the dotted lines represent composite curve from ten diabetic subjects aged 20–60 years

In each case the specimen of urine taken at the end of the ten hours' fast was sugar-free, but those taken at the end of the first, second, and third hours from the ingestion of the cane sugar all reduced Fehling's solution, an average of 2 0 g of sugar being present in the first specimen, 1 8 g in the second, and 0 8 g in the third

(d) *Comparison of Diabetic and Normal Curves*

When the blood-sugar curve obtained from a diabetic subject is compared with that taken from a young healthy individual (Fig 3) three important differences present themselves First, the blood-sugar concentration in the diabetic rises very much higher than it does in the healthy subject and far exceeds the normal renal threshold, secondly, sugar appears in the urine of the diabetic, but not in that of the normal; and lastly—most important of all—in diabetes the blood-sugar takes a very much longer time to return to its original level Briefly, then, the blood-sugar curve in health shows a rapid rise, an almost equally rapid fall, the maximum concentration does not exceed the renal threshold, and sugar does not appear in the urine, in diabetes, on the other hand, the rise is rapid but much more prolonged, the fall is gradual and long drawn out, the renal threshold is exceeded, and sugar appears in the urine

Certain features of these blood-sugar variations after taking sugar are not well understood. MacLean has discussed the mechanism fully and the following is based upon his views The rapid rise in blood-sugar concentration which occurs immediately after the ingestion of sugar is an expression of the fact that absorption into the blood stream is taking place rapidly and, for a while, keeps ahead of the mechanisms of storage and utilisation The fall, however, which follows in the normal curve so soon after the maximum concentration has been reached is more difficult to explain It cannot be due to diminution in the rate of sugar absorption, for in the diabetic the blood-sugar continues to rise—in this case for one and a quarter hours after that of the normal had begun to fall, the amount of sugar absorbed during this time being sufficient to raise the sugar content of the diabetic's blood by 108 mg per 100 c cm As the abrupt fall in the normal curve cannot be ascribed to the cessation of absorption it may be due to (1) the sugar being excreted by the kidneys, (2) a sudden rise in the katabolism of sugar, or (3) the sugar being removed from the blood and stored more quickly than it is absorbed The first alternative can readily be excluded, for all the urine specimens from the normal subjects were sugar-free during the course of the experiment With regard to the second, there is no doubt that some of the sugar is burnt at once, for it is well known that both heat production and the respiratory quotient rise immediately after a carbohydrate meal, remain raised for some five or more hours,[6] and then gradually fall In this case, however, the rise and fall in blood-sugar concentration was over in one hour from taking the sugar, if the whole of the latter had been completely metabolised in that time it would represent the utilisation of about 240 calories in one hour from carbohydrate alone As the subject lay quietly in bed it is hardly possible that this quantity of sugar could have been burnt up in so short a time Moreover, Johansson[7] has shown that after the ingestion of 200 g of glucose the rise in carbon dioxide output lasts as long as six hours before falling to the fasting basis Hence some of the sugar must have been stored in the body

The rapid fall in the normal blood-sugar curve which occurs so soon after the maximum has been attained must be assumed, therefore, to be due to the sudden intervention of a storage mechanism, the activity of which is so great that the later stages of absorption are completely masked by it In the diabetic patient, on the other hand, this mechanism is absent or deficient The diabetic curve is, therefore, a truer picture of the rate of absorption than is the normal, though the result is complicated by a loss of sugar in the urine and by a certain amount of sugar katabolism

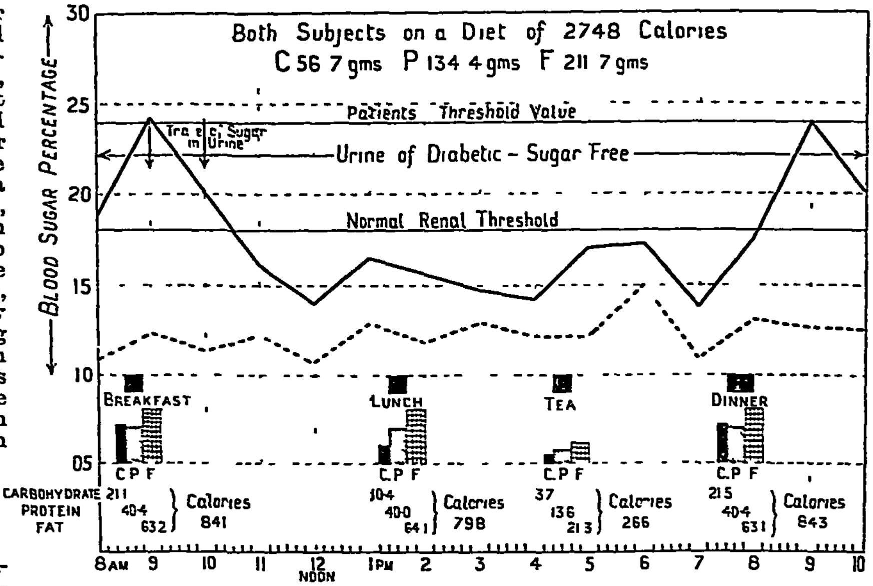
The muscles and liver are the main sugar store houses of the body, in diabetes the ability to store and to utilise sugar is defective or absent An immense amount of work has been done during the last decade on the question of sugar storage and the relative parts played by the liver, muscles, and pancreas The whole question is most complex, but "since glycogen is stored in the liver of depancreatised dogs following the administration of carbohydrate and insulin, and since the respiratory quotient under the same conditions will rise markedly, it is, therefore, evident that the beginning and end of carbohydrate metabolism is dependent upon insulin" (Joslin)[8] It may be assumed, therefore, that just as the prolongation of the blood-sugar curve in diabetes is due to a deficiency in the internal secretion of the pancreas, so is the rapid fall in health dependent on the integrity of the pancreas and its hormone The exact way in which insulin acts is not yet clear, the experiments of Buchner and Grafe,[9] who found that there was a rise in the oxygen consumption and respiratory quotient of thin slices of various tissues in an oxygenated Ringer's solution containing glucose when insulin was added thereto, show that insulin has an action upon all the organs of the body It is probable, however, that insulin acts chiefly in the liver and the muscles, its action being of an oxidative-synthetic character which leads in part to the formation of glycogen together with hexose phosphate and intermediate sugars from glucose, and also to an oxidation of the latter[10]

Another point of interest shown in Fig 3 is the leakage of sugar which occurs in the diabetic when the renal "threshold" is exceeded By the "threshold" of the kidney for sugar is meant the percentage level of sugar in the blood above which an amount of sugar recognisable by clinical tests appears in the urine, this definition is only strictly correct if the view that

MacLean has shown that the ingestion of 20 g of glucose will produce as high a degree of hyperglycæmia as will a dose of 50 g, but the 21 g of carbohydrate taken by this subject at breakfast and dinner were mixed with 40 g of protein and 63 g of fat, which would retard the processes of digestion and absorption The blood-sugar of the normal, even on this low carbohydrate diet, showed a substantial rise—to 0 15 per cent—after tea, this was followed by a rapid fall and then a slight elevation after the evening meal

The variations in the blood-sugar concentration of the diabetic (who was then an early mild case of *three months'* duration, and had received dietetic treatment only) were much greater Starting from the high fasting level of 0 19 per cent. the blood-sugar rose rapidly to over 0 24 per cent directly after breakfast and then gradually fell until, by noon, it had dropped to 0 14 per cent There was then a slight rise, but lunch produced no effect on the blood-sugar, which slowly fell during the afternoon until tea was taken, there was then an elevation which reached its maximum at 6 P M Dinner, just as breakfast, produced a great rise, the maximum concentration of 0 24 per cent being attained at 9 P M, one hour after the completion of the meal The blood-sugar then began to fall but at 10 P M, when the observations were concluded, it was still high—namely, 0 20 per cent All urine specimens from the normal subject were sugar-free, as were those from the diabetic with the exception of the specimens at 9 and 10 A M, each of which contained a trace of sugar

FIG. 5.



Blood sugar variations of a diabetic compared with that of a normal individual

(*d*) *Effect of Insulin on the Daily Variations*

The variations in blood-sugar concentration of a healthy subject aged 24 years and a young diabetic aged 21 receiving insulin are described here in illustration Both individuals were put on the diet of reduced carbohydrate value which was given to the subjects of the previous two observations, and blood-sugar estimations were made hourly throughout the day and night for a total of 23 hours Urine specimens were collected hourly during the day and twice during the night—at 2 and at 5 A M.

The normal curve started from a fasting level of 0 13 per cent and showed a slight rise followed by a rapid fall after breakfast Thereafter lunch produced a small elevation with a gradual fall during the afternoon, tea resulted in a greater rise, which reached its maximum about 6 P M, but even the figure at this hour was little higher than the fasting one at 8 A M Dinner had scarcely any effect on the blood-sugar concentration, which afterwards fell slowly until 1 A M, then remained fairly stationary for about three hours and rose again slightly towards 5 A M As would naturally be expected, the average blood-sugar level during the night was slightly less than the average level during the day, the latter figure (from 8 A M to 9 A M inclusive) being 0 124 per cent, the former (from 10 P M to 6 A M inclusive) being 0 118 per cent

The variations in the blood-sugar concentration of the diabetic, a case of moderate severity treated for a month with insulin, were much greater Starting from the high fasting level of nearly 0 24 per cent the curve rose, despite the 12 units of insulin which had been given at 8 A M, to 0 30 per cent, but then a rapid fall occurred so that the low figure of 0 11 per cent was reached at noon, this rapid drop being due to the action of the insulin injected at 8 A M. After lunch there was a steady rise in blood-sugar, which was quickened after tea, and had reached its maximum at 6 P M A further dose of 12 units of insulin was given at 7 P M, and this effectively checked the usual after-dinner rise, the blood-sugar concentration falling uninterruptedly until midnight There was then a slight secondary rise with a drop at 4 A M., after which the curve rose and was still rising when these observations were concluded All urine specimens from both subjects were sugar-free with the exception of those at 9 and 10 A M from the diabetic which together contained about 1 1 g of sugar

CONCLUSIONS

(*a*) Cane sugar or sucrose when ingested on an empty stomach by a healthy young subject produces in suitable quantities a definite blood-sugar curve which is similar to that given by glucose when taken in similar amounts under the same conditions

(*b*) Cane sugar in the diabetic subject under these conditions produces, like glucose, a blood-sugar curve which differs materially from that seen in health

(*c*) These curves are of value in the diagnosis of anomalous types of glycosuria

(*d*) Both in advanced years and in obesity of long standing the blood-sugar curve tends to approach the diabetic type, in early cases of obesity, however, the carbohydrate tolerance is sometimes increased.

(*e*) In diabetes—especially the more severe cases—the renal threshold for sugar tends to become raised.

(*f*) The blood-sugar variations during the day on an ordinary diet may in health amount to as much as 0 078 per cent of sugar The main elevations in blood-sugar concentration are seen after the meals containing the bulk of the carbohydrate of the diet, but a secondary elevation tends to occur towards the late afternoon, a rise which may be associated with the slow production of sugar derived from protein metabolism

(*g*) The variations in blood-sugar concentration seen normally in health during the day occur also in diabetes, but in an exaggerated form These excessive that seen in most normal individuals after the ingestion of 60 g of cane sugar This is easily understood when it is considered that there is a loss of sugar in the urine directly the blood-sugar concentration rises above the lowered threshold level The patient from whom this curve was obtained is a young man aged 24, who, beyond some colic delay, is in good health On a diet of some 2200 calories with 200 g of carbohydrate he passes about 3 g of glucose in the 24 hours The urine does not contain albumin The glycosuria was discovered during a life insurance examination

(e) *Curves in Old Age and Obesity*

Turning once again to the blood-sugar curve in health it is of interest to note that whereas in infancy and up to 3 years of age the blood-sugar concentration (as Spence has shown [15]) rises but slightly after a dose of sugar, yet as age advances the curve tends to approach the diabetic type in that the rise becomes somewhat higher and the fall more prolonged The curve from the older subjects has a slightly elevated fasting level, the rise in blood-sugar is slower and more prolonged, the maximum concentration attained is higher, and the fall of the curve more gradual than in youth

These features are demonstrated also in cases of *obesity*, an inability to deal with excess of carbohydrate being a characteristic of the majority of obese subjects In a small proportion of cases of obesity, however, the blood-sugar curve suggests an increased rather than a decreased carbohydrate tolerance It would seem probable that in the early stages of obesity there is an increase in the carbohydrate tolerance—an increase which, no doubt, partly determines the laying down of fat in the storage reservoirs of the body In later stages, however, owing probably to the excessive and continuous strain on the insulin secreting cells of the body a gradual diminution in carbohydrate tolerance occurs, and should tolerance still further diminish, diabetes is the natural sequel The elderly obese diabetic is a common clinical entity, and the association of obesity and diabetes has long been known. The conclusion may be drawn that both in obesity of long standing and in old age the body, presumably through deficiency of the islet cells, is less able to deal so effectively as hitherto with excess of carbohydrate.

(f) *Curves obtained with Glucose and Lævulose*

MacLean [5] has shown that all the ordinary sugars—glucose, maltose, galactose, and lactose—give definite sugar curves after ingestion, curves which closely resemble that obtained with cane sugar, though he finds that lactose gives a slow and rather prolonged rise Lævulose, however, when given in moderate doses, produces no appreciable rise in the blood-sugar concentration in health Lævulose appears to be normally dealt with in the liver, and should this organ be deficient either as a result of diabetes, toxæmia, or gross disease, then lævulose will give a blood-sugar curve very much the same as that obtained with cane sugar

On account of this lack of effect on the blood-sugar concentration in health lævulose has come to be used as a test for hepatic efficiency.

Diurnal Variations in Blood-sugar

(a) *Method*

Throughout a day of 15 hours, in which the subjects of the experiment adhered as closely as possible to their normal existence, blood and urine specimens were collected hourly for sugar estimation At breakfast a certain proportion of carbohydrate, protein, and fat was taken, at lunch half the quantity of carbohydrate was given, but the same amount of protein and fat as at breakfast, at tea a third of the quantity of carbohydrate, protein, and fat as at lunch, while at dinner were taken the same quantities of the essential foodstuffs as at breakfast Meals were served to each individual at about the same time, and were eaten as nearly as possible at the same rate

(b) *Variations in Healthy Persons on Ordinary Diet*

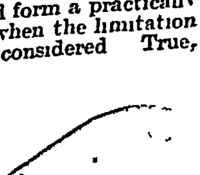
The findings obtained in two *normal subjects* on a diet of about 2770 calories made up of 350 g of carbohydrate, 100 g of protein, and 100 g of fat (a normal one for an ordinary workman doing an "eight hours' day") may be given as an illustration Breakfast (C, 132 g, P, 30 g, F 30 g) taken between 8 30 and 8 50 A M. produced a rise in the blood-sugar concentration of both subjects, but more especially in one whose blood sugar reached the normal renal threshold without producing, however, any glycosuria By 10 A M the blood-sugar had fallen again in both subjects and remained fairly steady until lunch (C, 66 g, P 30 g; F, 30 g) which was taken between 1 20 and 1 40 P M Curiously enough, this meal failed to produce any rise in the blood-sugar in either subject, probably owing to the fact that the carbohydrate was largely given in the form of starch, which is somewhat slowly digested, and hence produces no sudden flooding of the blood stream with the products of carbohydrate hydrolysis During the afternoon the blood-sugar tended to fall in both subjects, but tea (C, 22 g; P, 10 g, F, 10 g) taken between 4 20 and 4 40 P M. produced a substantial rise, despite the small carbohydrate intake, and in both subjects the maximum concentration of blood-sugar was attained about 6 P M Thereafter there was a sudden fall, and then another rise after the evening meal (C, 131 g P, 30 g; F, 30 g) which was taken between 7 30 and 8 P M. Finally, in both subjects the blood-sugar concentration had fallen to normal by 10 P M—that is, two hours after the completion of the evening meal All the urine specimens from these subjects (who were aged 35 and 41 years) were sugar-free

The rise in blood-sugar concentration which occurred in the above subjects towards the late afternoon has been a constant finding both in the normal and diabetic individuals in this series of experiments The causation of this is not clear It can hardly be ascribed to the carbohydrate intake at the afternoon meal, since this amounted—in the diabetic diet—to less than 4 g It is probable that about this time of the day there is a mobilisation of the glycogen reserves of the body with a consequent increase in the amount of circulating glucose, though the possibility of this rise being due to the gradual production of sugar derived from protein metabolism must also be considered

(c) *Variations in Healthy Persons and Diabetics on Diabetic Diet*

The blood-sugar variations which occur throughout the day in *health* are seen also in *diabetes*, but in this condition they are exaggerated In Fig 5 the blood-sugar variations of a *young diabetic* aged 21 are compared with those of a healthy subject of 24 years Both individuals received a diet of approximately 2750 calories, containing about 55 g of carbohydrate, 135 g of protein, and 210 g of fat As in the previous experiment, the same quantities of carbohydrate, protein, and fat were given at breakfast and at dinner, half the amount of carbohydrate, but the same quantities of protein and fat as at breakfast and dinner, were taken at lunch, and a third of these latter amounts of the essential foodstuffs were given at tea

In health both protein and fat produce little or no effect on the blood-sugar, indeed, after protein ingestion "the production of sugar is apparently so gradual that no immediate difference in blood-sugar can be obtained as the result of protein feeding, even in advanced diabetes" (MacLean) It is not surprising therefore, that the blood-sugar concentration of the normal subject (dotted line) should form a practically straight line throughout the day when the limitation of the carbohydrate intake is considered True,



and some idea of the capacity of the kidney for water excretion may thus be obtained This diuresis, however, does not appear to interfere in any way with the final concentration figure the mean of the urinary chloride concentrations during the third hour being identical with that obtained after sodium chloride

Twenty normal individuals were subsequently tested with a dose of 4 g of potassium chloride and 200 c cm of water, the urine being collected hourly for three hours No restrictions were placed on the previous intake of food or drink, the test being started two hours after a self-chosen breakfast The initial concentrations of chloride in the urine, before the test was given, varied from 0 1 to 0 89 per cent, and did not appear to exercise any appreciable influence on the final figures obtained The average concentration of chloride contained during the course of test was 0 915 per cent, with an extreme range of 0 72 to 1 07 per cent In only two cases did the maximum concentration, which was usually attained during the third hour, fall below 0 80 per cent (0 72, 0 79) The average plasma chloride content 90 minutes after administering the dose was 0 376 per cent, with a range of 0 369 to 0 384

It would seem, then, that in normal individuals a comparatively small dose of chloride will in the great majority of healthy individuals lead to the excretion of a urine containing more than 0 8 per cent Cl, and that this level is attained with sufficient constancy to serve as a basis for testing the ability of the kidney for concentrating this radicle Such variations as occur are of the order usually met with in functional tests, and may probably be attributed in part to individual peculiarities of the renal tissue, and in part to the impossibility of exactly reproducing the stimulus to which the organ is subjected

Chloride Concentration in Chronic Interstitial Nephritis

Turning now to cases of renal disease, and taking in the first place patients suffering from chronic interstitial nephritis, we should, of course, expect such patients to show a loss of concentrating capacity for chlorides when examined by the method detailed above Actually the capacity of such kidneys for concentrating chlorides is found to be grossly impaired, and in the severer types of the disease a high grade of fixity of concentration is noted Thus in a patient whose maximal concentration, as tested by the urea-concentration test, amounted to 0 75 only, the concentration of chloride in the urine during the three hours after the administration of 4 g KCl were 0 20, 0 22, and 0 19 per cent, the concentration of the urinary chloride before administration of the salt being 0 20 Taken as a whole, the impairment of the capacity of concentrating chloride in these patients runs closely parallel to the loss of the urea-concentrating power It is remarkable that in these cases the plasma chloride may remain at a normal level even though definite nitrogenous retention is present, in a small series the figure during the second hour of the test averaged 0 375, the highest level attained being 0 404 The absence of hyperchloræmia is not apparently accounted for by retention of water in equivalent amounts to the retained salt, since these patients showed no œdema Veil has, indeed, noticed an excess of chloride in the blood of interstitial nephritis after heavy salt ingestion, and Mayrs has observed a definite hyperchloræmia after doses of 8 and 12 g of NaCl The fact, however, remains that with apparently equal impairment of the capacities for concentrating urea and chloride, gross accumulations of the former are found in the blood, while the latter remains at a relatively constant level Mayrs suggests that the normal plasma chloride in nephritis patients under hospital treatment must be largely due to a restricted diet It may be noted, however, that there is some evidence that "dry" retention of chloride may occur, and that depôts for chloride storage exist in the body The plasma chloride may in advanced cases of interstitial nephritis fall to a very low level, but such hypochloræmia has invariably, in my own experience, been the result of uræmic vomiting with consequent chloride loss, and I see no reason to assume with Veil that it is indication of a profound disturbance of chloride interchange between blood and tissue fluids

From the point of view of chloride excretion, patients showing œdema are of greater interest Thirteen cases of this type were available for examination, and may be divided into two well-defined groups

The first group comprises three cases showing all the characteristics of well-developed chronic parenchymatous nephritis—gross œdema, effusion into the serous cavities, and high grade albuminuria and oliguria The maximum concentrations to the urea-concentration test were 4 9 per cent, 2 2 per cent, and 1 2 per cent, the last patient alone showing definite impairment of nitrogenous excretion In startling contrast to these figures are the results of the chloride-concentration test, which was performed in all nine times on these three patients A typical response may be cited

	Cl per cent	Urine passed	Cl grammes
First hour	0 015	10 5 c cm	0 0015
Second hour	0 017	6 5 c cm	0 0016
Third hour	0 005	7 0 c cm	0 0010

As will be seen, the amounts of chloride passed and the concentrations attained are entirely negligible, though on the following day this patient gave a response of 4 95 per cent to the urea-concentration test At first sight, then it would seem that a complete dissociation of the capacities for concentrating urea and chlorides is present An examination of the plasma chloride, however, suggests that another explanation is possible The plasma chloride in this particular patient was at a level of 0 352 per cent during the second hour of the test while the average figure for the series was 0 349 per cent Eight samples of ascitic or œdema fluid were obtained from these patients and showed an average chloride content of 0 405 per cent (range 0 385–0 427) If we admit that a threshold figure of plasma chloride exists below which the kidney practically ceases to excrete the radicle, another interpretation of the seemingly complete inability to excrete chloride suggests itself The level of plasma chloride in these patients, even after a dose of salts, approximates that usually given for the renal chloride threshold, while the œdema fluid shows a much higher chloride content than the blood It would seem that the disappearance of chlorides from the urine of these patients is the result of the impoverishment of the blood in chlorides and their accumulation in the tissue fluids rather than of a gross renal functional defect In the only patient in whom an improvement occurred, it was noted that simultaneously with the disappearance of the œdema the plasma chloride rose to a normal figure (0 378), while at the same time the response to a chloride-concentration test rose from 0 015 to 0 63 per cent In spite of this striking improvement in the urinary chloride concentration, a very high grade of albuminuria persisted and the centrifuged deposit still showed numerous tube casts From this point of view the renal condition showed no such rapid improvement as one frequently sees in an acute glomerulo-nephritis with onset of diuresis and subsidence of the œdema The direct evidence obtainable from urinary examination, therefore, does not suggest that the sudden improvement in chloride concentration is the result of a corresponding improvement of the pathological condition of the kidney It is unfortunate that the cases of typical parenchymatous nephritis which came under examination were so few in number, but the facts observed are suggestive It would seem that elevations of blood-sugar concentration can be controlled by insulin injected at a suitable interval of time—about 30 minutes—before the chief meals of the day.

In conclusion, I wish to express my thanks to those members of the staff of Ruthin Castle who allowed themselves to be the subject of experiment, to my colleagues A. J Leigh, J S Jeffery, and T J Dobie for the numerous blood-sugar estimations, and lastly to Dr Spriggs for his kindly help and advice

References

1 Baudouin, A Thèse de Paris, 1908
2 Frank, E Zeit f Physiol Chem, Strassburg, 1910–11, lxx, 291
3 Reicher, K, and Stein, H Verhandl deutschen Kongress f Inn Med, Wiesbaden, 1910, xxvii, 401
4 Jacobsen, A Th B Biochem Zeit, Berlin, 1913, lvi, 471
5 MacLean, H Modern Methods in the Diagnosis and Treatment of Glycosuria and Diabetes, Constable and Co, 1924, p 16
6 Gephard and Du Bois Archives of Internal Medicine, 1915, xv, 835
7 Johansson, J E Skan Archiv für Physiol, 1908, xxi, 30
8 Joslin, E P Treatment of Diabetes Mellitus, Henry Kimpton, 1924, third edition, p 24
9 Büchner, S, and Grafe E Deutsches Arch f Klin Med, 1924, cxliv, 67–85
10 Brugsch, T, Benatt, A, Horsters, H, and Katz, R Biochem Zeit, 1924, cxlvii, 117–49
11 Benedict, S R, and Osterberg, E Jour Biol Chem, Baltimore, 1918, xxxiv, 195
12 John, H J Lab and Clin Med, St Louis, 1923–24, ix, 625–629
13 Pickering, D V Quar Jour Med, 1920, xiv, 19, also Duff House Papers, Oxf Med Press, London, 1923, i, 268
14 Klemperer, G Verhandl d. Vereins f Inn Med, Berlin, 1896, xvi, 67
15 Spence Quar Jour Med, 1921, xiv, 314

ON THE CAPACITY OF THE KIDNEY FOR CONCENTRATING CHLORIDE.

BY O L V DE WESSELOW, M B OXF,
F R C P LOND,
PHYSICIAN WITH CHARGE OF OUT-PATIENTS, AND CHEMICAL PATHOLOGIST, ST THOMAS'S HOSPITAL, LONDON

IN recent work on the subject of the excretory capacity of the kidneys attention has been focused to a large extent on the excretion of the nitrogenous waste bodies, and the question of chloride excretion has excited but little interest This comparative neglect is probably in part due to the amount of labour involved in prolonged chloride balance experiments, and the difficulty of carrying out such experiments on sick patients, and in part due to the feeling that the whole question has been settled by the classical work of Widal The views of this author as to the part played by defective renal excretion of chlorides and consecutive water retention in the production of renal œdema have, however, been gradually losing favour One may, for instance, cite the findings of Volhard and Fahr, who discovered that during the initial stages of "renal" œdema the blood, far from showing the expected dilution, is actually concentrated, as evidence of the obvious difficulty of accepting a primary renal origin of the dropsical condition The use of a salt-free diet in the treatment of renal œdema has also not fulfilled our original expectations The pendulum has, in fact, swung in the opposite direction, and the rôle played by the chlorides in the production of renal œdema is regarded by many authors as altogether subservient to that of the proteins of the plasma It is widely believed that loss of protein through the damaged renal epithelium leads to such a diminution in the plasma protein content and so alters the osmotic relationships between plasma and tissue fluids that water leaves the blood and enters the tissues On this assumption variations in the concentration and quality of the proteins determine the distribution of water in the organism Loeb, however, in his review of the œdema question, concludes that sodium chloride rather than protein plays the predominant part in controlling water distribution in the body If this is so, the question of the capacity of the kidney for chloride excretion still retains its importance in our investigations of renal dropsy The following experiments were put through with a view to studying this aspect of renal function

Renal Capacity for Chloride Excretion

It is hardly necessary to stress the inconclusive nature, as far as renal function is concerned, of the balance experiments on which the chloride retention theory of œdema rests It is well known that if the blood content in chloride falls below a certain level, excretion of chloride by the kidney ceases Instances of such disappearance of chloride from the urine, not due to any functional defect of the kidney but to impoverishment of the blood in salt are seen in lobar pneumonia and in war gas-poisoning, in both of which conditions exudation of chloride-rich material into the lung leads to pronounced fall in the chloride content of the blood The apparent chloride retention in such cases is in reality proof of an intact regulatory function of the kidney rather than an excretory defect

Relatively few workers have attempted to test the renal capacity for chloride excretion directly Ambard, indeed, has devised a method of estimating the renal threshold for chlorides, based on his ureo-secretory constant, defects in chloride excretion are estimated by the rise in the renal threshold for this salt, the threshold itself being determined indirectly The method is however, somewhat elaborate for routine clinical use, and entails assumptions as to the identity of the secretory constant for various bodies, which may well be called in question Ambard also noted that in man the concentration of Cl in the urine may reach a figure of 1 to 1 3 per cent The question of maximal chloride concentration has also been studied by Volhard, who states that the highest figure that can be attained by the healthy human kidney is 1 per cent Adolph and Haldane, giving large doses of salt, found concentrations of 1 to 1 2 per cent Cl and Addis in morning urines found figures of 0 82 to 1 35 There is thus a general agreement that in health the urinary Cl may reach a figure of approximately 1 per cent, the highest concentration noted being 1 35 In many of these experiments large quantities of chloride were administered and in addition the water-supply was limited

Chloride Concentration in the Healthy

Such conditions cannot, of course be reproduced in the sick patient, but in a series of experiments on a healthy individual I was surprised to find that a urinary chloride concentration not far below the maximum could be elicited by administering comparatively small quantities of salt The highest concentration attained by this kidney was 1 03 per cent, after 17 g NaCl and water deprivation, a nauseating and unpleasant experience On the other hand, in six experiments with doses of 4 g NaCl or KCl, taken in cachets and washed down with 200 c cm of water, an average concentration of 0 905 Cl was reached, the maximum figure being usually attained in the third hour of the test The range of the highest concentrations in these experiments was from 0 84 to 0 94 per cent The plasma chloride was estimated during the second hour of the test with a view to establishing a constant relationship between plasma and urinary chloride The figure obtained varied between 0 369 and 0 380, but no such constraint relationship could be found A larger diuresis followed the potassium salt than the sodium, potassium salts being active diuretics, above the edge of the pubic bone On separating the anterior surface of the organ from the overlying structures pus became apparent On further separation this was found to be coming from a wound in the long axis of the uterus extending from the upper pole into the lower segment The edges of this wound were easily separable, and showed much suppuration, lying in the wound was a long catgut ligature This was removed, placed at once in a sterile test tube, and kept for culture Portions of the suppurating edges of the uterine wound were also taken and kept for culture The interior of the uterus showed no collection of pus The uterine adnexa showed no abnormality Kidneys Very congested but otherwise normal Spleen, soft and friable, but not greatly enlarged Other organs Nothing abnormal

Bacteriological Examinations—Films of the pus from the uterine wound showed Gram-positive cocci and Gram-negative bacilli only Aerobic plate cultures gave a pure growth of *Staphylococcus aureus* Anaerobic cultures in bullock's heart broth were made as follows (*a*) Of the catgut ligature referred to above, (*b*) and (*c*) of portions of suppurating tissue from the edges of the uterine wound All cultures were incubated for 48 hours

On examination by film culture (*a*) showed numerous morphological *B tetani* One of the cultures from the uterine tissue showed the same organism in smaller numbers the third culture showed no tetaniform organisms All three cultures showed various other types of anaerobic organisms, but no other end-sporing types

Animal Experiments—(1) March 12th, 1926 Two guinea-pigs used at 11 30 A M Guinea-pig 1 (control) received intraperitoneally 5 c cm mixed anti-gas gangrene serum and 500 units antitetanic serum Guinea-pig 2 received by same route 5 c cm anti-gas gangrene serum only 5 30 P M. Both guinea-pigs were inoculated in the right thigh with 1 c cm of culture (*a*) This had stood overnight in the ice chest Six hours previous to inoculation 2 c cm of the culture were mixed with 10 c cm of anti-gas gangrene serum Each of the guinea-pigs received 6 c cm of this mixture Both guinea-pigs were kept under observation for two weeks, but neither showed any ill-effects

For various reasons work on the cultures at this stage had to be suspended until the middle of April. As it was thought that the nature of the medium might have had something to do with the failure to produce tetanus in guinea-pigs in the first experiment it was decided to perform a second experiment, using an ascitic broth culture Subcultures were therefore made from the original meat broth culture into ascitic broth and incubated anaerobically. After three days' incubation these cultures showed numerous tetaniform bacilli It was also considered possible that there might be traces of tetanus antitoxin in the anti-gas gangrene serum used to barrage against the gas forming anaerobes, and it was decided to omit the use of this serum

Experiment (2)—A third subculture into ascitic broth incubated for three days was used Guinea-pig 1 (control) received 500 units of antitetanic serum intraperitoneally. It was then inoculated with 1 c cm. of the culture in the right thigh, the injection of the culture being immediately followed by 1000 units of antitetanic serum Guinea-pig 2 received 1 c cm of the culture alone Neither of the guinea-pigs showed any ill-effects

By this time considerable doubt was being entertained as to the nature of the tetaniform organism. It was decided, however, to perform one more experiment, taking advantage of the known catalytic effect of the presence of silica along with the organisms For this purpose a 48 hours subculture into meat broth from the ascitic broth was used

Experiment (3)—April 24th, 1926 A quantity of ordinary sand was heated in a crucible over a bunsen flame for one hour At the conclusion of this heating it was poured into a test tube full of sterile saline, and allowed to stand for a few minutes The coarser particles settled to the bottom, leaving the finer particles in suspension Guinea-pig 1 (control) received 1 c cm of this suspension into the right thigh Guinea-pig 2 received 1 c cm of the sand suspension followed by 1 c cm of the culture

At 11 A.M. on April 25th guinea-pig 2 showed an intense and very characteristic spasm of the injected leg It was not seen again until 5 P M It was then in a condition of intense general spasm. All four legs were in extension and the whole body bent backwards and to the right so that the nose almost touched the thighs So severe was the condition that the animal was at once chloroformed At post mortem the site of inoculation showed œdema, but no pus formation. Films showed no organisms and only a few pus cells Cultures from the œdema fluid incubated anaerobically for three days showed numbers of *B tetani*

Discussion

The point of greatest interest is the extreme difficulty presented by the diagnosis during life Matters were very much complicated by the fact that the patient was a neurotic woman, and that she had before the operation harboured a dread of tetanus When she developed a risus sardonicus after the operation it was inevitable that suspicion of a neurosis should be aroused, and this was strengthened by the absence of other well-marked symptoms of tetanus during the ensuing days up to the time of death The spasmodic attacks appeared to be entirely confined to the muscles of the face and throat, and were quite different from the spasms seen in an ordinary case of wound tetanus In fact, almost the only characteristic sign of tetanus which the patient presented, apart from a risus sardonicus, was cessation of life Why death occurred it is difficult to say The spasms did not last long enough to cause death from asphyxia, and there was no exhaustion such as is seen in a well-developed case of tetanus It would appear that the tetanus toxin has potentialities for damage beyond its mere power of producing spasm, to an extent not usually realised

The fact that on culturing portions of the uterine tissue, and also of the catgut used in suturing that organ, the tetanus bacilli were obtained in by far the greatest numbers from the catgut would appear to implicate the ligature as the source of the infection Two other samples of catgut from the same lot, but not from the same phial, were examined anaerobically, but neither gave any growth

From the bacteriological standpoint it is interesting to note the very powerful effect of the addition of a little sand to the cultures of the tetanus bacillus

Summary.

1 A fatal case of tetanus following upon Cæsarean section is described

2 The catgut used in suturing the uterus is implicated as the source of the infection

3 The diagnosis was rendered difficult by the ill-marked and mild nature of the symptoms and the fact that the patient was known to harbour a fear of tetanus

The sole share of the author in this case was the performance of the post-mortem examination and the bacteriological procedures, and his thanks are due to the surgeon in charge of the case for his kindness in providing full clinical details

Clinical and Laboratory Notes.

FULMINANT CASE OF ACUTE POLIOMYELITIS OF BULBAR TYPE.

BY F C COLLINSON, M R C S ENG, J P,
SENIOR SURGEON TO THE ROTHERHAM HOSPITAL, DEPUTY CORONER FOR ROTHERHAM

THE following case presents sufficient features of interest to make it worth recording

A girl, aged 11½, had been in her usual health until about midnight on June 2nd–3rd, when she called out, "Mother, I'm sick" She vomited once, and for the rest of the night was restless and a little delirious, only sleeping at intervals Next day she got up as usual, but did not go to school Nothing definite was noticed She went to bed in the usual way that night, and next morning, June 5th, she got up about 10 30 o'clock and played about with her brother. About 1 30 P M the child was looking ill, and was sent to lie down. At 6 30 P M (that is about 42 hours after the previous vomiting) she vomited again, bringing up some frothy white material. She now complained for the first time of some difficulty in swallowing but it was not pronounced From this time onwards the difficulty of swallowing increased and by 10 o'clock that night she could not swallow at all Even a little milk put in the mouth was churned about, and eventually put out

Condition on Examination—At 11 30 A M on June 6th, when I was called to see her, the temperature was 103° F, pulse 120, respiration 20 She was frothing at the lips, restless, and in a state of great alarm There was no squint or inequality of the pupils When water was given to her she appeared to roll it round in her mouth, and the froth about her lips increased She kept pushing the head forwards, and the larynx rose up, but no liquid seemed to in these patients the kidney probably lacks opportunity rather than capacity for excreting chlorides that the diversion of chloride and probably water from the blood to the tissue spaces leads to the almost total disappearance of chloride from the urine and to the extreme oliguria, and that, given the opportunity, the kidney still possesses a very fair capacity for chloride concentration The œdema is, in fact, rather of extrarenal than of renal origin and results from a general alteration in the capillary permeability of the body It is probable that the seeming dissociation of the capacities of the kidney for urea and chloride concentration is apparent rather than real, and it is questionable whether these cases form an exception to the general rule that the various concentrating capacities of the kidney are closely interrelated

Chloride Concentration in Cases with other Renal Lesions and Dropsy

The second group of œdematous cases examined, ten in number, present a striking contrast to the first In all a renal lesion was present, as evidenced by albuminuria and casts, and no other cause for the œdema could be found The dropsy was, however, less well developed than in the parenchymatous nephritis, and no appreciable effusion into the serous sacs was detected in any of these patients The group included such conditions as pre-eclampsia and eclampsia, acute glomerulo-nephritis, chronic nephritis, complicated by pregnancy, persistent œdema of the legs with albuminuria after acute nephritis and exacerbations of chronic nephritis The response to the chloride-concentration test in these cases was relatively good and in two cases reached a figure in excess of 0 80 per cent Where impairment of chloride-concentration was present, a correlated and roughly equivalent impairment of the power of concentrating urea was noted No such extreme failure of chloride-concentrating power was noted as appears to be the rule in chronic parenchymatous nephritis, the lower range of chloride concentration obtained was in the neighbourhood of 0 15 to 0 20 per cent —that is, about at the level frequently seen in chronic interstitial nephritis The average content of plasma chloride during the test was 0 386 per cent varying from 0 367 to 0 404; the plasma chloride is thus slightly in excess of the normal figure No samples of the tissue fluids were obtained It does not appear that the œdema present in these cases could be attributed to loss of the capacity of the kidney for chloride concentration, since as low or lower chloride concentrations may occur in interstitial nephritis free from any trace of dropsy The group as a whole showed, however, a somewhat impaired diuretic response to the potassium salt, as compared with the normals and with other nephritics free from dropsy

Conclusions

1. A simple method is suggested for testing the capacity of the kidney for concentrating chlorides 2 The capacity of the kidney for chloride concentration appears to run parallel with its power of concentrating urea, both functions being affected in disease to an approximately similar degree 3 An apparent dissociation of the two functions is seen in cases of parenchymatous nephritis with gross anasarca, but it would seem that this is merely the result of impoverishment of the blood in chloride

References —Volhard and Fahr Die Brightsche Nierenkrankheit Berlin, 1914 Loeb Medicine, 1923, ii, 171 Adolph Amer Jour Physiol 1923, lxv, 420 Haldane, Davis, and Kennaway Jour Physiol, 1922 lvi, 269 Addis and Foster Arch Int Med, 1921, xxviii, 773

WE are asked to state that the British South Africa Company no longer acts as London agents for the Government of Southern Rhodesia The offices of the High Commissioner for Southern Rhodesia are at Crown House, Aldwych

---

A CASE OF
POST-OPERATIVE TETANUS WITH IDENTIFICATION OF THE ORGANISM

BY S C DYKE, D M OXF, M R C P LOND,
CONSULTING PATHOLOGIST, WOLVERHAMPTON AND STAFFORDSHIRE HOSPITAL.

THE rarity of tetanus following operation with present-day aseptic technique and the fact that in this instance the diagnosis, which would have been doubtful on clinical grounds alone, was proved by the identification of the organism form the justification for the publication of the following case

Clinical History

Patient was a married woman, aged 38, of rather neurotic temperament She had had one previous pregnancy which had ended in craniotomy on account of "contracted pelvis" When she became pregnant a second time it was therefore decided that delivery should be by Cæsarean section Labour commenced at 10 P M on Feb 16th, 1926 No examinations were made, labour was allowed to proceed for one and a half hours and the section was then performed, resulting in the delivery of a healthy male child The operation presented no unusual difficulties, the uterine wound was closed with divided catgut sutures and a continuous stitch of the same material, the wound in the abdominal wall was closed in the usual way For two weeks after the operation all went well The lochia were entirely normal, and the wound in the abdominal wall healed cleanly Involution of the uterus took place at a normal rate Preparations were in train for the removal of the patient and her baby to her own home, when on March 4th she complained that her tongue felt swollen and her jaws stiff On the morning of the following day the patient presented a risus sardonicus, and there was some trismus and retraction of the neck There was no stiffness of the muscles of the trunk or limbs, the reflexes were not increased, and there was no indication of spasm other than that of the muscles of the face and neck On the strength of such symptoms as existed the patient was given 100,000 units of antitetanic serum, 20,000 units into the spinal theca, and the remainder intramuscularly The temperature in the evening rose to 101° F

On March 5th the patient appeared to be better The retraction of the neck had disappeared, the trunk and limb muscles remained unaffected, and the nurse stated that during sleep the patient's mouth fell open In the absence of any very definite symptoms of tetanus, and in view of the patient's neurotic temperament, very considerable doubt began to be felt as to whether there was any tetanic infection at all This doubt was much strengthened when interrogation of the patient's husband elicited the extraordinary fact that the patient had dreaded getting tetanus after the operation, and had even approached her own medical practitioner with a view to getting him to give her a prophylactic dose of antitetanic serum It appeared that this dread on the part of the patient arose from the fact that in her youth she had seen a case of tetanus in a farm hand and was therefore more or less familiar with the symptoms During the afternoon of this day the patient developed a series of spasmodic attacks in the course of which she clenched her teeth, held her breath, and became cyanosed The trunk and limb muscles remained unaffected, during some of the attacks there was incontinence of urine and fæces The temperature varied between 100° and 101°.

On March 7th the patient was quiet and fairly free from the spasmodic attacks until the middle of the afternoon By this time a definite decision had been reached that the symptoms were neurotic in nature, and arrangements were being made for the transfer of the patient from the surgical ward in which she had been treated, when she suddenly had another spasmodic attack, and conclusively confuted the diagnosis of a neurosis by dying a few minutes after its apparent subsidence

Autopsy

Post-mortem Examination —March 9th 1926 The body was that of a somewhat emaciated female, breasts full, on the abdomen in the mid-line was a completely healed surgical wound Brain Vessels very congested, no other signs of abnormality Thorax Lungs normal, some froth in the trachea, early atheroma of the aorta, in particular about the mouths of the vessels Heart Nothing abnormal Abdomen The wound in the abdomen showed no collections of pus, healing of all layers of the wall had occurred, and there were no adhesions between the deep aspect of the scar and the underlying viscera The uterus was contracted down so that its upper pole just reached

At 5 A.M. the plugging was removed from the vagina and a quarter of an hour later she delivered herself of a still-born fœtus The placenta and membranes rapidly followed, together with some retroplacental blood-clot At one edge of the placenta the area over the os could be easily determined, and at the opposite side there was retroplacental blood-clot At 6 A.M she was sweating profusely and the blood pressure had dropped to 116 mm Hg Consciousness was returning No urine had been passed During the day. however she gradually improved, though she was drowsy to a degree approaching coma Her face became more puffy and the œdema of the legs was more marked Sweating was maintained by a further injection of pilocarpine gr ⅙

On Nov 1st she was still improving but no urine was passed In the evening, at 7 o'clock, a catheter was passed and 7 oz. of urine drawn off This contained a large amount of albumin and many casts, blood cells, and pus The urea was 0 7 and the chlorides 0 27 per cent As by the history she had not passed urine since the evening before admission she had had complete suppression for 72 hours

On Nov 2nd 13 oz. were passed naturally and on the 3rd 65 oz. She was now taking a large amount of fluids by the mouth, and on Nov 4th she passed 140 oz.

She made an uninterrupted recovery and was discharged on Nov 26th feeling quite well, with the urine free from albumin.

The administration of ergot intramuscularly at three-hourly intervals undoubtedly stimulated the uterus to expel its contents and so made recovery possible

I am indebted to Mr L C Rivett for permission to publish this case.

A CASE OF ADENOMA OF THE JEJUNUM CAUSING INTUSSUSCEPTION

BY R CHARLES B MAUNSELL, F R.C S IREL ,
PAST PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS IN IRELAND , SURGEON TO MERCER S HOSPITAL, DUBLIN ,
PRESIDENT OF THE SURGICAL SECTION, ROYAL ACADEMY OF MEDICINE IN IRELAND

THE following case is of interest on account of its rarity and also as an example of the impossibility of making a diagnosis in some abdominal conditions without the aid of an exploratory operation

E. M., female aged 26, was sent to me on March 31st, 1926 She had been complaining of abdominal pain and vomiting for two years and, in spite of prolonged hospital treatment, the symptoms had become worse. The pain was situated in the upper abdomen and also in the back at the same level, and sometimes if she turned on her right side, she felt a " gushing " starting from her back and travelling around the left side The ingestion of solids or fluids increased her pain, and fluids gave her a feeling of great distension. When she vomited the pain became very intense for some minutes but then died away, except from her back where it was almost continuous She often put her fingers down her throat in order to hasten the emptying of her stomach. The vomited material always contained bile, but she never noticed any blood. She stated that on many occasions her motions were black in colour and sometimes she passed red blood For the past few months she had lost flesh and had become weak and suffered from lightness in the head." Her bowels have been constipated and she frequently took aperients

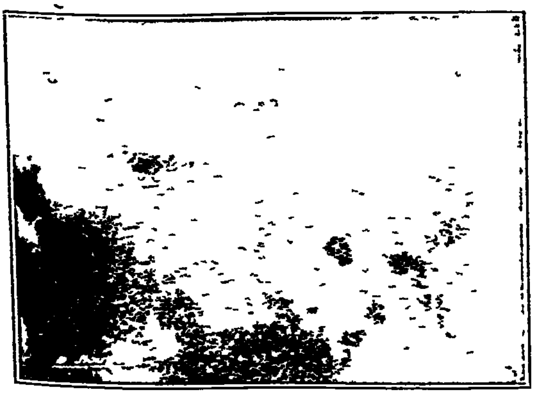


FIG 1 —Six-hour retention of barium meal in third stage of duodenum

Upon examination she was fairly nourished, but was extremely anæmic Hb 30 per cent W.B C. 5466 per c mm. R B C 4,820 000 She remained in hospital for five weeks before operation, and during that time her pulse temperature and urine remained normal. There was at no time blackness of the motions nor was any red blood passed, but " occult blood " was demonstrated in the fæces Palpation and percussion revealed nothing except slight tenderness in the upper abdomen.

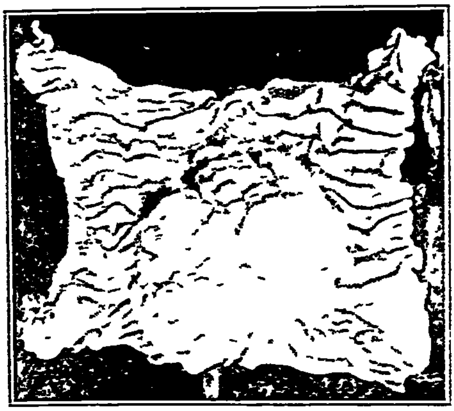


FIG 2 —Sessile adenoma of the jejunum

A provisional diagnosis was made of gastric ulcer or duodenal ileus, or a combination of both. and she was referred to the X ray department The following extracts from the radiologist's report are of interest . " Stomach—normal in position, size, shape, and tone, and the evacuation of its contents was fairly free There was some tenderness over the pylorus and duodenum. There was marked delay in the third part of the duodenum, and in six hours when the stomach had emptied completely there was a residue still present in the duodenum (Fig 1) The diagnosis is uncertain. but some mechanical obstruction involving the third part of the duodenum is suggested. It is probable that the second and third parts are considerably dilated The obstruction may be due to pressure of the mesenteric artery, but there is no pronounced visceroptosis " Upon reading this report we felt quite confident that the provisional diagnosis was correct and on May 7th I opened the abdomen.

Operation —The stomach and upper portions of the duodenum were normal. When the transverse colon and mesocolon were turned up a very curious condition was seen. Intestine several inches in circumference appeared to emerge from a depression in the transverse mesocolon at the point which should have been the site of the duodenal jejunal flexure This enlarged intestine could be traced down for 9 or 10 inches before it tapered into normal jejunum. Examination showed that it was an intussusception. the neck of which in its efforts to swallow the duodenum. had formed a depression in the transverse mesocolon. The distal portion of the intussusception was withdrawn from the abdomen and by careful manipulation the intussusception was squeezed back. A soft mass could then be felt in the lumen of the intestine it appeared to be about the size of a golf ball, to be sessile, and situated about 8 inches from the duodeno-jejunal flexure About 3 inches of the intestine was resected and continuity re-established by end-to-end anastomosis No other tumour was felt in the abdomen. The pathologist reports that the tumour is an adenoma (Fig 2) The patient has had no symptoms since the operation and is rapidly regaining her normal strength and complexion.

I had only once previously met with an adenoma of the jejunum, and it also caused an intussusception. I operated upon the patient some 20 years ago and. although the notes and specimen have been mislaid. I have a very distinct recollection of the case

The patient was a young man aged 25 years who suffered periodically from intense abdominal pain sometimes accompanied by vomiting Many diagnoses had been made including hysteria and malingering but luckily the house surgeon was present during one of the attacks and he thought that he could feel a tumour in the upper abdomen. When I examined the patient next morning this tumour could not be felt I opened the abdomen and found evidence of a recently reduced intussusception 2 feet below the duodeno-jejunal flexure and I removed a pedunculated adenoma from the lumen of the intestine

In conclusion I wish to thank my colleagues Dr. Leonard Abrahamson for medical consultations Dr T G Hardman for X rays and Dr J. Lar for pathological reports go down the œsophagus It was not possible to make a complete examination at the moment, but there was nothing abnormal to be seen in the pharynx Before I could make a second visit death had occurred The parents say that about 1 30 P M —that is, two hours after I saw her—she became very excited, went stiff, and clutched at the bed-rail, struggling up to the time of her death She did not go blue Death occurred at 2 P M on June 6th Permission for autopsy was not obtained, but the throat was carefully examined and nothing abnormal found

Commentary

Here we have an acute illness fatal in 62 hours There is an onset with vomiting, and general toxic symptoms, restlessness, malaise, delirium, and after an interval of about 40 hours the localising symptoms show themselves, in this case limited to dysphagia, suggesting serious damage to some part of the lower medullary region At the same time there was evidence of general infection from the temperature and pulse There was no history of any injury, no drugs of any kind had been taken, and the differential diagnosis seems to lie between two infections, each of neurotropic type, acute poliomyelitis and epidemic encephalitis In favour of acute poliomyelitis is the age of the patient, the onset with vague febrile symptoms a few hours before the appearance of local paralysis, the extreme severity of this latter, and its limited extent It is impossible on the data to exclude epidemic encephalitis, indeed, cases of a somewhat similar type have been recorded from time to time, and referred to as "hydrophobia-without-the-dog" Arthur Hall records a case of this kind in a woman in whom hydrophobia was suspected and tracheotomy had to be performed[1] Cases have also been described by Denyer and Morley in a young man,[2] Kahn, Barbier and Bertrand[3] in a woman of 52, and Sarkies[4] in a medical man These cases, however, differed in certain respects from my case In all of them there were violent spasms of the larynx, which were increased by attempts to swallow, whilst in my case the trouble appeared to be limited to the loss of swallowing It is possible, however, that after I saw her such spasm of the larynx may have occurred, and indeed some further extension of the trouble must have taken place to cause her sudden death

Apart from these rarer bulbar cases seen in epidemic encephalitis, dysphagia of a temporary kind is by no means uncommon as an early symptom in this disease It is, however, usually accompanied by other evidences of cranial nerve involvement, ocular, facial or tongue palsies Moreover, it is unusual for these early cranial nerve palsies of epidemic encephalitis to be the cause of death, or for death to occur during their existence. It is a somewhat surprising fact that the toxin of epidemic encephalitis seems to flit about the bulb causing a palsy on this side one day, a palsy on the other side the next, and yet seems to avoid the vital centres It is rare for death to occur at this period, when bulbar-pontine palsies are occurring Further, as is well known, these early cranial nerve palsies are rarely permanent the damage seems to be less than destructive That acute poliomyelitis may involve the brain stem is well known, and such cases may be rapidly fatal Feiling[5] records a case in a youth of 19 who began to feel ill on Nov 19th 1913, with a peculiar feeling in the throat Two days later he had difficulty in swallowing, and weakness in the left leg The dysphagia became complete, there was pyrexia, and a year later he had an attack of severe dyspnœa and a convulsion, and died a few hours later Definite signs of acute poliomyelitis were found in the central nervous system Feiling's case was published before the question of epidemic encephalitis as a separate entity had arisen, but the clinical account of it does not suggest the latter disease Poole[6] in 1925 recorded two cases of what he termed acute polio-encephalitis Both had dysphagia amongst other bulbar symptoms, and died within a few hours of admission He discusses the diagnosis between Heine-Medin's disease and epidemic encephalitis, without making it very clear as to which way his own opinion leaned Apparently there was no autopsy in either of his cases

It seems on the whole probable that the case which I have recorded was one of acute poliomyelitis (polio-encephalo-myelitis) limited to the bulbar region

Bibliography —1 Hall, Arthur J Epidemic Encephalitis, Bristol, Wright and Son, 1924 2 Denyer, S E, and Morley, D F Brit Med Jour, 1921, i, 191 3 Kahn, Barbier and Bertrand Bull et Mém Soc Méd des Hôp Paris, 1921, xlv, 787 4 Sarkies, M The Lancet, 1921, i, 171 5 Feiling, A St Bart's Hosp Rep, 1914, li, 87 6 Poole, E A B The Lancet, 1925, i, 175

A CASE OF COMPLETE SUPPRESSION OF URINE FOR THREE DAYS

By A Leslie Lankester, B A Camb, M R C S Eng,

LATE SENIOR RESIDENT MEDICAL OFFICER, QUEEN CHARLOTTE'S HOSPITAL

The case here related is of interest not only on account of the long period of anuria, but also because of the large amount of pilocarpine which was given before the skin reacted

E S, a primigravida of 41, was attending the antenatal department of Queen Charlotte's Hospital and was under treatment for albuminuria The treatment had been dieting, by the restriction of proteins, and the administration of alkalies and saline purges During the night Oct 29th–30th, she slept badly, and in the early morning there was a small loss of blood from the vagina The patient also had some "giddiness" and some "biliousness" A further loss caused her to come up to the hospital, and she was admitted at 11 A M.

Condition on Admission —The patient was very pale, pulse 64, temperature 95 6° F , ankles slightly œdematous , systolic blood pressure 160 mm Hg She complained of slight epigastric pain and a few specks before the eyes Mentality was perfectly normal and the patient was only worried about herself because of the bleeding The uterus was fairly hard but not specially tender, and normal elasticity was not present Maturity was about 34 weeks There was a steady trickle of blood from the vagina and the edge of the placenta was felt through the cervix A diagnosis of placenta prævia was made and the pallor was thought to be due to loss of blood

She was put to bed, kept warm, and watched The bleeding continued and at 4 P M. it was decided to plug the vagina She was given an anæsthetic, the membranes were ruptured, and the vagina firmly packed with three 6-yard rolls of 6-inch gauze

The patient took the anæsthetic badly the pulse being barely perceptible most of the time, but there was no further loss An injection of 1 c cm of pituitrin was administered and rectal salines were given At 7 P M she was very restless and delirious At 9 P M she was intensely anæmic, the mucous membranes being almost lemon coloured, and the respirations were becoming stertorous She had a curious "barking" cough and frequently vomited a dark-brown fluid

No urine had been voided since admission to the hospital A catheter was passed and the bladder was found to be empty Her condition was so bad that any radical treatment was contraindicated A diagnosis of combined toxæmic accidental hæmorrhage and placenta prævia was made and restorative treatment adopted, the prognosis being regarded as hopeless

The colon was washed out with saline, and an intravenous saline containing sod bicarb gr x ad 1 pint given Hot packs were applied in an effort to get the skin to act, pilocarpine gr ⅙, subcutaneously, and ergotin, 1 c cm, intramuscularly, being injected By 11 P M she was in deep coma, respirations hardly perceptible, the pulse impalpable, and the heart sounds only faintly heard with a stethoscope Oxygen and camphor, gr iii, in oil with strychnine and digitalin hypodermically were given as cardiac stimulants At midnight the pilocarpine, gr ¼, and ergotin, 1 c cm, were repeated There was no change in the condition

Rectal salines were still being administered every hour and were retained, and at 2 A M on Oct 31st she was given a steam vapour bath and the pilocarpine gr ¼, repeated The blood pressure was now 136 mm No moist sounds were heard at the bases of the lungs An hour later, 3 A M, there was some vasodilatation, and a few moist râles in the lungs, indicating that the pilocarpine was acting The vomiting recurred on one occasion, otherwise the patient was in deep coma, but the respirations improved slightly as the skin began to act

By 4 A M the skin was definitely acting and perspiration became visible Her general condition was slightly improved and she appeared to be having definite uterine contractions yet so many cases which started as a hæmorrhagic went on into a chronic nephritis that he thought a classification of acute nephritis was not practicable There were two forms of nephritis in infants under 12 months which Dr. Parsons had not mentioned but which were of great importance In the one there was a febrile illness occurring in a child say 6 months old, this illness simulated a respiratory disorder, and the diagnosis was often bronchopneumonia but there were no chest signs, and the examination of the urine showed a considerable degree of albuminuria and casts. The other form was a syphilitic nephritis, which was characterised by marked œdema. The diagnosis of the latter form was of great importance, because these cases were in his experience universally fatal. With regard to chemical tests he agreed with many of the remarks made but he considered that continued blood-urea observations were of the greatest importance in the prognosis of nephritis As to the remarks made about a protein dietary, he would point out that a milk diet contained a considerable amount of protein; indeed the protein in three pints of milk was equivalent to that contained in half a pound of beef-steak, but possibly there were other constituents of meat associated with the protein which were really more important than protein itself

Dr **Hugh Barber** (Derby) said that 20 years ago cases of acute nephritis which were not due to scarlet fever were regarded as idiopathic, but more recent investigations had demonstrated the importance of focal sepsis in the throat, nose ears, and teeth The cases put down as idiopathic in origin became fewer although with our present want of knowledge such a group was still necessary. There was not any evidence of epidemic nephritis in childhood. He would stress the importance of early diagnosis since some cases of acute nephritis were somewhat insidious in onset and it was possible for a child to be ill several days outside hospital before attention was called to the urine. Of the numerous complications there were two points which appeared to him to be worthy of emphasis First, that pericarditis was fairly common and was insidious in onset, giving rise to little, if any pain Secondly that persistent vomiting might be the only sign of uræmia. Renal efficiency tests were more interesting in prognosis during convalescence but were not sufficiently delicate to help very much although the estimation of the blood-urea was a useful guide to diet in these cases which had progressed to an extreme degree of œdema with much albumin in the urine since in such cases a diet rich in protein gave the best results Judged clinically, the prognosis was severe in proportion to the length of time the acute symptoms were present and a diuresis was the first sign of improvement The chief essential in treatment was absolute rest in bed and keeping the child warm between blankets Mild diuretics might not do any harm, but neither excess of fluid to drink nor drugs of any sort were of much use. Convalescence should proceed very gradually. Children after an attack of acute nephritis should not be allowed to go about with thighs and legs uncovered for there was no doubt that cold disposed towards a relapse when a lesion was or had been present.

Dr **H T. Ashby** (Manchester) wished to draw attention to a line of treatment for chronic nephritis but seldom used at present—namely, decapsulation of the kidney. It was possible that a further trial of this procedure might prove of value, particularly in turning the scale in a case which was doing badly because subsequent to decapsulation a marked diuresis occurred It was doubtful how the results of decapsulation were brought about but three theories had been advanced First that the depriving the kidney of its capsule and then bringing the cortex into contact with perinephritic tissue led to the promotion of new vessels which anastomosed with those of the kidney, and thus provided for the removal of inflammatory exudate and assisted in re-establishing the renal function. Secondly that the effects were due to the relief of tension but as a matter of fact tension was not always present. Thirdly, it had been suggested, and he thought it the correct view, that the mechanism of the production of the diuresis and the disappearance of the œdema was the same as in the process of wet cupping and that direct cupping was done to the kidney itself by decapsulating it If this were true he wondered if simple incision of the kidney would not prove as effective as decapsulation.

The **President** remarked that he had been quite as much interested during the discussion in what had been omitted as in what had been included. Venesection for some centuries had been an almost universal mode of treatment of acute disease, but had gone out during the last generation, yet there could be no doubt that a timely venesection in acute oliguria of adults was of the greatest service and well worth considering in children. Decapsulation of the kidney in acute cases owed possibly its somewhat rare successes to that principle. Renal efficiency tests that morning appeared out of favour, either as a means of diagnosing types or as affording grounds for prognosis: he thought that the standard of such tests had been insufficiently established in children, either in normal health or in those suffering from diseases other than those of the kidney.

Dr **Wilkie Scott** (Nottingham) thought that decapsulation of the kidneys should be done in very acute cases with suppression of urine, and particularly if the case appeared to be an acute attack engrafted upon a chronic nephritis He also stressed the importance of slight, often overlooked, attacks of acute nephritis in infants.

Dr. **N C Capon** (Liverpool) did not like the use of the word "nephrosis,' because if this label were correctly employed it meant that the changes in the kidney were due to degeneration, and not to inflammation; such a condition must be an extremely rare one because in all the hydræmic cases which he had examined there was always evidence of inflammatory changes He thought that it was a mistake to limit the protein in the diet in hydræmic cases, because in them the protein content of the blood was much diminished With regard to Dr Parsons's suggestion that the tonsils should not be removed until the third month, he thought that if these were infected they should be removed at the earliest possible *moment*

Dr **C. W. Vining** (Leeds) emphasised the importance of rest in the treatment and thought that it was most important that hospital accommodation should be available to give these patients prolonged rest.

Dr. **H. Chodak Gregory** (London) commented on the severe constipation occurring in some of these children and had also noticed the association in early infancy of acute nephritis with septic rashes

Dr. **Parsons** in reply, said that he agreed with Dr. Smellie in disliking the application of the term parenchymatous to the exudative group of acute nephritis, but that he had made use of the term because such cases had been labelled parenchymatous for many years and had received the sanction of antiquity As to the term nephrosis, different authorities gave different definitions but he agreed with Dr Capon that there was rarely evidence of degeneration and usually evidence of inflammation. He (the speaker) also agreed that if there was evidence of infection of the tonsils they should be as a rule removed at the earliest possible moment, but he had on rare occasions seen an exacerbation of the kidney condition follow the operation and therefore in his opening remarks he had ' played for safety."

GOITRE IN CHILDHOOD.

A paper on this subject read by Dr C H. **Milligan** (Glossop) gave the point of view of a whole time public health officer. The definition of goitre adopted in his inquiry was a visible enlargement of the thyroid. The incidence varied with age, sex, and locality In a total of 1870 children examined, goitre occurred in 0 9 per cent. of those under 7 years of age, 8 4 per cent. in boys of 13, and 25 9 per cent. in girls of 13

BRITISH MEDICAL ASSOCIATION.

ANNUAL MEETING AT NOTTINGHAM

(Continued from p 551)

SECTION OF DISEASES OF CHILDREN.

Wednesday, July 21st.

Dr **Hugh Thursfield**, the President, in opening the business of this Section, referred to the great loss sustained by pædiatricians in the death of Dr John Thomson, who had probably contributed more than any other to the advancement of the study of disease in childhood during the last 25 years.

Acute Nephritis in Childhood

Dr **L G Parsons** (Birmingham), in opening this discussion, said that an analysis of a series of cases of acute nephritis showed that advice was usually sought because the child was passing bloody urine or because he was puffy or swollen These two types of onset were associated with a series of symptoms and a clinical course which served to differentiate the cases into two groups The cases in the hæmorrhagic group tended to recovery, whereas in the œdematous group the tendency to pass on to a chronic nephritis was more marked Mixed cases showing a combination of symptoms of the two types also occurred, and, finally, there were cases which in the course of an illness, such as diphtheria, scarlet fever, pneumonia, showed symptoms which placed them in one of the foregoing groups or an examination of the urine revealed albuminuria with or without casts The occurrence of defective excretion of threshold bodies in the œdematous or hydræmic group suggested that in these cases the tubular defect was the important one, and that in the absence of œdema any damage to the tubule was only slight The pathological classification and description of acute nephritis given by Shaw Dunn was a good one, and could be used as a basis for a clinical classification Febrile albuminuria constituted the mildest form of acute nephritis, and might represent either a transient glomerular nephritis or transient tubular nephritis

The explanation of cases of chronic nephritis which arise insidiously, and of the failure to clear up what was apparently the first attack of a frank acute tubular nephritis was, said Dr Parsons, not improbably to be found in the occurrence of a febrile albuminuria in a previous acute pyrexial illness Nitrogen retention raised blood pressure, and uræmic fits were stated by some writers to be characteristic of the hæmorrhagic, by others of the tubular variety of acute nephritis Both observations were correct, and their occurrence depended on the severity of the case, although the explanation was not the same in each group In the hæmorrhagic cases the symptoms only occurred if there were oliguria The oliguria was probably due to a mechanical retention of water from swelling of the glomerular tuft, and as a result of this urea was also retained When the swelling became slightly less the "head" of urea in the blood produced a diuresis This "critical diuresis" was of most favourable prognostic importance Shaw Dunn and Jones had shown that in experimental tubular nephritis urea retention and oliguria occurred This was due to the fact that tubular necrosis was produced, and the dead cells allowed the fluid in the tubules to diffuse back into the more dilute and changing tissue fluids in the supporting structures Blackfan and Hamilton found that a steady rise in blood pressure was the most reliable sign of approaching uræmia; in their opinion raised intracranial tension resulting from œdema of the brain was the causative factor in producing uræmic symptoms, and the raised intracranial pressure was the cause of the raised blood pressure Marriott maintained that nephritis was only part of a general disease, and due in the glomerular form to streptococcal, in the parenchymatous form to staphylococcal infections The streptococcal infection was usually of the tonsils, the staphylococcal of the nasal sinus It was quite clear that the exudative type of acute nephritis frequently appeared to arise without any obvious cause, whereas the hæmorrhagic was particularly associated with acute infections, especially tonsillitis, otitis media, &c , and an important group with septic rashes

In the treatment of acute nephritis Dr Parsons laid down three essentials (1) rest, (2) a suitable dietary, and (3) the removal of any focus of sepsis The patient should be confined to bed for at least three months, for rest of the body was as important in acute nephritis as in rheumatic heart disease Although excretion of protein end-products entailed little effort on the part of the kidney, and "renal rest" could not be produced by starvation, yet he (the speaker) could not accept the view that limitation of protein in the diet was unnecessary The diet should consist of milk or junket, with sugar and fruit juice as flavouring agents, for six to eight weeks Attempts to relieve the kidney by increasing the elimination of fluids by the skin and by the bowel were of little value, diuretics were probably harmful and should not be used, and in the treatment of acute nephritis drugs generally had no place

Dr **J M. Smellie** (Birmingham) thought that until a much closer correlation between the clinical picture and the true histology of the morbid process was possible, such a classification as that suggested by the opener should not be considered final Clinically, there was *no doubt that* a large number of cases could be divided into two groups (*a*) the hydræmic, œdematous, or exudative , and (*b*) the hæmorrhagic, but many mixed forms were encountered He did not like the term "parenchymatous," since it suggested that parenchymatous changes in the hæmorrhagic form were either of negligible extent or not present The cases investigated fell into three groups (*a*) early, (*b*) intermediate (*c*) late The early prognosis was judged on six cases examined 18 months to four years after an acute attack of nephritis Only one of these revealed clinical and biological changes indicative of renal damage The intermediate prognosis was based on a case observed over a period of six and a half years , when first seen he suffered from uræmic fits, five years later he had acute pyrexial illness (chorea) without any recurrence of kidney mischief, and is now apparently healthy, although the biological findings are abnormal The remote prognosis was based on a review of 39 cases at an average period of 16 years after an attack of acute nephritis, and without exception all these to-day were symptomatically well Four had passed through pregnancy, and only one of the four suffered from convulsions at the time of labour Sixteen had been examined clinically and renal efficiency tests carried out None of these had any of the urinary changes associated with a chronic nephritis Six revealed evidence of disturbance of the cardiovascular system, but he asked if he were correct in assuming that this disturbance was consequent upon previous renal inflammation He had not found the renal efficiency tests to be of the assistance anticipated In the absence of symptoms or physical signs, positive biochemical results could not be taken as conclusive evidence of renal damage, but they called for a further scrutiny of the patient and a certain guard in the prognosis until the case had been observed for a longer period The absence of chronic and subacute cases in his survey was striking This could not mean that they had all died, but was due in his opinion to the fact that the cases reviewed were severe in type, and that chronic nephritis was much more likely to develop from a succession of mild attacks, often overlooked, than from a severe attack which had received adequate treatment His investigations had led him to the opinion that the ultimate *prognosis* of acute nephritis entirely hinged on the treatment given If the original disease received efficient treatment complete recovery would occur in a very high proportion of cases

Dr **J C Spence** (Newcastle) said that although he agreed that the hæmorrhagic form carried a good prognosis and the exudative form a bad prognosis, and the postural fibres by the sympathetic Spastic paralysis was a state of exaggerated postural activity, and it was thought that destruction of the grey rami of the sympathetic would cure or greatly diminish, the spasticity of the corresponding muscles but the claims put forward for this operation had not been substantiated As to the view that the sympathetic was specially concerned with the postural activity of skeletal muscle the histological evidence was negative and disputed; the conclusions drawn by Hunter and Royle from experiments on animals, had been severely criticised by neurologists but what perhaps was of the greatest importance was the fact that in the hands of others the operation of sympathetic ramisectomy had not given results at all approaching those claimed by Royle For many years orthopædic surgeons had treated spastic contractures locally by operation upon the contracted muscles or their nerves, and he emphasised the point that whether one attacked the muscles or the nerves, the principle of the operation was the same—namely, to diminish the effective action of a muscle either by lengthening it, so that its effective range of action was less, or by destroying part of it so that its strength of contraction was less Good results had been obtained by both methods He thought that operations on the peripheral nerves, known as Stoffel s operations, had some advantages over those on muscles and tendons The correction of typical deformities of spastic paralysis by muscle and tendon operations entailed a long course of treatment the details of which were, of course well known It was necessary to keep the limbs for some time in some form of apparatus and to prevent relapse many surgeons had found it necessary to put these cases into walking instruments for a long time after the correction of their deformities Now the principle of Stoffel s operation on the peripheral nerves was this In spastic contracture there was a powerful group of muscles in a state of tonic contracture, so intense that it held the part in a position of deformity, and prevented movements in any direction Destruction of a sufficient part of this muscle group abolished the excessive contracture and got rid of the contracture deformity, whilst leaving sufficient muscular power for all practical purposes The simplest way of destroying muscle-fibres was to cut out their nerve-supply, and Stoffel's operation consisted in finding the nerve tracts. usually before they left the main nerve and excising a sufficient portion of them In each case the relief of the contracture was immediate and permanent This statement had been criticised and he would therefore like to add that he had seen recurrence of deformity after Stöffel s operation on the internal popliteal nerve but he did not blame the operation for this but rather himself, for the recurrence was due either to faulty judgment or to faulty technique In conclusion he would submit that Stöffel s operation was the best method of treatment which had yet been devised for the relief of spastic contracture The actual operation in each region was quite a minor operation and easy of performance. and it admitted of a degree of precision and adjustment to the needs of individual cases, such as could not be obtained in any other way The very nature of the resulting intentional paralysis made recurrence of the contractures impossible and therefore prolonged after-treatment, and the use of splints or other apparatus was unnecessary

Dr John Beattie (London) said that those who engaged in carrying out animal experimental work on the sympathetic agreed that Royle's operation as described by Hunter was a complete failure in man Dr Adie's statements that the evidence available at present does not support the notion that sympathetic plays any part in the regulation of muscle tone and that sympathetic impulses to the muscles if these exist, are cut off by the very section that produces decerebral rigidity. were incorrect In attempting to apply to man the results obtained from experiments on animals care was necessary because the problem of muscle tone was a different one in man and in animals Moll, however. in trying the effect of nicotine on the constitution of post-encephalitic Parkinsonism, had recorded a series of facts which showed that the sympathetic in man had some effect in increasing muscle tone Dr Beattie then showed a series of most interesting cinematograph films illustrating the effects of sympathectomy on seagulls, fowls, non-decerebrate and decerebrate goats

Mr S W Daw (Leeds) said that he rarely saw progressive cases He had employed Stoffel s operation in a large number of cases, and the results on the whole were very satisfactory This operation was very much superior to operations on tendons because of the tedious and often painful after-treatment necessary in the latter operations Fourteen days after Stöffel's operation the child could begin to walk and start re-education exercises If contraction were present a combination of the two methods. Stoffel's operation and tendon lengthening was useful. In the lower limbs lengthening of the muscle was. however, preferable to lengthening the tendon A mild degree of athetosis was not a contra-indication to operation

Mr Naughton Dunn (Birmingham) said that there were three difficulties in the treatment of spastic diplegia (1) the mental condition of the child, (2) the increased tone, and (3) the weakness and diminished voluntary control of the muscles He made it a rule that no operation should be done unless the child had shown either naturally or after training some attempt to use the limbs Re-education after operation was of the greatest importance With regard to the question of muscle or tendon lengthening, his practice was to do a muscle lengthening operation where the muscle was a fleshy one. but where the muscle had a direct tendinous insertion tendon lengthening was preferable

In the opinion of Mr H A T. Fairbank (London) the deformities largely depended on the action of gravity and the advantage that certain groups of muscles have over their antagonistic muscles He would ask Dr Adie if he knew of any drugs which had any effect on the involuntary movements, particularly on the "jumpiness" seen in some cases. Gross involuntary movements were certainly a contra-indication to operation. but in certain cases operation seemed to improve involuntary movements The right age for operation was about three years, because when the child had reached that age the surgeon had a better idea of what it was necessary to do He asked why it was that some children developed anatomical shortening of the affected muscles early. and others much later on in life, and he would also like to know how much nerve-fibre must be exsected to prevent regeneration in Stöffel s operation, because in three instances he had known regeneration occur after exsection of one inch of nerve

Dr Neill Hobhouse (London) admitted that Dr. Adie had made out a good case for birth injury being the causal factor in infantile hemiplegia and spastic diplegia If these cases were seen in infancy and early childhood a great deal of spasticity could be prevented, and there was a wide field for non-operative treatment in hemiplegia and in a considerable number of cases of diplegia In any child where new reflexes could be conditioned new voluntary movements could be developed, and why, therefore could not inhibition of these movements also be developed Faradisation of spastic muscles was irrational and was the cause of a great many of the severe contractures seen A severe degree of spasticity rarely occurred in any case which he had had under observation from infancy. In hemiplegia the very best treatment was to tie up the sound arm and so make the child use the hemiplegic one

Dr W F. Menzies (Leek) said that as one of these children the subject of spastic diplegia grew up. first there was no spasticity and it was able to perform movements but later the limbs became rigid and later still there were contractures The faster the child went down hill the earlier rigidity and spasticity developed and the more could it be inferred that years of age In Essex goitre, both in boys and girls, was almost unknown, whereas in one school at Wirksworth 57 per cent of the girls and 50 per cent of the boys were goitrous He also found that the incidence of certain diseases varied in goitrous and non-goitrous children—thus 25 per cent of goitrous children suffered from rheumatism, compared with 5 5 per cent of the non-goitrous children The types of goitre found were either the simple parenchymatous variety or the hyperplasia of puberty, but the types ran one into the other Some of the cases showed hypo- and some hyper-thyroidism There were no cases suffering from toxic adenoma or exophthalmic goitre A scheme for the prevention of goitre had been started at Glossop, the children were given iodised sweets containing 5 to 10 mg of iodine Goitre in Derbyshire was a dying disease and was disappearing in every district where a cleaner and better water-supply than formerly was obtained.

In discussing this paper Dr L A PARRY (Brighton) thought that there must be some other explanation than locality for such a wide variation in incidence He thought the personal factor of the examiner must account for much of the difference

Dr M EDELSTEN POPE (New South Wales) said that a goitre survey of 75,000 country and 10,000 city children of 5 to 15 years of age had been conducted in New South Wales, and it was found that goitre was endemic in certain areas Goitre was found in the hilly districts just off and on the edge of the tableland, whereas on the hot, dry plains and seaboards the children were free from goitre

THURSDAY, JULY 22ND

At a joint meeting with the Section of Orthopædics, when Mr E MUIRHEAD LITTLE (London) presided, a discussion on

SPASTIC PARALYSIS

was opened by Dr W J ADIE (London), who said that he accepted the word "spastic" in the strict sense, and would confine his attention to those conditions in which stiffness and weakness of the muscles resulted from disease of the pyramidal system The commonest, and therefore the most important of these, was the form of cerebral diplegia, generally known as Little's disease According to many, injury to the brain at birth was the most important ætiological factor in Little's disease, but Dr James Collier considered that the essential anatomical lesion was a primary degeneration of cerebral neurones, due to causes at present unknown The remarkable researches upon the mechanism of birth injuries, and the pathological changes produced thereby, that were being carried out by Schwartz and his associates, demonstrated the great frequency of these injuries, and the decisive part they played in producing much infantile mortality which was at present attributed to other causes This work proved that not only could gross changes occur, but that atrophic sclerosis might result from injury to the brain sustained at birth Dr Adie himself had called attention to the remarkable group of symptoms presented by men who had sustained gun-shot wounds of the vertex, with injury to the superior longitudinal sinus, producing a transitory clinical picture of Little's disease in its purest form There were two other features of ordinary diplegia which he found difficult to reconcile with the notion of a primary neuronic degeneration as the essential anatomical cause (1) that the disease was not a familial one, and (2) that practically all the conditions in which primary neuronic degeneration was generally accepted as the anatomical cause, the course of the disease was progressive to death, or up to a point peculiar to the disease, or to the affected family, whereas the tendency to improve was highly characteristic of ordinary non-familial diplegia For practical purposes it mattered little whether the damage was pre- or intra-natal The important fact was that diplegia from birth tended to improve, and much could be done in these cases by appropriate surgical treatment The cases must, however, be carefully chosen Gross mental defect was a contra-indication, but where this was moderate an operation which would enable the child to move about might bring about an improvement in the mental condition Diplegia and epilepsy was an unfavourable combination, and if the fits were not easily controlled by appropriate remedies the surgeon should hesitate before operating on the limbs, as the prognosis for the mental condition was bad Operation was hardly worth while when involuntary movements were the unfavourable symptoms

After describing some forms of familial diplegia, such as amaurotic family idiocy, the Merzbacher-Pelizaeus "disease" and the hereditary form of spastic spinal paralysis, Dr Adie went on to deal with the neurological problems presented by spastic paralysis He said that recent studies on decerebrate rigidity had added greatly to the knowledge of muscle tone, but so far they had given no clear indication for new methods of treatment The disturbance of tone and the reflex phenomena of spastic paralysis in man were identical, as Walshe had pointed out, with the tonic and phasic reactions in decerebrate animals It might well be that sympathetic nerve-fibres reached striped muscle-fibres and exerted an important trophic influence upon them, but the evidence available at present did not support the notion that the sympathetic played any part in the regulation of muscle tone Gaskell showed long ago that the sympathetic nervous system was not a separate nervous system, interchanging fibres with the cerebro-spinal system, but was formed by fibres given off from the cord Langley made it clear that the autonomic system of which the sympathetic is a part, though capable to a certain degree of independent action, functioned under the control of higher centres These higher centres from which he believed all impulses passed that reached the sympathetic, were situated at a level cephalad to the point of election for the section producing decerebrate rigidity, and if his assumption were correct, sympathetic impulses to the muscles, if they existed, were cut off by the very section which produced decerebrate rigidity It was certain that complete ablation of the sympathetic system had no effect on decerebrate rigidity, and hence the division of sympathetic fibres were not likely to influence spasticity He hoped that surgeons who had performed sympathectomy in spastic states would communicate their results during the discussion

Mr BLUNDELL BANKART (London) said that spastic paralysis was not a disease, but a physiological state—the natural physiological result of the anatomical condition present in any given state It closely resembled, if it was not identical with, the condition known as decerebrate rigidity, which was produced experimentally by section of the brain above the level of the mid-brain The treatment of spastic paralysis was operative It was true that considerable improvement might sometimes be effected in spastic individuals by systematic training, or re-education of movements, but apart from that non-operative treatment was useless, and he had never yet seen any permanent benefit result from massage, manipulations, or electrical stimulation Moreover, in the majority of cases the place of re-education was after operation and not before it When structural shortening existed, it had to be treated by a direct attack on the shortened muscles or their tendons But when dealing with pure physiological contracture there was a choice of methods It was hardly necessary to discuss Foerster's operation of posterior root section, since it had been universally abandoned as a method of treating spastic paralysis It was, however, necessary to say something about the operation of sympathetic ramisectomy, which had been recently introduced by Hunter and Royle, and had now been given a fair trial The operation was based upon the hypothesis that the functions of movements and posture were performed by entirely different sets of muscle-fibres, and that the movement fibres were supplied by the ordinary spinal nerves hip, he was sure that it was quite true that many patients go on for a long time with very little pain He knew of a woman of 40 with unilateral dislocation, who rode and played a good game of tennis

Mr S T **IRWIN** (Belfast), referring to displacement of the head of the femur, said that up to the age of about 11 years the epiphyseal cartilage of the head was continuous by a bar of cartilage with the cartilaginous neck and that this prevented slipping of the epiphysis, which was rare under that age He showed some excellent demineralised specimens and others illustrating this detail in the development of the femur, and a number of lantern slides of cases of displacement of the epiphysis and of arthritis from various causes

Mr T P **MCMURRAY** (Liverpool) preferred a simpler classification than that of Mr Fairbank He would divide cases into tuberculous and non-tuberculous and subdivide the second category into traumatic and infective This classification would not include pseudo-coxalgia He thought that sesamoid bones in the neighbourhood of the hip-joint did not predispose to arthritis

Mr **HARRY PLATT** (Manchester) referred to the diagnostic value of information concerning the comparative incidence of the various types of chronic hip disease, and particularly to the age of onset Broadly speaking, a chronic hip lesion in a child under 5 years of age was likely to be tuberculous arthritis, between the ages of 5 and 10 pseudo-coxalgia was at least as common as tuberculous arthritis In the second decade tuberculous arthritis was found to be a comparatively rare lesion the characteristic hip lesion of this age being traumatic coxa vara At all age-periods a transitory synovitis due to trauma or infection might occur It must be recognised that the symptoms of " mild hip disease " were seen in the early stages of both the tuberculous and non-tuberculous lesions Tuberculous arthritis proper could be diagnosed with ease in the florid phase but considerable difficulty was experienced in the extra-articular forms of tuberculous coxitis An early confirmatory sign of primary disease of the acetabulum was enlargement of the iliac glands The importance of this sign did not seem to be appreciated widely. Occasionally the clinical course of tuberculous coxitis was comparable to the better-known " dry arthritis " of the shoulder-joint In such cases destructive changes developed after a long latent period, during which there might be an apparent complete remission of symptoms Pseudo-coxalgia with its typical radiographic picture usually offered little difficulty in diagnosis Chronic infective synovitis and arthritis, arising de novo in children, was a rare affection, but in hip-joints already defective, as for example, in the milder degrees of congenital subluxation, secondary arthritic changes were often seen In the adolescent arthritis deformans juvenilis showed quite a typical clinical and radiographic picture, but was unlikely to be a true primary coxitis At this age-period a " dry arthritis " of non-tuberculous origin seemed to exist as a definite entity but it must be admitted that the final pathological proof was often wanting

Mr **ALAN H TODD** (London) advocated elaborate classification clinically so as to find out what were the varieties and perhaps finally to simplify the classification He believed that juxta-epiphyseal strain was a real stage of coxa vara He had experience of sesamoid bones of the hip and other occasional opacities about the upper rim of the acetabulum in X ray pictures without any symptoms. He spoke of the possibility of gonorrhœal arthritis in small children such as had been observed in hospital after an epidemic of vulvo-vaginitis In the differential diagnosis of tuberculous and non-tuberculous hips he thought that the suggestion made by Dr Knyvett Gordon of a histological examination of the blood for leucopenia and other abnormalities might give useful information, and he put in a plea for a collective investigation of this method Doubtful cases should be treated tentatively. Although some cases of unreduced congenital dislocation of the hip might not suffer grave inconvenience in after years, many others did, and it was most important to impress upon the profession the importance of earlier diagnosis and treatment than was now the rule

Mr F C **PYBUS** (Newcastle-on-Tyne) referring to Mr Irwin's specimens of femurs, said that the cartilaginous head was freely vascularised before ossification and thus primary vascular infection of the hip might occur Rollier, at Leysin, allowed some movement in tuberculous joints and he thought that we might also do so In pseudo-coxalgia the X ray appearances might either precede or succeed the clinical symptoms Coxa plana might occur in this disease He doubted if arthritis deformans juvenilis was a clinical entity In tuberculosis of the neck of the femur early operation and removal of the focus and drainage might prevent involution of the joint.

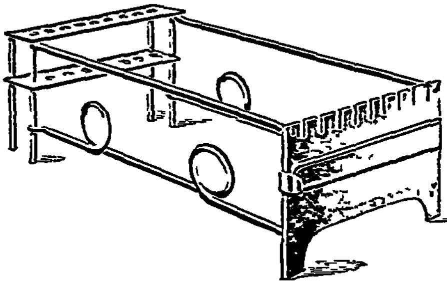
Mr W A **COCHRANE** (Edinburgh) said that an additional fact of interest in regard to displacement of epiphysis was the variation of angle of the epiphyseal line with the axis of the neck of the femur He thought that the nearer this line approached the vertical the more likely was the epiphysis to slip. Was there any relationship between slight and neglected epiphyseal separation and the later development of coxa vara ?

In a brief reply Mr. **FAIRBANK** said that in juxta-epiphyseal strains there was always slight displacement of the epiphysis Acutely infected joints should be opened and freely drained without tubes

New Inventions.

AN OPERATIVE RADIUM-NEEDLE STAND.

THE stand here illustrated is designed to facilitate the radium surgeon in operations of access and insertion. The illustration shows the stand with radium needles and tubes in position, together with their attached threads and identification beads. Sterilisation may be effected by boiling the stand with the needles, &c , in situ, or the needles and tubes may be sterilised separately in spirit and then placed in position If using the former method, the threads are anchored by means of a metal band with aseptic hinge which secures them against the end of the apparatus, while the radium tubes remain safely in test-tubes passed through the wire loops provided on the lower horizontal support of the frame. At operation the band is swung back to liberate the threads and the stand is placed on a table close to the operator ready for use



We are indebted to Messrs J Gardner and Son, 32, Forrest-road, Edinburgh, for making the stand for us

ARTHUR B. SMITH, M B., F.R C S Edin.
SYDNEY M. SMITH, M B , Ch B. Edin.

London, W

the cerebral cortex was involved. If these children were treated and taught to walk, the onset of the symptoms of spasticity occurred at about three years of age, but if they were left untreated spasticity did not occur until 15 or 16 years of age

Mr A ROCYN-JONES (London) pointed out that operation not only benefited the physical condition of the patients, but it also benefited their mental condition Stoffel's operation was the ideal treatment, but in some cases a combination of this operation with muscle and tendon lengthening was necessary, Adductor spasm was likely to recur after Stoffel's operation, and he therefore always cut the adductor longus in addition to removal of part of the nerve

Mr A H TODD (London) said that in the treatment of upper limb defects the enthusiasm of the parents was often a determining factor It was important to get the child to use both hands, and treatment in such cases could be summed up in the phrase—a keen mother and a wheel-barrow

Dr N B CAPON (Liverpool) said that he spoke from the point of view of the children's physician Since cerebral diplegia was almost certainly due to birth trauma, the right line of treatment for spastic diplegia was to treat it before the spasticity developed —i e , when the baby was 1 to 2 days old The lesion produced by the birth injury was not a meningeal hæmorrhage (except in cases where death occurred), but was due to œdema, congestion, and subtentorial hæmorrhage, and for relief of the condition repeated lumbar punctures were necessary and efficacious If lumbar puncture was not done, the results found were those described by Schwartz, to which Dr Adie had referred

Dr ADIE, in reply, said that Schwartz's work had shown that even alleged congenital defects of the brain were the results of birth injury There was no drug which had any beneficial influence on spasticity, but for the general "jumpiness" described by Mr Fairbank he would recommend bromides

Mr BANKART, replying, said that with regard to the question of nerve or muscle section there was much to be said on both sides In view of the experimental results shown on the screen by Dr Beattie he would like to ask him why ramisectomy had failed in the human subject ?

SECTION OF ORTHOPÆDICS

FRIDAY, JULY 23RD

THE first meeting of this Section combined with the Section of Diseases of Children to discuss Spastic Paralysis, and has been reported under that section On the second day, Mr E MUIRHEAD LITTLE presiding, a discussion on

NON-TUBERCULOUS COXITIS IN THE YOUNG

was opened by Mr H A T FAIRBANK, who referred to an admirable paper by Mr Alan Todd, read at the Orthopædic Section of the Royal Society of Medicine He would endeavour to cover the same ground Coxitis might arise from trauma or infection, and he suggested as a basis of discussion the following classification (1) Traumatic synovitis and arthritis, (2) traumatic synovitis and arthritis with adolescent coxa vara, (3) infective arthritis—acute, subacute, and chronic (subsection arthritis secondary to osteomyelitis), (4) acute rheumatic arthritis, (5) rheumatoid arthritis (Still's disease), (6) pseudo-coxalgia, (7) coxitis complicating congenital dislocation of the hip—(a) villous, (b) absorptive, (c) osteo-arthritic, (8) arthritis deformans juvenilis This differed somewhat from Mr Todd's classification "Coxitis of secondary onset" had been left out, inasmuch as all cases, including the tuberculous, were secondary to other lesions Infective arthritis depended on the organism producing it and the virulence of this organism, not on its source Taking these groups seriatim, Group (1), said Mr Fairbank, recovered with rest without immobilisation Some of his recent cases had shown a separate piece of bone in the acetabular margin, possibly a sesamoid in the reflected head of the rectus Did this condition, he asked, predispose to joint strain ? Group (2) Epiphyseal strain was the first stage of adolescent coxa vara, shortening and displacement were always present This was a very important group, for cases with gross displacement and much spasm were often mistaken for tubercle Group (3) All types of arthritis might be caused by the same organism of varying virulence, especially staphylococci, even in the same patient If the arthritis was suppurative and arthrotomy became necessary, perfect drainage was essential The subacute type in which the pneumococcus might be suspected, was to be treated by irrigation and closure of the wound After acute arthritis, abduction must be maintained at least three months to avoid dislocation Difficulties of diagnosis and treatment occurred in acute osteomyelitis of the femur with secondary arthritis Subacute and chronic cases of arthritis with negative X ray finding required immobilisation and extension, with the skiagram repeated after a month, and again if necessary after further fixation There was no special form of arthritis associated with measles In scarlet fever, all grades of arthritis up to suppuration were met with, due probably to toxins or actual infection with streptococci of varying virulence Enucleation of tonsils should not give rise to secondary arthritis if properly performed, but if infective remnants were left, arthritis might follow at any subsequent time Group (6) Tubercle might simulate pseudo-coxalgia Two clinical stages of the latter required differentiation without general spasm—from pre-arthritic tubercle of femur or acetabulum, with general spasm—from tuberculous arthritis Group (7) The traumatic arthritis which occurred after reduction of a dislocated hip was possibly infective Pain in untreated cases was due to arthritis and not to mere static conditions—which had an important bearing on treatment Was villous arthritis possibly the cause of pain when X rays failed to reveal gross changes in the head of the femur ? Absorptive arthritis might occur as a late result of reduction in older children, successful or unsuccessful Osteo-arthritis occurred chiefly in subluxated hips, undiagnosed until the onset of arthritis Group (8) The juvenile form was very rare as a primary affection It was, as a rule preceded by anatomical abnormality resulting from congenital defect, trauma, or infection

Mr S W. DAW (Leeds) thought Mr Fairbank's classification a good one, but he would leave out arthritis deformans juvenilis as he was not satisfied that it existed as a separate primary entity He often came across cases which it was difficult to fit into any of the recognised groups With Mr Fairbank he would leave these unclassified until we were more certain of their status, and he suggested that arthritis deformans juvenilis should remain in this category As to rheumatoid arthritis (Still's disease), he would like to say something about the difficulties of diagnosis in the earlier stages Many years ago a case diagnosed by a colleague and himself as tuberculous was treated by immobilisation A year or two later she appeared as an out-patient with arthritis of both knees and hips He then changed the diagnosis to rheumatism and allowed exercise She was now walking very badly with much limitation of movement in all the joints In another case, diagnosed and treated as lumbar, Pott's disease appeared a year later with arthritis of practically every joint in the body, including the small joints of the hands After getting scarlet fever his joints cleared up astonishingly, but he had a dislocation of one hip as a result of scarlatinal arthritis He thought that these cases illustrated the fact that the development of multiple joint lesions might be slow The differentiation of pseudo-coxalgia from tuberculosis might be difficult, but he believed that in the former it was nearly always the case that the X ray appearance was in advance of the clinical symptoms while the reverse obtained in tuberculosis As to congenital dislocation of the publisher's reader had been more careful about the details of the revision The bibliography of papers with its subject index has disappeared, but it is still mentioned in the preface dated 1926, the diagram of ancestral inheritance no longer appears "on the opposite page" (p 325) but on the following page, Kammerer's book is dated "New York, 1924," in the text (p 211) and "Boston, 1925,' in the bibliography (p 533)

The Crystalline Lens

Semiologie Oculaire Le Cristallin et son Appareil Suspenseur By Felix Terrien, Professor in the Faculty of Medicine in Paris Paris Masson et Cie 1926 With 158 figures Pp 240 6s

This volume, which deals with the anatomy, physiology, and pathology of the crystalline lens, is a section of a work planned on a large scale to include the whole of ophthalmology The embryology and development of the lens are first discussed, adequately enough, on familiar lines The anatomical section which follows is well illustrated One of the diagrams clearly displays the variations in the thickness of the lens capsule on its anterior surface, which variations, according to modern views, are an important factor in the mechanism of accommodation The theory of Helmholtz, which ascribes the increase in the curvature of the anterior surface of the lens during accommodation to the relaxation of the zonular fibres, still holds, having recently received support from the work of E F Fincham Tscherning's theory has now but few adherents, while that recently put forward by Lindsay Johnson, who ascribes the alteration in the curvature of the lens to the hydraulic pressure of the aqueous, is firmly rejected by Prof Terrien The second and smaller half of this volume is devoted to the various forms of cataract and dislocated lens Operative treatment is reserved for another volume, and the author here merely indicates his preferences for conservative methods of extraction preferably combined extraction with a conjunctival bridge and a small peripheral iridectomy We should have welcomed a somewhat fuller treatment of the subject of congenital cataract, apart from the anterior polar and lamellar forms there is little more than a page allotted to this condition Total congenital cataract is one of the most difficult subjects with which the ophthalmic surgeon is called upon to deal and the prognosis after operation is always doubtful A considerable percentage of the inmates of blind schools are children who have been operated on in early childhood for cataract with unsatisfactory results, being left with nystagmus and the remains of lens capsules in both eyes

Possibly the author will find opportunity to deal more exhaustively with the treatment of congenital cataract when he comes to discuss operative measures

Diseases of the Ear

Politzer's Text-book on the Diseases of the Ear For Students and Practitioners Sixth edition Revised and largely rewritten by Milton J Ballin, M D, Ph B, Attending Oto-Rhino-Laryngologist, Bronx Hospital, New York London Bailliere, Tindall and Cox 1926 Pp 776 31s 6d

Adam Politzer was an outstanding figure in otology through the second half of the last century, he published his method of inflation of the tympanum in 1863 His text-book of diseases of the ear has been through many editions in many languages, it excels especially in the careful detail of the description of the examination and treatment of the commoner forms of ear disease the inflammations of the middle ear and the varieties of middle-ear deafness Suppuration of the middle ear for instance shows great variety in its course and in the pathological appearances which it produces, Politzer's minute account of the details of its treatment are most useful not only to the practitioner, but to the otologist

But otology has advanced considerably in some directions in the last 20 years, Politzer's is now an old book and, unfortunately, Dr. Ballin has not revised this new edition with sufficient care to bring it up to date Even a cursory examination of the references to authorities given in footnotes makes this evident; few, indeed, of these references are less than 20 years old certain "recent investigations" mentioned in the text carry a reference to a paper published in 1902, and many papers are dated from the last century The difficulty in determining whether we are reading what Politzer wrote many years ago or an addition made by the translator further detracts from the book As to the later developments in otology, the description of nystagmus produced by caloric stimuli and by rotation is not clear enough to be of use in a clinical examination of the labyrinth; the same criticism must be applied to the account of the pathological changes in the cerebro-spinal fluid obtained by lumbar puncture, and it is odd to read even a short description of the static function of the vestibule without a reference to the work of Magnus and de Kleijn On the other hand, operations devised during last century for the improvement of cases of "adhesive" middle-ear catarrh, such as artificial perforation of the drum division of the posterior fold, and tenotomy of the intratympanic muscles, are discussed at considerable length though they have long been abandoned The attempt to modernise this once excellent and authoritative work has not been successful

Treatment of the Acute Abdomen

Operative and Post-Operative By Zachary Cope, B A, M D, M S Lond F R C S Eng Senior Surgeon to Out-Patients St Mary s Hospital, Paddington Oxford Medical Publications London Humphrey Milford Oxford University Press 1926 Pp 254 10s 6d

This is a volume companion to the author's well-known monograph on the Early Diagnosis of the Acute Abdomen It is primarily intended to help medical men not much practised in abdominal surgery who are called upon in emergency to deal with acute abdominal conditions Far from being an exceptional experience, the spread of cottage hospitals all over the country has made this circumstance more and more common and practitioners in remote parts constantly have to deal with conditions outside the experience of their ordinary practice To such men this volume should prove an invaluable aid Lucid and concise directions are backed by sketch drawings which are so clear that it is scarcely necessary to read the text in order to appreciate the detailed technique of even complicated operations The chapter on preparation and after-treatment will be invaluable to those who cannot depend on the help of an experienced sister Any doctor who is liable to run the risk of having to perform an emergency operation should obtain this book and master its contents before the emergency arises

The Law Relating to Dentistry

The Law and Practice Relating to Dentists and Dentistry By Albert Crew Barrister-at-Law London John Bale Sons and Danielsson 1926 Pp 228 10s 6d

Mr Albert Crew has brought together in a handy volume the Dentists Acts of 1878 1921, and 1923 with explanatory notes and comments and with the Dental Board s Regulations and Standing Orders His chapters on professional ethics infamous conduct professional negligence and professional partnerships contain matter of value and interest to medical as well as dental practitioners An earlier chapter on the functions and characteristics of a profession is somewhat discursive and is better suited to the same author s similar volume on the profession of an accountant Accountants a body organised and controlled without statutory assistance or authority,

Reviews and Notices of Books.

INTERNAL SECRETION OF THE PANCREAS AND INSULIN

La Secretion Interne du Pancreas et l'Insuline By Dr ANDRÉ CHOAY Paris Masson et Cie 1926 Pp 570 8s 4d

THIS volume is an exhaustive summary of the literature upon the internal secretion of the pancreas It begins with an historical review which contains a good summary of the researches of K Brunner, instead of the usual cursory reference to this worker Dr Choay describes how Brunner in 1688 removed the pancreas from dogs and noted the increased appetite, thirst, and wasting which followed The author points out that Brunner cannot have succeeded in removing the entire pancreas, since the diabetes following the operation was not fatal Indeed, Brunner's own accounts of the post-mortem examinations of his animals showed that part of the gland had been left A tribute is also paid to the work of Cawley, an English physician who isolated sugar from the urine and noticed the presence of a pancreatic lesion as early as 1788 It is clear that the author has not merely accepted the historical records of other workers, but has himself investigated the literature Dr Choay describes in detail the various methods of performing pancreatectomy on suitable laboratory animals, and gives a careful account of the clinical history of depancreatised animals together with some deductions made from a study of their metabolism

The second chapter is devoted to histology and the third to a review of the various attempts to demonstrate the internal secretion of the pancreas in the different efferent pancreatic vessels Here the perfusion experiments of the earlier workers are described at great length Chapter IV is concerned with researches on the preparation of an active pancreatic extract, and the different methods for the manufacture of insulin and its purification and chemical properties are discussed The pharmacological action of insulin is fully and clearly described and two excellent figures show rabbits in typical hypoglycæmic attitudes The chapter upon therapeutic use is brief but sets out the principles of the various methods for the use of insulin and the treatment of diabetes The origin and distribution of insulin and the theories of its mode of action are discussed at length

The volume, which closes with a list of 1377 references, is an exhaustive and well-illustrated summary of the work done upon insulin up to the date of publication, and will be of the greatest value to biochemists and physicians

THE SURGERY OF GASTRO-DUODENAL ULCERATION

By CHARLES A PANNETT, B Sc , M D Lond , F R C S Eng , Professor of Surgery in the University of London, Surgeon to St Mary's Hospital London · Humphrey Milford Oxford Medical Publications 1926 Pp 154 10s 6d

IN the compass of a small handbook Prof Pannett has succeeded in presenting the modern views regarding gastro-duodenal ulceration in an attractive manner After a brief discussion on the pathology and symptomatology of the disease he devotes two-thirds of his space to treatment He presents clearly and fairly the views held by other surgeons, especially when they conflict with his own views These are well presented, backed by cogent argument and by illustrations drawn from a considerable experience The result is a decisive outlook often lacking in larger monographs He is strongly in favour of the excision of all gastric ulcers, whenever this is feasible, reserving simple gastro-jejunostomy for those cases where the extent of the ulcer or of the adhesions renders excision too severe a procedure In ulcers at a distance from the pylorus he prefers sleeve resection, holding that the usual operation of partial gastrectomy sacrifices too much of the stomach wall For ulcers of the duodenum he is an ardent advocate of partial duodenectomy, considering that the results amply justify the added risks of the operation The book is illustrated largely by the author, and his surgical colleagues will envy his powers as a draughtsman For example, in the pages devoted to technique, the details of such a complicated operation as a Péan resection can be grasped in an instant from the author's sketches Each chapter concludes with a full bibliography The book should appeal to a wide audience, for though it is written essentially for the operating surgeon, its pages will be of interest to the general practitioner who wishes to understand the trend of modern gastric surgery

We congratulate the author on the production of a monograph at once readable and complete

ATLAS OF MIDWIFERY

By COMYNS BERKELEY, M A., M C , M D Camb , F R C P Lond , M R C S Eng , Senior Obstetric and Gynæcological Surgeon to the Middlesex Hospital , and GEORGE M DUPUY, M D London · Baillière, Tindall and Cox 1926 Pp 160 7s 6d

THIS book consists of 250 illustrations and eight radiographs with rather extensive legends, but is without any text properly so-called The legends throughout are excellent, and the fact that such an experienced teacher as Mr Comyns Berkeley is one of the joint authors is sufficient guarantee that the teaching, as far as it goes, is up to date, sound and accurate For students whose memory is of the visual type this book would be a useful addition to a cram book when revision for examinations is being undertaken This we suppose is the purpose the book is designed to serve, for the ordinary student's text-book contains more figures than are found here, and although some subjects which particularly lend themselves to this method of explanation are well treated, most of the illustrations are neither better nor worse than those commonly found in text-books Many of the drawings appear to be worthy of better printing, and some, the Fœtal Circulation, for example, really need colour printing to make them intelligible.

HEREDITY

Fifth edition By J ARTHUR THOMSON, Regius Professor of Natural History in the University of Aberdeen London John Murray 1926 With 44 figures Pp 542 21s

A GREAT many books are published nowadays about heredity and in many ways this is one of the best Most of the recent works are really more about mendelism, and they lack the general historical background which Prof Thomson gives so well His book was first published in 1908 and, we think wisely, he has left large parts of it unaltered We can thus appreciate what the problems looked like nearly 20 years ago and realise that many of them look much the same to-day The rediscovery of Mendel's work has led to one of the most fruitful of biological revolutions, but it has yet to be proved—which some enthusiasts for the growing edge of natural knowledge are apt to forget—that what he found out is the whole explanation of inheritance Those who have revelled in books like Prof T H Morgan's Theory of the Gene will probably think Prof Thomson rather old fashioned and not so sure of the reasons of things as he should be There is, it is true a good deal of work of importance that he does not notice—the books of Crew and Goldschmidt for example, are mentioned in the bibliography, but not much use seems to be made of their contents in the text—but he includes much which is now often omitted, and his book forms an excellent complement to the very latest publication It is unnecessary to say that it is easy to read and understand We could wish that the author and the

THE LANCET.

LONDON SATURDAY, SEPTEMBER 18 1926

THE LEGAL DISABILITIES OF HOSPITALS

IF all the generous promptings of intending donors were to materialise and the proceeds to pass unabated into the coffer of the hospitals, the anxiety of their treasurers would be in large measure relieved. On a later page of this issue is an account of what may well be hoped is the last of a series of frauds in the diversion of charitable contributions into private pockets. This source of loss, though deplorable, should hardly be large or persistent, but there are other more subtle disabilities with which hospital finance has to cope, and in a recent address[1] to the British Hospitals Association, Sir JOHN PAGET, K C, acutely analysed the legal disabilities of hospitals, due to the gratuitous nature of the services they render. Hospitals—at any rate those which are supported by voluntary contributions—are what the law calls eleemosynary institutions, they exist, as Chief Justice HOLT observed 150 years ago, "for those that are poor and mean and lowly and sickly." And, because they are generous in their charitable work, they are under a heavy legal disadvantage. To begin with, a promise to contribute money to a hospital is not legally binding. A promise to pay something for services which are given gratuitously is a promise which lacks the legal essentials of a valid contract, though it is possible (but by no means certain) that a legal contract might arise if the subscriber authorised a specific expenditure which is incurred by the hospital in reliance upon his making it good. An even more serious disability of the voluntary hospital system is the familiar fact that hospitals cannot sue for the cost of the treatment they supply even when there is some well-to-do person who is morally liable. Let us take the case of traffic accidents. These are an important element in the congestion of hospital accommodation. Not long ago, says Sir JOHN PAGET the senior house surgeon of the Bedford County Hospital was complaining that urgent cases requiring operations such as appendicitis had to be turned away owing to the number of beds occupied by motor accident cases. Sir JOHN PAGET quoted a figure of over 40 000 as the number of the traffic accidents in the metropolitan police district last year. It is reasonable to assume that a large proportion of these found their way to a hospital, and doubtless in many such cases the victims recovered damages for the negligence of a motorist. But it is certain that the hospitals got nothing. A plaintiff who claims damages for negligence on the part of a motorist often gives particulars of having incurred expenses for surgical and medical appliances and for nursing and medicines and these expenses the law courts will allow him to recover. But no plaintiff is allowed to say that he has been a source of expense to a hospital as the result of the defendant's negligence, and that the defendant ought to make good that expense. The public probably does not realise the strange consequences of the legal position. As Sir JOHN PAGET pointed out, it pays the reckless motorist to run down a poor man rather than a rich man, the poor man is more likely to receive treatment in a hospital for which the motorist cannot be made to pay while the rich man is more likely to be treated in his own home, and all the expenses of that treatment from specialists at the beginning to sea voyages at the end are items for which claim can legally be made. Similarly, it pays the reckless motorist, if he runs down a rich man, to injure him so severely that he must be treated forthwith in a hospital instead of being taken to his own home.

It is patently an unfair arrangement which makes hospitals bear the burden of another's negligence and yet gives them no *locus standi* when compensation is assessed. Is there any possible remedy? Perhaps the most practical suggestion is Sir JOHN PAGET's proposal to develop a feature of our workmen's compensation law. Under Section 8 (2) (v.) of the 1925 Act the compensation in fatal cases where the workman leaves no dependants is to be a lump sum equal to the reasonable expenses of his medical attendance and burial not exceeding £15. Under Section 26 (1) if the workman has no legal personal representative, the compensation may be paid direct to the person to whom the expenses of medical attendance and burial are due. Sir JOHN PAGET pertinently asks why, if the undertaker can thus make a direct claim, the hospital should not be allowed the same privilege. No doubt any alteration of the law in the direction of allowing hospitals to recover money promised by patients or to sue for their fees and charges would require special legislation. But there seems no reason why Parliament should not enact that, in cases of injury due to negligence, hospital expenses may be added to the plaintiff's statement of claim and recovered from the defendant. When the legislature comes presently to consider the passing of a new Act dealing with road vehicles and traffic, there will be an opportunity to ventilate some such proposal.

Opponents of a change in the law will not fail to remind the hospitals that there is another side to the picture. A barrister's services are deemed in law to be honorary and gratuitous, he therefore cannot sue for his fees but on the other hand, he cannot be sued for negligence. Similarly, the hospital which gives gratuitous treatment, if it cannot recover the cost of the treatment, can nevertheless not be made liable for injuries to patients or inmates arising from the negligence of its physicians, surgeons, nurses or assistants provided that due care and skill has been exercised in the selection of the staff. This immunity might have to be surrendered, together with the modified immunity from certain forms of taxation which hospitals enjoy, if the principle of gratuitous service were abandoned. The alternatives, however, deserve consideration, for the voluntary hospitals must explore every possible avenue of prospective income. The amounts of voluntary contributions will, we fear, show some falling off if the prolonged coal stoppage causes an increase in income-tax next year.

NEPHRITIS. A NEW HYPOTHESIS

CLASSICAL teaching in this and other countries distinguishes two common varieties of nephritis an œdematous or hydropigenous type with retention of chlorides and an azotæmic or uræmic type with nitrogen retention but normal chloride excretion. And it has become customary to explain the typical difference as due to the part of the kidney affected whether that concerned with the excretion of urea or of non nitrogenous crystalloids. There have always been difficulties in this anatomical theory for one type of disorder may pass rapidly into the other and in the dropsical type the blood chlorides are not may be interested in the privileged position which dentists enjoy, but dentists, having obtained a full measure of statutory monopoly, are no longer concerned with the informal status of less fortunate callings Mr. Crew rightly emphasises the enviable position of the dentist's profession, now so completely protected by Parliament that no poachers are allowed in that preserve The medical profession is itself less secure The book gives a useful summary of decided cases including Binns *v* Dental Board and Canton *v* Dental Board, two decisions which interpreted with a surprising elasticity the words in the Dentists Act of 1923 whereby service during the late war in His Majesty's forces was made one of a group of qualifications for admission to the register. The position of dentists in view of the changes in the political administration of Ireland is dealt with, but might perhaps be further elaborated Against Subsection 15 (1) of the 1921 Act a note might be inserted in respect of the words allowing proof of regulations " by the production of a copy purporting to be printed by any printer in pursuance of an authority given by the Privy Council " It is understood that the Privy Council does not, in fact, authorise any printer in this connexion except the King's Printer (i e, the Controller of H M Stationery Office), which means that in practice the Regulations appear in Statutory Rule and Order form and presumably would prove themselves as such, apart from the subsection above quoted

---

[1] THE LANCET, July 3rd p 32

OPHTHALMIC NURSING

By MAURICE H WHITING, O B E, F R C S, Surgeon, Royal London (Moorfields) Ophthalmic Hospital With an Introduction by SIR JOHN PARSONS London J and A Churchill. 1926 Pp 173 5*s*

MOST nurses go through their general training with little experience of eye work, and to many the eye remains almost as mysterious a structure at the end of their course as it was at the beginning If they are unable to obtain experience in the eye ward of their hospital or in a special ophthalmic hospital they can, at any rate, gain some assistance from a book of the right sort This volume is based on the methods employed at Moorfields Ophthalmic Hospital by a member of its staff who formerly held the post of resident medical officer in its wards and is thus well qualified for his task It is addressed not only to nurses but also to medical students, house surgeons, and practitioners, and contains sound elementary information on optics diseases of the eye, and operations, besides actual directions for ophthalmic nursing From the nurse's point of view, perhaps too little stress is laid on those minute details for which she is primarily responsible in the preparation and after-treatment of patients undergoing major operations The chapter on Refraction and Treatment Clinics for School-children is valuable

---

VISCERAL RADIOGRAMS

A Descriptive Atlas of Visceral Radiograms By A P. BERTWISTLE and E W H SHENTON London Henry Kimpton 1926 Pp 250 21*s*

THE title of this book is well chosen In some 250 pages the authors have brought together a pictorial survey of almost the whole field of radiology, other than that of the bony structures with which one of the authors (A P B) has already dealt in a previous volume In order to make the atlas representative the illustrations have been drawn from the practices of a large number of radiologists, surgeons, and physicians, to each radiograph is appended a short concise clinical history, a description and a small line drawing to emphasise the salient points of the picture, 327 excellently reproduced illustrations are included, and the authors have been wise in their selection, the relative balance of importance being well maintained While referring to practically every innovation, they have held their hand in regard to methods which may or may not be of ultimate service For instance, only one illustration is devoted to the phenolphthalein test of gall-bladder efficiency, two to ventriculography, and not even one illustration is given to pneumoperitoneum which had a brief vogue a few years ago Two pages, however, are devoted to the lipiodol injection into the subarachnoid space of the spine, these being from the practice of Prof Sicard Sufficient illustrations of the use of pyelography are included to indicate that this has become a routine method of more than passing importance

While admiring the skill with which this atlas has been compiled, we are sure that the authors have recognised that radiography is too vast a subject to be taught in this way Clinical observation with the aid of X rays is essential, but as an outline of this vast aspect of medicine the volume will be of service, particularly to those who cannot command the services of an expert radiologist who is trained in this specialised outlook on medical science.

The publishers are to be congratulated on the way in which the book is produced at such reasonable cost

---

THE NATURE OF LIFE

A Bipolar Theory of Living Processes By G W CRILE New York Macmillan Company. 1926 Pp 405 21*s*

THE processes which distinguish the living from the non-living are due to electrical forces within the protoplasm which endow it with the essential qualities of irritation, assimilation, and reproduction This potential within the cell is created by variations in oxidation on the two sides of the lipoid films which separate nucleolus from nucleus, nucleus from cytoplasm, and cell from environment Such is we believe, the pith of the interpretation of life which Dr Crile urges upon us And it has all come from a long attempt to explain the phenomena of shock which, in his capacity as a great practical surgeon, he has been so successful in preventing He may be right No one can say, for he deals with imaginative fields where right and wrong are matters of faith But he brings forward a great variety of curious observations which may be studied with profit even if they do not compel belief in the meaning which he reads into them by parallels which seem mostly unreal and analogies which seem mostly false His writings on the anatomical signs of fatigue in cells or on the temperatures of the blood and organs under various experimental procedures are of interest But it is hard to believe that Dr Crile really expects us to take seriously his comparison (Fig 61) of the positive nucleus and the negative electron of a hydrogen atom with the nervous system and the rest of the body respectively of man He may be right, but, if he is, it is as a prophet, not as a demonstrator

---

JOURNALS

FOLIA CLINICA CHIMICA ET MICROSCOPICA —We have received the first number of a re-issue of this periodical after an interruption of 11 years owing to the war. It is edited by Dr L Zoja, of the University of Milan, and will be devoted to clinical investigations in microscopy, bacteriology, and chemistry The journal aims at familiarising practitioners with laboratory diagnosis Its editor belongs to the school of Alberto Riva in which the accurate and minute study of the patient is considered to be pre-eminent and laboratory investigation is held in honour in as far as it helps to solve diagnostic or theoretical problems which arise during this study The present number contains articles on the estimation of hepatic function by means of spontaneous or induced ammoniæmia, on the bacteriolytic principle of d Hérelle, and on the Wassermann reaction with concentrated serums.

successful as to permit of all other sources of infection save the actual patients, being disregarded. His contention that disinfection following plague is valueless because it does not get at the rat and its fleas takes no account of the view expressed by Lethem that the *Pulex irritans* plays a part in the spread of plague in this country.[3] Plague bacilli have been demonstrated in pulex by the Indian Plague Commission and by Verjbitski, and the epidemiological circumstances of small outbreaks as instanced by Lethem, are strongly in favour of his thesis "that in this country the first case of an epidemic is infected by a rat flea, usually found in grain or rags," but "that just as plague in rats is spread by rat fleas, so is plague in man in cold climates spread by human fleas, once the disease is started." This sequence of events is worth recalling in connexion with the small outbreak of bubonic plague in Liverpool reported in our last issue. The fact that one of the cases—but not the first—was a dock labourer is not in itself sufficient ground for impugning the rat. Investigations now being made by the health department with the assistance of the Ministry of Health may throw fresh light on the subject. Chagas, again, does not even mention the rôle of the infected louse in the propagation of typhus, although terminal disinfection may well be justified in that disease. But with these exceptions his argument appears well founded in relation to the prevalent epidemic diseases of civilised communities. Judging by a recent leading article in an American medical journal,[4] our attitude to disinfection is regarded as somewhat more conservative than that of the United States, and a thorough discussion of opposing views is recommended. An incident which occurred in the little town of Godmanchester well illustrates the difficulties which may arise in practice. Here the sanitary authority regarded the occurrence of three or four cases of scarlet fever in a school as sufficient reason for its thorough disinfection. The county medical officer thought otherwise, and the indignant council passed a unanimous resolution of dissatisfaction with such "dilatory methods." There is much need for education of the public in modern ideas as to the spread of communicable disease.

Annotations.

"Ne quid nimis"

EARLY TREATMENT OF CANCER

IN the annual report of the medical officer of health for Willesden, issued not long ago, is a memorandum by Dr W. D. Champneys on cancer, indicating what methods of attack have been employed in the fight against this disease elsewhere, and what methods might be employed in the large urban district where he works. The introductory pages of this memorandum deal in succession with the nature, distribution, cause, mortality, prevention, diagnosis, and treatment of cancer; they are so lucid and concise that they might well serve as a model for others who are drafting similar pamphlets. One word of caution should be added. The statement that the recorded mortality from cancer has trebled in the space of two generations, although literally true, is misleading, for in the decade 1851–60, which is taken for comparison, little was known about the diagnosis of cancer. In the final section of the memorandum Dr Champneys outlines a scheme for the control of cancer. To this end he would convene meetings of local medical practitioners to discuss the means to be employed and he would get recognised authorities to deliver post-graduate lectures and demonstrations. Leaflets and pictorial posters would be distributed to the public, articles inserted in the local press, and popular lectures given. But by far the most important measure for securing early diagnosis and treatment is, in the opinion of Dr Champneys, one that has so far not been tried in this country—namely, the cancer clinic for free diagnosis. Such a clinic would be established or maintained by the local authority, provided with X ray equipment and beds for the temporary admission of suspects to enable a thorough examination to be made. Diagnosis would be free except for a small charge for a barium meal when administered. It is on this proposal for a free clinic that Dr Champneys will meet with criticism. The diagnosis of cancer in its early stage is, except in a few selected sites—e g, tongue, skin—impossible without operation, and even after operation and examination of a portion of tumour removed it has recently been recognised that senile involution (in the prostate for instance) may closely simulate malignant change and be mistaken for such. A free clinic would by no means ensure the certain diagnosis of cancer in the earliest stage when it can be cured. In the United States of America, where active propaganda has been carried on for a decade to ensure early diagnosis, the mortality from cancer has not fallen, the effect of the propaganda being rather to increase the number of cases detected at an operable stage. The taxpayer may also have something to say to the proposal for if cancer is not a contagious disease and the sufferer from cancer not a danger to the community as is the tuberculous or syphilitic, there seems no reason why he should pay for the individual who refuses to go to a doctor when he suspects some illness. Free diagnosis for cancer would command the support of those who desire free diagnosis of other diseases, in a word, the institution of a State medical service. Moreover, life assurance companies would presumably provide means of early diagnosis for their clients, if their actuaries were to advise them that by so doing mortality could be reduced.

A far better way of securing early diagnosis is by a campaign designed to induce men and women who are conscious of any tumour, sore or disorder of function to consult their family or insurance practitioner without delay particularly if they are reaching middle-age. In a brief Memorandum[1] on Cancer of the Breast, which has been issued from the Ministry of Health in continuation of the memoranda on the same subject which have been appearing during the last three years the dissemination of information on the good results achieved by operation at an early stage is suggested—this to be by means of leaflets, talks, advice from local cancer committees, doctors, health visitors, and social workers. Educative counsel directed towards securing effective treatment of earlier conditions which have been shown commonly to precede cancer is also recommended. The present Memorandum has relation especially to the results of surgical operation in connexion with breast cancer, and supplements especially the information given in the third Memorandum of the series (THE LANCET, 1924 i, 1074). It incorporates the results of the survey made by Dr Janet Lane-Claypon with the help of Dr Major Greenwood whereby the previous conclusions in respect to the value of the complete operation at an early stage have been confirmed.

A SOURCE OF CHOLERA INFANTUM

THE syndrome of cholera infantum, comprising sudden severe diarrhœa with dehydration and collapse, has been found by many observers to occur in the absence of any ascertainable infection of the gastro-intestinal tract, and of any epidemic source of infection. The origin of the disorder has accordingly been referred to as "parenteral" without any definite notably increased in spite of the low chloride content of the urine, whereas in calculous anuria a concentration of plasma chlorides is seen far in excess of the normal figures. A novel and admirably argued explanation of the biochemical features of nephritis is to be found in a recent article by Dr. A. M. Fishberg,[1] of New York, who after prolonged investigation finds no evidence that a damaged kidney is ever affected as regards one excretory function without the others being equally impaired. He emphasises the differences in concentration of various blood constituents which the normal kidney brings about when secreting urine. Thus urea, uric acid, and phosphates are normal concentrated from 30 to 60 times before reaching the ureters, whereas chlorides, sodium, and calcium are normally scarcely concentrated at all. When, therefore, the kidney's concentrating function is adversely affected the result is at once seen by an increase in the urea, uric acid, and phosphates in the blood, whereas the chlorides, sodium, and potassium are not altered. O. L. V. de Wesselow,[2] in a recent article, drew attention to the failure of the grossly damaged kidney to concentrate the urinary chlorides after a salt meal. He showed how such a meal demonstrates a lack of concentrating power just as great for chloride as for urea, and in a paper which appears in our present issue brings forward still more conclusive evidence to this effect. Fishberg justly emphasises the extrarenal excretory powers of the body which, together with a natural diminution of chloride intake in nephritic cases, prevents any accumulation of this element in the blood. Of the dropsical type of Bright's disease Fishberg says that many belong to that class described by Epstein[3] in which the protein content of the blood is so lowered that a transudation of chloride and water into the tissues occurs as a purely osmotic phenomenon. Other cases of nephritic dropsy are due either to myocardial degeneration or to damage to the capillaries, the dropsy being in fact always extrarenal in origin and the diminished chloride excretion a result and not a cause of the œdema.

---

[3] The Epidemiology of Bubonic Plague in Great Britain. By William A. Lethem, M C, M D. Journal of State Medicine, November 1923.

[4] Boston Medical and Surgical Journal, June 24th.

[5] Medical Officer, July 3rd.

[1] Cancer—v. Circular 716. Ministry of Health Sept. 16th, 1926. Pp 11. 1d.

Fishberg himself has come to regard the specific gravity of the urine to be almost the most delicate and reliable of all tests of renal efficiency; it is nearly 30 years since Koranyi[4] demonstrated that in uræmic cases the conductivity of the serum remains normal, whereas its freezing-point is greatly lowered, physical facts which to-day are explained by an increase in molecular concentration (i.e., non-protein nitrogen) without gross change in the concentration of electrolytes. Fishberg finds that in all patients with severe renal damage the maximum specific gravity of the urine, even after prolonged deprivation of fluids, seldom reaches 1015 though it is rare for it to fall below 1010, proving that some concentrating power is still left. In order to study this subject a modification of Volhard's technique has been adopted, the patient receives no food or drink after his evening supper, voids his urine in the morning and subsequently supplies hourly specimens for three hours. In a normal man these latter specimens will show a specific gravity approaching 1030, but in no case of uræmia did it reach 1020, and often remained in the region of 1010. The final deduction made by Fishberg is that two stages may be observed in cases of renal hypofunction which he terms those of compensation and decompensation. In the former there is a loss of concentrating power alone which is compensated for by polyuria so that the blood chemistry is undisturbed; in the decompensated stage polyuria either disappears or is insufficient to excrete the waste products, and in consequence the nitrogenous constituents accumulate in the blood giving the typical picture of nitrogen retention. Oliguria, according to this hypothesis, if due to impaired renal function, is but the terminal stage of impaired renal function which affects the excretion of all the urinary constituents. But extrarenal causes of diminished water excretion are far more common, ranging from cardiac failure to the osmotic retention described by Epstein. Such cases can be recognised by the fact that such urine as they do eliminate has a high specific gravity. "Prerenal deviation" is the phrase chosen to describe this phenomenon.

Time alone will decide to what extent Fishberg's views are acceptable, particularly as regards the problems of anasarca, but he has formulated a thesis so lucid and logical as to merit close attention. The work of de Wesselow has pointed consistently in the same direction, and appears to provide strong support for this view.

◆

TERMINAL DISINFECTION

Attention was recently called in our columns[1] to the increasing scepticism with which the modern sanitarian is regarding terminal disinfection of premises as still practised in this country when a case of infectious disease recovers or dies or is removed to hospital. A reasoned statement of the case against terminal disinfection is contained in an article[2] entitled "La Pratique Actuelle des Désinfections Finales," by Prof. Carlos Chagas, Director-General of Public Health in Brazil. Prof. Chagas, who writes as one whose mind is already made up, cites much bacteriological evidence to show that practically all the non-sporing bacteria and protozoa rapidly lose their virulence and power of infection when removed from their natural habitat in the animal host unless carefully nurtured under laboratory conditions. Disinfection is therefore unnecessary, as the virus rapidly succumbs under ordinary domestic conditions. In any case he regards it impracticable to expose all the micro-organisms for a sufficiently long time to the action of chemical solutions or lethal fumes. In Rio de Janeiro disinfection on a large scale was virtually dropped in 1920 without untoward result. Incidentally Prof. Chagas notes the absence of any influence on the tuberculosis curve from radical housing reform carried on in Rio since 1923. He argues that terminal disinfection by health departments diverts public attention from real prophylaxis which takes cognisance of the dangers associated with the patient during the acute phase of his illness, the anomalous and ambulant forms of communicable disease, and the human carrier of infection. He admits that some concession may have to be made for a time to public prejudice by employing a modified form of terminal disinfection, which amounts to little more than an ordinary "spring cleaning." The money saved by discontinuing elaborate technical processes would be well spent on paying health visitors whose function would be to educate those in charge of infectious cases, both as regards the care of the patient and the prevention of the spread of infection. We think that those who agree in the main with Prof. Chagas will nevertheless take note that he quotes only such bacteriological evidence as supports his case. The typhoid bacillus does not always succumb in drinking water within 12 to 14 days, and the search for human carriers can scarcely be so

---

[1] A. M. Fishberg: Arch. Int. Med., 1926, xxxvi., 259.

[2] O. L. V. de Wesselow: Quart. Jour. Med., 1925, xix., 53.

[3] A. A. Epstein: Amer. Jour. Med. Sci., 1922, clxiii., 167.

[4] Koranyi: Ztschr. f. Klin. Med., 1897, xxxiii., 1.

---

[1] The Lancet, 1926, i., 1045.

[2] Office Internationale d'Hygiène Publique Bulletin, May, 1926.

successful as to permit of all other sources of infection save the actual patients being disregarded His contention that disinfection following plague is valueless because it does not get at the rat and its fleas takes no account of the view expressed by Lethem that the *Pulex irritans* plays a part in the spread of plague in this country[3] Plague bacilli have been demonstrated in pulex by the Indian Plague Commission and by Verjbitski, and the epidemiological circumstances of small outbreaks as instanced by Lethem, are strongly in favour of his thesis "that in this country the first case of an epidemic is infected by a rat flea, usually found in grain or rags," but "that just as plague in rats is spread by rat fleas, so is plague in man in cold climates spread by human fleas, once the disease is started' This sequence of events is worth recalling in connexion with the small outbreak of bubonic plague in Liverpool reported in our last issue The fact that one of the cases—but not the first—was a dock labourer is not in itself sufficient ground for impugning the rat Investigations now being made by the health department with the assistance of the Ministry of Health may throw fresh light on the subject Chagas, again does not even mention the rôle of the infected louse in the propagation of typhus, although terminal disinfection may well be justified in that disease But with these exceptions his argument appears well founded in relation to the prevalent epidemic diseases of civilised communities Judging by a recent leading article in an American medical journal,[4] our attitude to disinfection is regarded as somewhat more conservative than that of the United States and a thorough discussion of opposing views is recommended An incident which occurred in the little town of Godmanchester well illustrates the difficulties which may arise in practice Here the sanitary authority regarded the occurrence of three or four cases of scarlet fever in a school as sufficient reason for its thorough disinfection The county medical officer thought otherwise, and the indignant council passed a unanimous resolution of dissatisfaction with such "dilatory methods" There is much need for education of the public in modern ideas as to the spread of communicable disease

Annotations.

"Ne quid nimis"

EARLY TREATMENT OF CANCER

IN the annual report of the medical officer of health for Willesden, issued not long ago, is a memorandum by Dr W. D Champneys on cancer. indicating what methods of attack have been employed in the fight against this disease elsewhere, and what methods might be employed in the large urban district where he works The introductory pages of this memorandum deal in succession with the nature, distribution, cause, mortality, prevention, diagnosis, and treatment of cancer, they are so lucid and concise that they might well serve as a model for others who are drafting similar pamphlets One word of caution should be added The statement that the recorded mortality from cancer has trebled in the space of two generations, although literally true, is misleading, for in the decade 1851–60, which is taken for comparison, little was known about the diagnosis of cancer. In the final section of the memorandum Dr Champneys outlines a scheme for the control of cancer To this end he would convene meetings of local medical practitioners to discuss the means to be employed and he would get recognised authorities to deliver post-graduate lectures and demonstrations Leaflets and pictorial posters would be distributed to the public, articles inserted in the local press, and popular lectures given But by far the most important measure for securing early diagnosis and treatment is, in the opinion of Dr. Champneys, one that has so far not been tried in this country—namely, the cancer clinic for free diagnosis Such a clinic would be established or maintained by the local authority, provided with X ray equipment and beds for the temporary admission of suspects to enable a thorough examination to be made Diagnosis would be free except for a small charge for a barium meal when administered. It is on this proposal for a free clinic that Dr Champneys will meet with criticism The diagnosis of cancer in its early stage is except in a few selected sites—e g, tongue, skin—impossible without operation, and even after operation and examination of a portion of tumour removed it has recently been recognised that senile involution (in the prostate, for instance) may closely simulate malignant change and be mistaken for such. A free clinic would by no means ensure the certain diagnosis of cancer in the earliest stage when it can be cured In the United States of America, where active propaganda has been carried on for a decade to ensure early diagnosis, the mortality from cancer has not fallen the effect of the propaganda being rather to increase the number of cases detected at an operable stage The taxpayer may also have something to say to the proposal, for. if cancer is not a contagious disease and the sufferer from cancer not a danger to the community. as is the tuberculous or syphilitic there seems no reason why he should pay for the individual who refuses to go to a doctor when he suspects some illness Free diagnosis for cancer would command the support of those who desire free diagnosis of other diseases, in a word, the institution of a State medical service Moreover, life assurance companies would presumably provide means of early diagnosis for their clients, if their actuaries were to advise them that by so doing mortality could be reduced

A far better way of securing early diagnosis is by a campaign designed to induce men and women who are conscious of any tumour sore, or disorder of function to consult their family or insurance practitioner without delay particularly if they are reaching middle-age In a brief Memorandum[1] on Cancer of the Breast, which has been issued from the Ministry of Health in continuation of the memoranda on the same subject which have been appearing during the last three years the dissemination of information on the good results achieved by operation at an early stage is suggested—this to be by means of leaflets, talks, advice from local cancer committees, doctors, health visitors, and social workers Educative counsel directed towards securing effective treatment of earlier conditions which have been shown commonly to precede cancer is also recommended The present Memorandum has relation especially to the results of surgical operation in connexion with breast cancer. and supplements especially the information given in the third Memorandum of the series (THE LANCET. 1924, i, 1074) It incorporates the results of the survey made by Dr. Janet Lane-Claypon with the help of Dr Major Greenwood whereby the previous conclusions in respect to the value of the complete operation at an early stage have been confirmed

A SOURCE OF CHOLERA INFANTUM

THE syndrome of cholera infantum, comprising sudden severe diarrhœa with dehydration and collapse, has been found by many observers to occur in the absence of any ascertainable infection of the gastro-intestinal tract, and of any epidemic source of infection The origin of the disorder has accordingly been referred to as "parenteral," without any definite localisation of the focus concerned ; it has been held likely that this is a variable factor dependent on local and climatic conditions Dr Philip C Jeans and Dr Mark L Floyd[1] have been led by post-mortem examinations of unexplained cases to believe that the focus of infection in cholera infantum is most frequently to be found in the mastoid or paranasal sinuses They do not state, but appear to suggest, that the relation is a constant one. and they are prepared to treat all cases presenting choleraic features in infants by exploration of these sinuses The six cases which they describe furnish a chain of evidence which is certainly very convincing In all six cases pus was found in the antrum or sinus, and those in which drainage was established recovered, while those in which it was not established died Most of the cases occurred not in the summer months when bowel infections are prevalent, but in autumn or winter when the incidence of respiratory diseases is high From the otological standpoint they showed certain peculiar features , the mastoid infections were all bilateral and none of them were evidenced by any of the usual diagnostic signs These observations, in conjunction with the fact that cholera infantum is not a common accompaniment of manifest mastoiditis, suggest that the clinical syndrome described may be produced by some more or less specific infection of the mastoid with characteristics of its own It is for this reason especially to be regretted that the authors' account contains no reference to the bacteriological characters of the infections Information on this point would be of great interest and might yield further indications for prophylaxis and treatment

---

[3] The Epidemiology of Bubonic Plague in Great Britain By William A. Lethem, *M C*, M D Journal of State Medicine, November, 1923

[4] Boston Medical and Surgical Journal June 24th.

[5] Medical Officer, July 3rd

[1] Cancer—v Circular 716 Ministry of Health, Sept. 16th, 1926 Pp 11 1*d*

THE WORLD INCIDENCE OF DISEASE

The Health Organisation of the League of Nations at Geneva has recently issued a large quarto book which gives a summary of the statistics of notifiable diseases in 1925 in 33 European, 34 African, 24 American and 23 Asiatic countries, and in Australasia The data are naturally of varying merit and accuracy , some represent the highest pitch of health statistics which has been reached as yet, some are probably unreliable, at any rate, in detail And if it did nothing else, a publication such as this may be confidently expected to stimulate a progressive improvement in the collection of data, to enlarge the area in which statistics are attempted, and to raise the standard of all the returns to approximate to the best One who turns the pages even casually can see the value of such an accumulation of facts to the serious students of the world's health, especially along two lines There are, on the one hand, the diseases which are liable to be carried from one part of the world to another An agreement has been in operation for many years by which any plague-infected port is notified to everybody, so that ships coming from there may be treated with due respect

The report deals at some length with the prevalence, rise or decline of plague all over the world, and is illustrated with instructive maps Every continent except Australia is more or less infected, from California to Celebes, and from the Black Sea to the Cape and Brazil Serious epidemics in 1925 were limited to Nigeria, Kenya, Uganda, Madagascar, India and Java, and the whole will make anyone wonder what is to be the progress and termination of the pandemic which started out of Southern China 32 years ago The figures for anthrax are useful in the same way Of the countries making returns, Italy and Russia stand out Italy has about ten times as many cases as Germany, and Russia about ten times as many as Italy Within the United Soviet Republics it is far more prevalent in the Caucasus, the Crimea and other parts of the south than in the north, and infection may be specially expected in material coming from the Black Sea ports The practical utility—indeed the practical necessity—of this kind of information needs no further illustration The statistics are equally useful in another direction It comforts us to know that the deaths from tuberculosis in London were 107 per 100,000 people, while they were 291, 280, and 204 in Budapest, Paris, and Vienna But we hope it will stimulate us to better things still to read that the rates were 87 in The Hague and New York, and 83 in Chicago

To know from example what is within the range of achievement is one of the most potent factors in human progress The tale of infant mortality, which is conveniently summarised for 15 great cities since 1881, is the most conspicuous lesson of this Forty years ago six had rates of over 200 and only one was less than 150 , by 1900 Buenos Aires had got down to 93, and eight others were below 150 , in 1925 only five were over 100 and the highest was 126 No one would have thought it possible till confident health officers began to show that it could be done At the end of the volume is an informative table showing what diseases are notifiable in each country, and those who are fond of odds and ends of curious information will find them abundantly throughout

ANTIDIPHTHERITIC MEASURES IN BELGIUM

The prevention of diphtheria is making headway in Belgium, where the small distances and dense population set a problem more easy of solution than in many countries The fact that isolation is enforced less strictly in the case of diphtheria than in other infectious diseases facilitates an estimate of the value of the measures applied, especially in the schools, which are not closed as a routine measure when cases of diphtheria occur in them In Belgium it is not obligatory on practitioners to notify diphtheria, a fee of 5 francs is offered for so doing, but probably many cases elude official notice Diphtheria antitoxin is, however, available free for the use of doctors where there is any chance of the patient being unable otherwise to get it, and apparently advantage is widely taken of this privilege Dr A Bessemans Chief Inspector of Hygiene has recently reported[1] to the International Health Office on the means taken in Belgium to discover susceptible persons and to confer upon them an active immunity The experience of the Belgian Health Service now covers more than 5000 persons who have been subjected to the Schick test, and the figures, classified in age-groups, bring out well the resistance inherent in the child at birth, its gradual loss within the first two or three years of life to be replaced by a progressively increasing resistance acquired from exposure to infection In the age-group 0 to 6 months the percentage of positive reactors was only 36 rising to 76 in the age-group 2–3 years, and gradually falling to 25 in the age-group 17–19 years As elsewhere, a higher percentage of negative reactors was found in the poorer urban quarters, especially where over crowded, a population in which a history of previous sore-throat is relatively common Dr Bessemans's observations on diphtheria carriers are particularly interesting They give no sign of a high degree of natural or acquired immunity, a fact which suggests to him that it is not the mere saprophytic presence of bacilli in the throat which confers immunity, but a definite attack of disease, however slight Dr Bessemans makes the surprising statement that 41 per cent of carriers of true (*vrais*) diphtheria bacilli, as against 44 per cent of the community as a whole, were found to be positive to the Schick test This statement seems to run counter to the whole Schick theory according to which a carrier of *virulent* bacilli cannot be Schick-positive, except possibly for a short space of time The discrepancy has been cleared up by Dr R A O'Brien, who has ascertained by correspondence[2] with Dr Bessemans that the word *vrai* was not intended to imply *virulent*, for Dr Bessemans was not able to test for virulence more than a very small number of the cultures resembling the Klebs-Loffler bacillus obtained from carriers Of the carriers with negative reaction in many of them the negative reaction persisted for weeks or months, leading to the fair inference that a natural immunity does not aid its possessor in getting rid of lurking bacilli Of 71 cases not recognised as carriers, but whose brothers and sisters had been reported to be such, 38 per cent gave a positive reaction, as compared with 11 per cent, for brothers and sisters of actual diphtheria cases, the difference, though small, suggests that the presence of a carrier in the family may have a more powerful immunising effect than the presence of a case of diphtheria Dr Bessemans himself regards the Schick test as in the highest degree trustworthy, for to his knowledge no single one of the 3067 Schick-negative cases contracted diphtheria while at least 11 Schick-positive cases contracted the disease, the diagnosis being confirmed by culture Since the test is simple and has no drawbacks, he recommends its application to the personnel of infectious hospitals and institutions of all kinds His report also contains a note on the value of toxin-antitoxin mixture in conferring immunity on Schick-positive cases, a positive reaction becoming negative within six months in 85 to 90 per cent of inoculated individuals He confirms Zingher's statement that no fear of anaphylactic symptoms need arise from repeated injections of vaccine, for it is always the first which provokes the greatest reaction

---

[1] Jour Amer Med Assoc , July 24th, 1926

[1] Office Internationale d'Hygiène Publique Bulletin Mensuel, February, 1926

[2] Public Health September, 1926, p 367

TIREDNESS AND FATIGUE

MANY persons, desirous of constantly draining the cup of life's activities to the lees, are often seeking for some wonder-remedy which will prevent tiredness or, at any rate, postpone it until a more convenient season They would disregard Nature's call for rest and turn a deaf ear to the existence of fatigue Tiredness and fatigue are not interchangeable terms, although the two things in most people march closely together Tiredness is a subjective feeling, associated with a desire for rest Fatigue is a condition of diminished capacity for activity and results from activity There are, on the one side, the weary Willies of the world—persons born tired—for whom the ordinary static metabolism of life seems capable of originating feelings of tiredness And, on the other, the acidly active, for whom the most strenuous exercise fails to elicit any desire for rest In practice expenditure of energy to the point of exhaustion is safeguarded, and the utmost a wonder-remedy could do would be to lift the safety-valve and allow more energy to be expended than is physiologically advisable A remedy of this type was reported [1] by Emden in 1921, who announced that during the late war the onset of fatigue had been delayed by administering acid sodium phosphate to German soldiers, to miners, and to animals; support seemed thus forthcoming for those who feel an uplift from the consumption of phosphates A careful and well-planned scheme of research for following up the subject is, however, now reported [2] First, experiments with animals were tried, but abandoned, because no normals or base lines for activity could be obtained Then girls working card-perforating machines were placed under observation, they were being paid by piece-work, of which a record was carefully kept, and presented an ideal group for the study undertaken The phosphate, similarly prepared to that used by Emden and kept below a laxative dose, was taken by 30 girls, while others acted as controls The period observed was Feb 15th to May 31st, the phosphate being given March 13th to April 24th A feeling of well-being was experienced by the phosphate group, probably due to increased elimination of body-wastes, but no detectable increase of muscular efficiency occurred, while the average number of errors was not significantly different The conclusion drawn is that the phosphate created a subjective sensation of less tiredness due to its stimulating action on the intestinal tract, but in no way affected the onset of fatigue And so another wonder-remedy must be relegated to the scrap-heap

THE STUDY OF DYING

DEATH has been considered from many points of view, but it is doubtful if there has ever been any systematic investigation into the events of dying Numerous books describe the death-beds of celebrated men, whilst much of the literature of medicine is devoted to the processes of dissolution and the means of postponing them, yet from the scientific standpoint there is little information available about the final hours of life Writing with much experience of abnormal conditions of the mind, Dr Arthur MacDonald, in our correspondence columns, suggests the collection of such information on a large scale His proposal will be unsympathetic at first sight to those who feel that already there is often too much interference with the dying To many the "systematic study" of the death-bed has a satirical flavour reminiscent of Léon Daudet's "Les Morticoles"—it comes as an addition to the horrors imagined about death Yet the cogency of some of Dr MacDonald's arguments must be admitted It is by no means impossible that the study he suggests might lead to further and wider knowledge which would ease the final hours of those who retain their consciousness to the last Attendance on the dying is a difficult part of a doctor's duties, and one in which he has to rely greatly upon his sympathy and judgment, the young practitioner must inevitably find himself sometimes at a loss, but it ought to be possible to ensure that dying shall generally be easier than it is The subject is not discussed in text-books or lectures It is hard to say whether spreading abroad more accurate knowledge of death would lessen or increase the general fear of physical distress, but medical men—Sir Henry Halford Sir William Osler Prof Hermann Nothnagel and many others—who have written on the subject have usually said that so much dread is by no means justified Some of these opinions are summarised in Dr Parkes Weber's "Aspects of Death and correlated Aspects of Life," which is itself rather a study of the possible mental reactions towards the idea of death in the living than a study of death and its phenomena To those he mentions may be added a short essay by Prof G Perthes, of Tubingen, entitled "Ueber den Tod"

GOGGLES FOR ULTRA-VIOLET THERAPY

FOR short exposure to the ultra-violet rays of the arc or mercury-vapour lamp ordinary spectacle glass is as a rule, sufficient protection, but for operators who may be exposed to the effect of these rays for long periods something more is necessary Various sorts of protective goggles are on the market, but some of them are not to be recommended Thus Mr B D H Watters, of the Middlesex Hospital Physics Department found that a certain grey glass which was being sold for this purpose transmits a considerable portion of the ultra-violet spectrum, with the result that the operator complained of headache and eye-strain after quite a short exposure [1] Inasmuch as it may be necessary to protect the eyes against too strong exposure to the visible rays, a shaded or coloured glass will often be preferred Mr Watters found that a light green tint served the purpose The thickness of the glass, and especially of a concave glass, is a factor which should not be left out of account In order to exclude all the ultra-violet rays a spectroscopic examination of any localisation of the focus concerned ; it has been held likely that this is a variable factor dependent on local and climatic conditions. Dr Philip C Jeans and Dr Mark L Floyd[1] have been led by post-mortem examinations of unexplained cases to believe that the focus of infection in cholera infantum is most frequently to be found in the mastoid or paranasal sinuses They do not state, but appear to suggest, that the relation is a constant one, and they are prepared to treat all cases presenting choleraic features in infants by exploration of these sinuses The six cases which they describe furnish a chain of evidence which is certainly very convincing In all six cases pus was found in the antrum or sinus, and those in which drainage was established recovered, while those in which it was not established died Most of the cases occurred not in the summer months when bowel infections are prevalent, but in autumn or winter when the incidence of respiratory diseases is high From the otological standpoint they showed certain peculiar features , the mastoid infections were all bilateral, and none of them were evidenced by any of the usual diagnostic signs These observations, in conjunction with the fact that cholera infantum is not a common accompaniment of manifest mastoiditis, suggest that the clinical syndrome described may be produced by some more or less specific infection of the mastoid with characteristics of its own It is for this reason especially to be regretted that the authors' account contains no reference to the bacteriological characters of the infections Information on this point would be of great interest and might yield further indications for prophylaxis and treatment

---

[1] Emden, Schmitz, and Meincke Zeitschr fur Physiol Chem vol cxiii 1921, p 10, and Emden, Grafe, and Schmitz Ibid p 67

[2] The So called Action of Acid Sodium Phosphate in Delaying the Onset of Fatigue By F B Flinn U S Public Health Reports, No 29, July 16th, 1926 Washington

[1] THE LANCET, 1925, ii, 495

---

[1] Jour Amer Med Assoc , July 24th, 1926

THE WORLD INCIDENCE OF DISEASE

The Health Organisation of the League of Nations at Geneva has recently issued a large quarto book which gives a summary of the statistics of notifiable diseases in 1925 in 33 European, 34 African, 24 American and 23 Asiatic countries, and in Australasia The data are naturally of varying merit and accuracy , some represent the highest pitch of health statistics which has been reached as yet, some are probably unreliable, at any rate, in detail And if it did nothing else, a publication such as this may be confidently expected to stimulate a progressive improvement in the collection of data, to enlarge the area in which statistics are attempted, and to raise the standard of all the returns to approximate to the best One who turns the pages even casually can see the value of such an accumulation of facts to the serious students of the world's health, especially along two lines There are, on the one hand, the diseases which are liable to be carried from one part of the world to another An agreement has been in operation for many years by which any plague-infected port is notified to everybody, so that ships coming from there may be treated with due respect

The report deals at some length with the prevalence, rise or decline of plague all over the world, and is illustrated with instructive maps Every continent except Australia is more or less infected, from California to Celebes, and from the Black Sea to the Cape and Brazil Serious epidemics in 1925 were limited to Nigeria, Kenya, Uganda, Madagascar, India and Java, and the whole will make anyone wonder what is to be the progress and termination of the pandemic which started out of Southern China 32 years ago The figures for anthrax are useful in the same way Of the countries making returns, Italy and Russia stand out Italy has about ten times as many cases as Germany, and Russia about ten times as many as Italy Within the United Soviet Republics it is far more prevalent in the Caucasus, the Crimea and other parts of the south than in the north, and infection may be specially expected in material coming from the Black Sea ports The practical utility—indeed the practical necessity—of this kind of information needs no further illustration The statistics are equally useful in another direction It comforts us to know that the deaths from tuberculosis in London were 107 per 100,000 people, while they were 291, 280, and 204 in Budapest, Paris, and Vienna But we hope it will stimulate us to better things still to read that the rates were 87 in The Hague and New York, and 83 in Chicago

To know from example what is within the range of achievement is one of the most potent factors in human progress The tale of infant mortality, which is conveniently summarised for 15 great cities since 1881, is the most conspicuous lesson of this Forty years ago six had rates of over 200, and only one was less than 150 , by 1900 Buenos Aires had got down to 93, and eight others were below 150 , in 1925 only five were over 100, and the highest was 126 No one would have thought it possible till confident health officers began to show that it could be done At the end of the volume is an informative table showing what diseases are notifiable in each country, and those who are fond of odds and ends of curious information will find them abundantly throughout

ANTIDIPHTHERITIC MEASURES IN BELGIUM

The prevention of diphtheria is making headway in Belgium, where the small distances and dense population set a problem more easy of solution than in many countries The fact that isolation is enforced less strictly in the case of diphtheria than in other infectious diseases facilitates an estimate of the value of the measures applied, especially in the schools, which are not closed as a routine measure when cases of diphtheria occur in them. In Belgium it is not obligatory on practitioners to notify diphtheria, a fee of 5 francs is offered for so doing, but probably many cases elude official notice Diphtheria antitoxin is, however, available free for the use of doctors where there is any chance of the patient being unable otherwise to get it, and apparently advantage is widely taken of this privilege Dr A Bessemans Chief Inspector of Hygiene has recently reported[1] to the International Health Office on the means taken in Belgium to discover susceptible persons and to confer upon them an active immunity The experience of the Belgian Health Service now covers more than 5000 persons who have been subjected to the Schick test, and the figures, classified in age groups, bring out well the resistance inherent in the child at birth, its gradual loss within the first two or three years of life, to be replaced by a progressively increasing resistance acquired from exposure to infection In the age-group 0 to 6 months the percentage of positive reactors was only 36, rising to 76 in the age-group 2–3 years, and gradually falling to 25 in the age-group 17–19 years As elsewhere, a higher percentage of negative reactors was found in the poorer urban quarters, especially where overcrowded, a population in which a history of previous sore-throat is relatively common Dr Bessemans's observations on diphtheria carriers are particularly interesting They give no sign of a high degree of natural or acquired immunity, a fact which suggests to him that it is not the mere saprophytic presence of bacilli in the throat which confers immunity, but a definite attack of disease, however slight Dr Bessemans makes the surprising statement that 41 per cent of carriers of true (*vrais*) diphtheria bacilli, as against 44 per cent of the community as a whole, were found to be positive to the Schick test This statement seems to run counter to the whole Schick theory according to which a carrier of *virulent* bacilli cannot be Schick-positive except possibly for a short space of time The discrepancy has been cleared up by Dr R A O'Brien, who has ascertained by correspondence[2] with Dr Bessemans that the word *vrai* was not intended to imply *virulent*, for Dr Bessemans was not able to test for virulence more than a very small number of the cultures resembling the Klebs-Loffler bacillus obtained from carriers Of the carriers with negative reaction in many of them the negative reaction persisted for weeks or months leading to the fair inference that a natural immunity does not aid its possessor in getting rid of lurking bacilli Of 71 cases not recognised as carriers but whose brothers and sisters had been reported to be such, 38 per cent gave a positive reaction, as compared with 41 per cent for brothers and sisters of actual diphtheria cases , the difference, though small, suggests that the presence of a carrier in the family may have a more powerful immunising effect than the presence of a case of diphtheria Dr Bessemans himself regards the Schick test as in the highest degree trustworthy. for to his knowledge no single one of the 3067 Schick-negative cases contracted diphtheria while at least 11 Schick-positive cases contracted the disease, the diagnosis being confirmed by culture Since the test is simple and has no drawbacks, he recommends its application to the personnel of infectious hospitals and institutions of all kinds His report also contains a note on the value of toxin-antitoxin mixture in conferring immunity on Schick-positive cases, a positive reaction becoming negative within six months in 85 to 90 per cent of inoculated individuals He confirms Zingher s statement that no fear of anaphylactic symptoms need arise from repeated injections of vaccine. for it is always the first which provokes the greatest reaction.

---

[1] Office Internationale d'Hygiène Publique Bulletin Mensuel, February, 1926

[2] Public Health, September, 1926, p 367

TIREDNESS AND FATIGUE.

MANY persons, desirous of constantly draining the cup of life s activities to the lees are often seeking for some wonder-remedy which will prevent tiredness or at any rate, postpone it until a more convenient season They would disregard Nature's call for rest and turn a deaf ear to the existence of fatigue Tiredness and fatigue are not interchangeable terms, although the two things in most people march closely together Tiredness is a subjective feeling associated with a desire for rest Fatigue is a condition of diminished capacity for activity and results from activity There are on the one side. the weary Willies of the world—persons born tired—for whom the ordinary static metabolism of life seems capable of originating feelings of tiredness And on the other the acidly active, for whom the most strenuous exercise fails to elicit any desire for rest In practice expenditure of energy to the point of exhaustion is safeguarded and the utmost a wonder-remedy could do would be to lift the safety-valve and allow more energy to be expended than is physiologically advisable. A remedy of this type was reported [1] by Emden in 1921 who announced that during the late war the onset of fatigue had been delayed by administering acid sodium phosphate to German soldiers to miners, and to animals : support seemed thus forthcoming for those who feel an uplift from the consumption of phosphates A careful and well-planned scheme of research for following up the subject is however now reported.[2] First, experiments with animals were tried but abandoned, because no normals or base lines for activity could be obtained. Then girls working card-perforating machines were placed under observation : they were being paid by piece-work of which a record was carefully kept, and presented an ideal group for the study undertaken The phosphate. similarly prepared to that used by Emden and kept below a laxative dose, was taken by 30 girls while others acted as controls The period observed was Feb 15th to May 31st. the phosphate being given March 13th to April 24th A feeling of well-being was experienced by the phosphate group, probably due to increased elimination of body-wastes but no detectable increase of muscular efficiency occurred, while the average number of errors was not significantly different The conclusion drawn is that the phosphate created a subjective sensation of less tiredness due to its stimulating action on the intestinal tract, but in no way affected the onset of fatigue And so another wonder-remedy must be relegated to the scrap-heap

THE STUDY OF DYING

DEATH has been considered from many points of view but it is doubtful if there has ever been any systematic investigation into the events of dying Numerous books describe the death-beds of celebrated men whilst much of the literature of medicine is devoted to the processes of dissolution and the means of postponing them ; yet from the scientific standpoint there is little information available about the final hours of life Writing with much experience of abnormal conditions of the mind Dr Arthur MacDonald, in our correspondence columns, suggests the collection of such information on a large scale. His proposal will be unsympathetic at first sight to those who feel that already there is often too much interference with the dying To many the ' systematic study of the death-bed has a satirical flavour reminiscent of Léon Daudet s " Les Morticoles "—it comes as an addition to the horrors imagined about death Yet the cogency of some of Dr MacDonald s arguments must be admitted It is by no means impossible that the study he suggests might lead to further and wider knowledge which would ease the final hours of those who retain their consciousness to the last Attendance on the dying is a difficult part of a doctor s duties and one in which he has to rely greatly upon his sympathy and judgment ; the young practitioner must inevitably find himself sometimes at a loss. but it ought to be possible to ensure that dying shall generally be easier than it is The subject is not discussed in text-books or lectures It is hard to say whether spreading abroad more accurate knowledge of death would lessen or increase the general fear of physical distress. but medical men—Sir Henry Halford Sir William Osler. Prof. Hermann Nothnagel and many others—who have written on the subject have usually said that so much dread is by no means justified Some of these opinions are summarised in Dr Parkes Weber s ' Aspects of Death and correlated Aspects of Life ' which is itself rather a study of the possible mental reactions towards the idea of death in the living than a study of death and its phenomena To those he mentions may be added a short essay by Prof G. Perthes of Tubingen entitled ' Ueber den Tod '

GOGGLES FOR ULTRA-VIOLET THERAPY

FOR short exposure to the ultra-violet rays of the arc or mercury-vapour lamp ordinary spectacle glass is as a rule sufficient protection : but for operators who may be exposed to the effect of these rays for long periods something more is necessary Various sorts of protective goggles are on the market but some of them are not to be recommended Thus Mr B D. H Watters, of the Middlesex Hospital Physics Department. found that a certain grey glass which was being sold for this purpose transmits a considerable portion of the ultra-violet spectrum with the result that the operator complained of headache and eye-strain after quite a short exposure [1] Inasmuch as it may be necessary to protect the eyes against too strong exposure to the visible rays a shaded or coloured glass will often be preferred Mr Watters found that a light green tint served the purpose. The thickness of the glass. and especially of a concave glass is a factor which should not be left out of account. In order to exclude all the ultra-violet rays a spectroscopic examination of any

---

[1] Emden Schmitz and Meincke Zeitschr für Physiol. Chem vol. cxiii 1921, p 10, and Emden, Grafe, and Schmitz Ibid. p 67

[2] The So-called Action of Acid Sodium Phosphate in Delaying the Onset of Fatigue By F B Flinn. U S Public Health Reports, No 29, July 16th, 1926 Washington.

---

[1] THE LANCET, 1925, ii., 495

unknown glass is essential *According to a chart* published in a paper by Sir Arnold Lawson[2] Crookes's glass is constant in its absorption almost irrespective of the tint, Crookes A and Crookes B being practically *identical in their absorptive* power as far as the ultra-violet rays are concerned, but they only absorb rays of a shorter wave-length than about 360 $\mu\mu$. London smoked glass No 4 has a similar effect Fieuzal glass No 2 cuts off all the ultra-violet rays Amber does not For the *operator it* is desirable to secure the maximum amount of visible radiation with a minimum transmission of any rays with a wave-length shorter than 400 $\mu\mu$. For the patient the choice need not be so restricted, partly on account of the short time during which he is exposed to the action of the rays and partly because in his case there is no objection to cutting off some of the visible light The manufacturers of Arcos glass claim for it a total absorption of ultra-violet, as well as greatly reduced transmission of heat rays, and they supply an easily sterilisable form of goggles

MEDICINE AT KHARTOUM

THE School of Medicine at Khartoum, founded as a memorial to Lord Kitchener, is designed to meet the need for native doctors in a rapidly developing country Native doctors are needed to work under British doctors at the larger hospitals, to take sole charge of smaller hospitals, and to engage in field work against the endemic diseases—malaria, bilharziasis, ankylostomiasis, yaws, and syphilis—which are interfering with the increase of the population and diminishing its efficiency The school was opened in February, 1924, by the late Sir Lee Stack and work was commenced with a first-year class of ten students selected from young men who had completed their course of training at the Gordon College A further class of eight students was admitted in January, 1925 The report, which has just been issued, tells of the work completed by the end of that year. Photographs show the handsome buildings, the lay-out of the laboratories, dissecting room, lecture room, and library, and students at work in them The school stands in three and a half acres of land lying on the western side of the main avenue running north from the railway station to the Palace, which faces the Blue Nile, rebuilt on the foundations of Gordon's Palace. On the other side of the avenue is the Khartoum Civil Hospital Adjacent to the hospital and fronting the medical school new research laboratories are being erected, and provision is being made in these laboratories for the teaching of pathology A school hostel, under construction 200 metres away, will afford immediate accommodation for 40 students and admit of *extension* if called for later The house of the medical registrar responsible for the work and conduct of the students is situated in the school enclosure The curriculum covers a period of four years The first *year is* devoted to the preliminary *sciences*, the second to anatomy, physiology, and histology, the third to medicine, surgery, and pathology; and the fourth year continues the third-year subjects and includes also lectures and demonstrations in public health, midwifery and gynæcology, and a brief course in forensic medicine Clinical teaching is given in the well-equipped Civil Hospital, which has 100 beds and a large out-patient department The hospital at Omdurman, a town of 80,000 inhabitants separated from Khartoum by the White Nile, affords additional material for clinical demonstrations Importance is attached to the teaching of public health, for which the three towns with their combined population of 130,000 provide ample scope With the exception of the registrar, all the teachers belong to the Government medical and scientific staff · thus the medical and surgical teaching is given by the physician and the surgeon of the Khartoum and Omdurman hospitals, public health teaching by the medical officer of health of these towns, pathological teaching by the Wellcome Research Laboratories. As a consequence the school budget is maintained at a figure which would otherwise be quite impossible, the total expenditure for the year 1925 with the first and second-year classes under training was only £2447 When the third- and fourth-year classes come under training the expenditure will increase in proportion and additional sources of income will have to be found The progress made during these first two years points clearly to success in the future, and we hope that no question of financial stringency will be allowed to hinder a work so important to the material progress of the country and to the welfare of its people

UNIVERSITY OF EDINBURGH: THE D T.M & H. AND D P.H.

THE Students' Number of THE LANCET was published this year at a time when the regulations for the degrees of B Sc and D Sc in Public Health at the University of Edinburgh were under consideration, but the regulations for the diplomas in Tropical Medicine and Hygiene and in Public Health are in order, as are the regulations for the diploma in Psychiatry. Candidates for the D T M & H diploma *must be graduates in medicine and* surgery of the University or hold corresponding degrees or qualifications from other sources, and the full course of instruction is given during the autumn term, *beginning therefore in October* The diploma of the University in Public Health is granted to candidates of a similar standing, and the course is divided into two parts, for which examinations are held twice annually, in March and July for Part I, and in October and December for Part II. The course, which extends over 12 calendar months, begins in October, and provision is made by the University for instruction in all the subjects, while candidates must study for at least two of the three terms in the University Detailed particulars regarding these diplomas, which are contained in full in the University Calendar, may be obtained from the Dean of the Faculty of Medicine at the University This notice was accidentally omitted from the Students' Number of THE LANCET

THE COOMBE HOSPITAL.

IN anticipation of the Coombe Hospital centenary celebrations, which have been held in Dublin this week, Dr T P. C Kirkpatrick has contributed to the September number of the *Irish Journal of Medical Science* a sketch of the history of the *hospital* In 1821 the Meath Hospital moved from the house it had occupied in the Coombe for just half a century to its present site in Long-lane The vacant house was taken by Dr Kirby, head of one of the private medical schools, who established 50 beds in it and used it for the clinical instruction of his students Some years later the question arose of providing accommodation for maternity cases on the south side of the *city*, as patients suffered hardship in making the journey to the Rotunda Hospital, which was then the only maternity institution in Dublin In 1826 *it* was arranged to take one ward *in* Kirby's Hospital for maternity work, and thus the Coombe Hospital began its special work. In 1829 the surgical part of the hospital was closed and the institution became the Coombe Lying-in Hospital, with Dr Richard Reed Gregory as its first master From the first the hospital paid much attention to teaching, and issued certificates to the pupils who attended its *practice* These certificates were accepted by the Royal Colleges of Surgeons in Ireland, of England, and of Edinburgh, as well as by the medical boards of the Navy, *Army*, and Indian Medical Services When, some years later the Rotunda Hospital began to issue diplomas in midwifery which purported to be qualifications to practise, the Coombe followed suit, and acute controversy arose between the two institutions, the Rotunda holding that as the

---

[2] British Journal of Ophthalmology, 1925

Coombe had no charter it had no right to issue diplomas It was not till 30 years later, in 1867, that the hospital succeeded in obtaining a Royal Charter. In the meantime both diplomas had lost much of their value by the passing of the Medical Act of 1858 While the teaching work of the Coombe Hospital was increasing in reputation the buildings were falling into decay, but fortunately good friends were found in successive members of the Guinness family, and between 1868 and 1877 it was rebuilt at their expense. Various improvements have since been made and in the hands of recent masters the hospital has done much to enhance the reputation of Dublin as a teaching centre for obstetrics

The Services.

ROYAL NAVAL MEDICAL SERVICE

Surg Capt. W L. Martin to be Surg Rear-Admiral

The following appointments are notified —Surg Rear-Admirals: W. L. Martin to *Egmont* and for R N. Hospl Malta (on joining); and R St. G S Bond to *Vivid* for R.N Hospl. Plymouth. Surg Capts.: A R Thomas to *Vivid* for R.N Hospl. Plymouth, and R. W. B Hall to *President* for service in Medical Dept Admiralty and as Deputy Medical Director-General Surg Comdrs. A R. Fisher to *President* for three months post-graduate course, E. L. Atkinson to *Pembroke* for R N Barracks. Chatham, temp: F G. H R. Black to *Vivid* for R.N Barracks Devonport and for specialist duties. J D Bangay to *Victory* for R.N Barracks Portsmouth L. MacEwan to *Dolphin* as Senior Medical Officer Submarines: C T Baxter to *President* for Royal Victoria Yard Deptford for survey of stores. J M Hayes to *Egmont*; A J Tozer to *Ramillies*; J T Skelton to *Princess Margaret* and as ophthalmic specialist, temp.; R. F MacMahon to *Pembroke* for R M Infirmary, Chatham, and F. Cock to *Egmont* for R N Hospl Malta as ophthalmic specialist (on relief) Surg Lt.-Comdrs: W J Colbourne, N A. H. Barlow, J. E. Clark, W. A. Jolliffe, N B de M Greenstreet, A W Cocking and J. S Elliot to *President* for five months course of instruction; R. W. Nesbitt to *Victory* for R.M Infirmary, Eastney; E Heffernan to *President* for Royal Victoria Yard, Deptford for survey of stores: and T Gwynne-Jones to *Sandhurst*. Surg Lt-Comdrs (D): J. T. Wood to *Excellent*; J F. Pace to *Ganges*; and T. A. B Corless to *Pembroke* for R.N Hospl, Chatham. Surg Comdr (D): H. M Meek to *Pembroke* for R N Barracks Chatham. Surg Lts.: J Hamilton to *Pembroke* for R.N Hospl Chatham temp Surg. and M. Barton (short service) transferred to the permanent list.

ROYAL ARMY MEDICAL CORPS

The undermentioned Capts. to be Majs.: J. Higgins, E B Marsh C Armstrong (Prov) J. A. L. Wilson (Prov), J H. Fletcher and D G Evans (Prov)

Capt E N P. Martland retires receiving a gratuity

The undermentioned to be Lts. (on prob) F M. Collins and J A. Chapel

The undermentioned to be temp Lts.: R A. M Humphrey and W. A. Kerr.

ARMY DENTAL CORPS.

The undermentioned temp Capts. Dental Surgs. Gen List, to be Capts: J L. Gibson, F. W. Burke, S H. Bannerman, J W Vasey, A. H Kay D A. McGeorge, Allen Rhodes, N F Smith, J. L. Newton and D J. Muil

The undermentioned temp Lts Dental Surgs. Gen. List to be Lts.: B Abbott, G A. Ballantyne, F. H R. Davey F F. Anslow, W. B Purnell F. S S Whiter R. A Roth, D C Blyth C E Day F G Arnold, R. H N Osmond, W McAndrew, and B J Swyer

ROYAL AIR FORCE

Flying Officer F. L. White is granted a permanent commission in this rank.

The undermentioned are granted short service commissions as Flying Officers for three years on the active list E A. Rice and C W Coffey

Squadron Leader C L. Colbran is promoted to the rank of Wing Commander (Dental) on promotion to Lt.-Col in the Army Dental Corps.

INDIAN MEDICAL SERVICE

The King has approved the relinquishment of his temporary commission by Lt Behari Lal Chopra.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions

CLXXXIX.—THE MEDICAL TREATMENT OF CHRONIC DIARRHŒA.

II.—MANAGEMENT OF THE CASE.*

Gastrogenous Diarrhœa.

ANY likely cause of a true chronic gastritis (e.g. alcoholic excess gross oral sepsis excessive tea drinking) should be appropriately dealt with. Soups and condiments and hurrying over meals should be forbidden Acid hydrochlor. dil. (B.P.) ♏ xx. to xxx. in a tumbler of orangeade or sugar and water, taken as a beverage during each of the three main meals, causes a prompt and complete cessation of the symptom in the majority of cases Even smaller doses may be effective. Ultimately it may be possible to dispense with the acid or to rely on one or two doses in the course of the day. Where the acid is given for its antiseptic action as well as to control the diarrhœa (as in cases of pernicious anæmia) much larger doses up to a drachm or more, t.i.d., should be employed

Chronic Ulcerative Colitis and Chronic Bacillary Dysentery

The treatment of these conditions may be considered under the headings of specific (or serum) therapy and non-specific therapy The patient should be kept in bed throughout the period of intensive treatment and until the stools are formed. Specific measures should only be employed in cases which have been fully investigated, and steps should be taken to discover whether the patient has been sensitised by previous administration of serum. In cases in which cultural investigation of the stools or serological tests confirm a suspicion of infection with *B Flexner* or Shiga polyvalent anti-dysentery serum should be given in full doses, and as Hurst[1] has shown, good results may also follow the same treatment in a certain proportion of cases of "non-specific" ulcerative colitis The serum should be given by the intravenous route starting with a dose of 30 or 40 c cm. and, unless reactions are severe, followed by injections given daily or every other day, and increasing up to 60 or 80 c cm. until 200 to 250 c cm. have been given in all. The only drawback to serum therapy is its expense, but this is outweighed by other considerations. In successful cases there will already be an improvement in the patient's general condition at the end of a week or 14 days with a reduction in the number of stools Within a fortnight or three weeks sigmoidoscopy may show commencing healing in the mucosal lesions of the lower bowel The diet at first should be lacto-farinaceous with fruit juice, jellies &c. It should be of ample caloric value, and include liberal fluids No food containing vegetable residue or other indigestible fibre should be allowed. Careful attention should be paid to oral hygiene. Powdered charcoal (½ oz.) with arrowroot twice a day helps to diminish intestinal flatulence and pain. The colon should be irrigated once a day in the early stages with quantities increasing gradually from ½ to 1½ pints of a tannic acid solution (½ to 2 gr. to the oz) or with weak silver solutions or normal saline, the fluid being introduced with the patient in the knee-elbow position or on the back with the hips well raised and after the bowels have been moved A soft rubber tube and funnel should be employed the tube being introduced not further than 3 to 4 inches and the fluid run in very slowly with only slight pressure (not more than 1 foot) The patient should be encouraged to retain the injection a little longer each day up to half an hour Iron should be given for the anæmia A mixture originally suggested by Wedgwood[2] for use in typhoid fever and containing tr ferri perchlor ♏ x–xx with liquor hydrarg perchlor ʒss three times a day has found several advocates. When the stools have become formed, as they may do somewhat abruptly in successful cases, liquid paraffin should at once be given to obviate constipation and consequent mechanical damage to the newly healed mucosa Symptomatic improvement under treatment should be controlled by sigmoidoscopic examinations

---

* An article in this series by Dr. Pyle on Chronic Diarrhœa Investigation of the Case, appeared in THE LANCET last week.

[1] A. F Hurst. Guy's Hospital Reports, 1921, lxxi., 26.

Chronic Amœbic Dysentery

The effect of a course of 12 subcutaneous or intramuscular injections of emetine hydrochloride (gr 1 daily) on symptoms and sigmoidoscopic appearances should be tried, particularly if the diagnosis has not previously been made In cases which have previously had much treatment with emetine the results are less satisfactory Emetine bismuth iodide (gr. iii in salol-coated tabloids) given daily for 12 days and, more recently, stovarsol gr iv daily for 12 or 14 days have proved of value in resistant cases Manson-Bahr[3] has also reported favourably on yatren both by mouth and irrigation For more detailed descriptions of the treatment of chronic amœbic dysentery reference should be made to works on tropical diseases Repeated courses of treatment are often necessary

Spurious Rectal and Colonic Diarrhœa.

The treatment of the spurious rectal and colonic diarrhœas is the treatment of constipation It should include strict regularity, ample fluids, a diet liberal in fresh and stewed fruit and green vegetables, avoidance of purgatives, employment of lubricant preparations such as liquid paraffin, and in cases with colonic spasm small doses of belladonna Enemata in gradually diminishing quantity may be required in the earlier stages to re-educate the lower bowel, and in old persons it may occasionally be necessary to break up a fæcal accumulation in the rectum The "diarrhœa" usually described as occurring "in attacks" and so bitterly complained of by sufferers from so-called muco-membranous colitis is usually made worse by (1) bismuth, chalk, and opium, (2) purgatives, and (3) douche treatment Visits to spas for douche treatment should be discouraged The diet should be as for a case of constipation, only seedy fruits and very fibrous vegetables being excluded Lubricant preparations and belladonna and bromides may be employed Four to six ounces of liquid paraffin injected into the bowel at bedtime and retained over night, a pad being worn, often gives relief in the more troublesome cases Vigorous psychotherapy, instructions to the patient not to inspect her stools, emphatic assurance that the frequent actions are due to irritation of the bowel by scybala rather than to inflammation by disease, that the mucous discharge is nature's response to such irritation, and, finally, that there is no true colitis present may contribute to a successful handling of these difficult cases

Tabes Mesenterica and Cœliac Disease

The usual hygienic measures, including proper rest. open air and sunshine, and controlled by temperature and weight records, must be employed for adequate periods in cases of tabes mesenterica with diarrhœa In the milder cases a reasonable restriction of the fat intake is the only other treatment required In the more serious cases with bulky stools, butter cream, and the visible fat of meat should be excluded altogether, and the milk should be skimmed Unless there is an associated ulceration of the small bowel these measures alone may bring about a prompt cessation of the diarrhœa, although the stools will remain bulky In children especially it is important to provide fresh food elements in other forms such as fruit juice Gull[4] was the first to point out how irrational it was to give fatty foods and cod-liver oil in cases in which large quantities of fat were being voided in the stools

The treatment of *cœliac disease* is carried out on closely similar lines, and is described in detail by R Miller in THE LANCET, 1923 ii, 1099

Sprue

Among the many treatments which have been employed in sprue the milk treatment is probably least liable to failure Milk is given in large quantities advancing up to six or even eight pints in the day, and at first no other form of food is employed When the stools have become formed and the weight is gaining, easily assimilable carbohydrates are added and later protein foods Much has been made in recent times of the calcium and parathyroid treatment suggested by Scott[5] This treatment has found many advocates, but among physicians with wide tropical experience opinions remain divided For a fuller discussion of the treatment of sprue reference should be made to text-books on tropical diseases

Pancreatic Diarrhœa

The most important indication is to cut out fat from the dietary as completely as possible, as the fat indigestion is probably the main cause of the diarrhœa If there is no glycosuria liberal carbohydrate feeding may be instituted Ripe bananas are a valuable addition to the dietary, and glucose, cane-sugar or lactose given in large quantities in lemonade and other fluids may help to maintain the weight. Of the protein foods those requiring the least trituration and digestion should be favoured It is difficult to obtain reliable evidence as to the influence of the enzyme substances, but one of the preparations of pancreatin should be given with each of the three main meals

Other Forms

For *nervous diarrhœa* a codeine pill ¼ or ⅓ gr taken occasionally before those events which have been found to precipitate the symptom may act effectively by controlling peristalsis and so help to restore confidence Common-sense hygiene, proper mastication, instructions with regard to obtaining a complete evacuation each morning, and simple explanations concerning the mode of perpetuation of such symptoms by apprehension are also helpful During times of mental stress a bromide mixture should be given

In *diarrhœa due to excessive consumption of carbohydrate* it is only necessary to remodel the dietary and to insist on more exercise

Diarrhœa following Gastro-jejunostomy—In the more innocent form due to a too-patent stoma, dry meals, a short rest in the recumbent position after meals, and (if achlorhydria and no ulceration be present) small doses of acid and pepsin are generally effective.

Conclusion

Of the varieties of chronic diarrhœa discussed above gastrogenous diarrhœa is the most common and incidentally the most tractable Diarrhœa due to rectal or colonic carcinoma is also common, but too frequently attributed in the early stages to simple ulcerative colitis The fatty diarrhœas and diarrhœa following gastro-jejunostomy are rare An attempt has been made to review the various types in the order of frequency in which they are encountered in hospital and consulting practice in this country

JOHN A. RYLE, M D, F R C P Lond,
Assistant Physician to Guy's Hospital

---

[2] W B Wedgwood Brit Med Jour, 1894, i, 1126

[3] P H Manson-Bahr and R H Morris THE LANCET, 1925, ii, 544

[4] W Gull Guy's Hospital Reports 1855, i, 369

[5] H H Scott THE LANCET, 1925 i, 620

Special Articles.

A STUDY OF SCARLET FEVER

EPIDEMIOLOGY AND PROPHYLAXIS

EVER-INCREASING attention is being given to the epidemiology of zymotic diseases A report prepared by Sir George Buchanan and Dr Allan C Parsons, which has just appeared embodies the results of an inquiry carried out under the auspices of the Comite de l Office Internationale d Hygiene Publique into the comparative prevalence of scarlet fever, its characteristics, and the measures adopted for its prevention in various parts of the world This report is essentially a summary of replies to a questionnaire sent out to some 30 countries, and appears in the *Bulletin* of the Office Internationale for June and July Information was desired on four specific points (1) the methods by which an estimation of the incidence of scarlet fever was arrived at including notification, hospital statistics, and death certificates, (2) the special characteristics of the epidemics—prevalence, seasonal incidence periodicity, morbidity and mortality rates, virulence, and any factors looked upon as of importance in the spread of infection, such as delayed notification or diagnosis, carriers, schools, and the like, (3) general methods of prophylaxis and of treatment; and (4) methods of terminal disinfection

Notification

The sources of information in the various countries are fairly comparable Notification of scarlet fever is compulsory in most of the places in which it is endemic, in several countries the local health authority is notified by the physicians, by the hospitals and by the education authorities, and the only countries in which a fee appears to be paid to the notifying physician are England and Wales, Belgium and Algeria Deaths are registered in nearly all the countries in which the disease is notifiable The prevalence of scarlet fever is not easy to ascertain, but it appears that the countries situated in the north-west and south-east of Europe are chiefly affected The seasonal incidence is fairly constant, definite periodicity has usually been noted, although this varies a good deal in different countries and in different parts of the same country The incidence rate per 100,000 of the population ranges from 224 in Northern Ireland and 218 in England and Wales down to 12 in South Africa, 9 in Greece, and 7 in Czecho-Slovakia It is probable, however, that fewer cases escape notification in Great Britain than in most of the other countries on the list, and in any case the value of these figures as also of the mortality rate depends largely upon the completeness of census and death certification With regard to the virulence of the disease, it would appear that in England, Norway, Sweden and Holland the type has become progressively milder of recent years, although due allowance has to be made for the fact that larger numbers of notified cases are now admitted to the hospitals In other countries, especially in South-Eastern Europe, the disease appears to be more virulent in type than in former years.

Infection and Susceptibility

Most of those who replied to the questionnaire were clearly of the opinion that the spread of scarlet fever is almost entirely a personal question—i e, that each fresh case is directly infected by some other person who may be either obviously suffering from scarlet fever, or convalescent from an attack, or else suffering from a mild, abortive, or unrecognised infection The existence of perfectly healthy 'carriers" is frankly doubted by most of those who replied on this point Nasal, pharyngeal, or aural discharges are looked upon in many countries as the agents chiefly responsible for the spread of infection Much work has been done, chiefly in America, on the results of the Dick test for ascertaining the susceptibility of a given subject to scarlet fever A number of tables and charts prepared by Dr Abraham Zingher and by the Dicks themselves are reproduced in this report, showing the high percentage (90 7) of negative reactions in the case of those who have already had an attack of scarlet fever, and the comparatively high percentage (75 4) of positive reactions in those who have never been infected In another series of cases the test was applied to patients during an attack of the disease, the percentage of positive reactions being 98 during the first five days of the illness, 20 after the sixth day, and 8 7 during convalescence The use of scarlet fever antitoxin as a preventive measure is warmly advocated by the Dicks, who have shown the direct correlation that exists between the quantity of toxin administered and the immunity obtained They claim that their toxin can be safely administered in doses large enough to confer complete immunity, such immunity being attained in the course of two weeks and lasting for at least 18 months As a curative measure the use of serum from convalescents is being tried with success in various countries, including Stockholm, Poland, and Czecho-Slovakia Isolation hospital treatment is the rule in several of the countries, although not in all opinions also differing as to the respective merits of barrier, cubicle, or ward nursing

Quarantine.

An interesting point is the varying procedure as to isolation In the United States an average of four to six weeks is usually required, in Stockholm six weeks, in Holland, five, in Italy and in Australia, four weeks The same divergence exists with regard to desquamation In Norway no notice is taken of desquamation of the feet, nor, in Sweden, of any desquamation after the sixth week In many parts of Holland the state of the skin is not considered as any criterion of infection, certain authorities not regarding the skin as infectious at any period of the disease unless it has been contaminated by discharges. In Italy, Manchuria, and Bulgaria, on the other hand, the patient is usually considered infectious until desquamation is complete A large variety of methods of disinfection are in use in the various countries These are usually applied in the terminal stage, but it is of particular interest to note that in many countries in which sanitary science is making rapid headway there is a distinct tendency to give up the traditional terminal disinfection of sick rooms in favour of bedside or current disinfection of the patient This is the case in Norway, Sweden, Bulgaria, Denmark, Holland, Canada, and a few of the United States of America although in most of these countries terminal disinfection has not yet been entirely abolished As Dr Parsons points out, the newer method is practically an extension of the bed or "barrier" system of isolation, both being based on the theory that only the patient and the articles recently contaminated by him are infectious

Epidemiology

Another recent study on the epidemiology of scarlet fever is that by Dr Alton S Pope[1] The data for this paper were collected by Dr C V Chapin, who for 40 years has kept individual histories of all cases of scarlet fever reported in the American city of Providence In all, the number of cases investigated has been 17,625, the writer explaining that "By the intensive study of the disease over a long period in one locality, and the correlation of the findings with extensive researches, the attempt has been made to add something to the natural history of scarlet fever" The points made by Dr Pope include the following First as to age distribution Approximately 75 per cent of all cases occur under 10 and 90 per cent under 15 years the greatest incidence being at six years The highest mortality *in scarlet* fever occurs in the third year of life Although there has been no appreciable change in the recorded morbidity of scarlet fever in Providence during the past 40 years, there has been a relative shifting of mortality from the lower to the higher age-groups, the mortality rates themselves also having fallen during this period from approximately 40 to 2 per 100,000 On the evidence available, the decrease in mortality appears to be due to a decrease in the malignancy of the disease rather than to any special measures adopted for its control Attack rates in Providence show a slight excess among males up to the sixth year of life, and at all ages above 7 a marked excess among females The month of greatest incidence for scarlet fever is usually January, the minimum incidence in July or August in all but three years out of 40 No evidence of periodicity in the incidence could be found in the Providence figures.

---

[1] Amer Jour of Hygiene, 1926, vi, 389

Among 22,000 cases of scarlet fever, 271 were recorded as second attacks Dr Pope believes this to be an under-estimate of the percentage of recurrence of scarlet fever in the individual, although the fact that only one-seventh as many cases were recorded among those who previously had the disease as among the general population shows that one attack does confer a relative immunity A marked preponderance of females in the higher age-groups among recurrences is evidence that infection with scarlet fever depends to a great extent upon intimacy of contact

A recent U S Public Health Report (Vol XLI, No. 24), gives the results of Dick tests made on different groups of school-children in Fairfax county and in Washington The groups of rural and suburban school-children were found to give a higher percentage of positive reactions than did the children in city institutions. A similar result was found in the case of children who had already suffered from scarlet fever, the difference being explained either by a difference in degree and frequency of exposure in city and rural children, or by the suggestion that different strains of scarlet fever streptococci may produce different toxins A relatively greater immunity was found to exist in males than in females, this difference being found to increase with age When two or more children from one family were tested there was a tendency for the reactions on the different children to agree. When disagreement occurred, the younger children were more often positive and the older children more often negative

GENERAL PRACTITIONER SERVICE.

ITS RANGE UNDER THE INSURANCE ACTS

THE insurance medical service is at the present time, as Sir George Newman writes in his Report,[1] a service of general medical practitioners Each practitioner, by his agreement with the insurance committee, has contracted to give to his insured patients "all proper and necessary medical services other than those involving the application of special skill and experience of a degree or kind which general practitioners as a class cannot reasonably be expected to possess," and it is provided in the terms of service for practitioners that in "determining whether a particular service is a service involving the application of such special skill and experience as aforesaid, regard is to be had to the question whether services of the kind are or are not usually undertaken by general practitioners practising in the area in which the question arose"

The medical benefit regulations lay down a procedure for determining whether a given service falls within the content of medical benefit If a practitioner thinks that a service which he has either already performed, or is about to perform is outside the scope of his obligations, he is required to supply the insurance committee with particulars of the service on a form furnished by the committee The form is then sent to the local medical committee, who are asked to state whether in their opinion the service as described by the practitioner is one that involved "the application of special skill and experience of a degree or kind which general practitioners as a class cannot reasonably be expected to possess" In the regulations operative prior to 1924 the question was formulated as to whether the service was one which "could consistently with the best interests of the patient be properly undertaken by a general practitioner of ordinary professional competence and skill" The opinion of the local medical committee is considered by the insurance committee, and if the two committees fail to agree the matter must be referred by the Ministry of Health to referees, whose decision is final If the two committees agree the Ministry may, in the exercise of its discretion, refer the matter to referees. The regulations require that the referees, who are nominated by the Ministry, shall be two medical practitioners and one barrister-at-law or solicitor in actual practice, and they have power to determine their own procedure

Many cases have arisen for decision and lists of the rulings given since 1920 were set out in Vol III of the Reports of Inquiries and Appeals under the N H I Medical Benefit Regulations,[2] and may be summarised here

Some Cases not Referred to Referees

In the following instances the local medical and insurance committees held that in the particular circumstances the operation or other service *was* of a kind which could properly be undertaken by a general practitioner of ordinary professional competence and skill

(1) Treatment of fracture of both bones of leg and dislocation of ankle
(2) Treatment of gonorrhœa by irrigation and medicine.
(3) Opening and scraping abscess of thigh
(4) Curetting of uterus
(5) Suppurative mastitis opening and breaking down all pockets and inserting rubber drainage-tubes
(6) Opening and draining an ischio-rectal abscess
(7) Advanced cirrhosis of liver with very severe ascites and general dropsy, local anæsthetic injected Incision made, cannula and trocar inserted, drainage-tube fitted to cannula
(8) Operation for fissure in ano
(9) Removal of facial sebaceous cyst
(10) Deep abscess of neck due to liquefaction of glands; incision made, sinus forceps inserted and creamy material evacuated Syringed out with iodine
(11) Dislocation of left elbow, reduction under chloroform.
(12) Ophthalmoscopic examination for occipital headache.
(13) Removal of epithelioma of lower lip

In another group of cases the committees agreed that in the particular circumstances the operation or other service *was not* of a kind which could properly be undertaken by a general practitioner of ordinary professional competence and skill

(1) Removal by dissection of Bartholin's gland
(2) Passage of Eustachian catheter
(3) Operation for hæmorrhoids
(4) Examination of eyes by retinoscopy
(5) Colpo-perineorrhaphy and stitching the cervix.
(6) Gastro-jejunostomy
(7) Removal of varicose veins
(8) Intravenous administration of novarsenobillon
(9) Enucleation of eyeball
(10) Radical cure of left inguinal hernia
(11) Operation for suppurating fibroid with local pelvic peritonitis
(12) Removal of tuberculous glands in neck
(13) Extreme genu valgum in both legs—osteotomy of femora
(14) Excision of multiple fistulæ in ano (horseshoe variety)
(15) Removal of internal semilunar cartilage of left knee
(16) X ray treatment for recurrent carcinoma of axillary glands
(17) Application of radiant heat and ionisation
(18) Complete tonsillectomy—curetting nasopharynx
(19) Removal of large sebaceous cyst from right side of neck.

---

[1] On the State of the Public Health Annual Report of the Chief Medical Officer of the Ministry of Health for 1925 H M Stationery Office 3s

[2] H M Stationery Office 1924 3s

(20) Dissecting out cyst over mastoid.
(21) Removal of epithelioma of axilla.
(22) Cauterisation of nose and tonsillectomy.
(23) Excision of hypertrophied turbinate bones in nose and excision of tonsils and adenoids.
(24) Excising and suturing bladder sinus.
(25) *Peritomy.*
(26) Resection of intestine. (Paul's operation.)
(27) Amputation of toes.
(28) Removal of appendix.
(29) Removal of nasal polypi.
(30) Operation for chronic gastric ulcer—carcinomatous.
(31) General anæsthetic for tonsillectomy and gastric enterostomy.

Some Cases Referred to Referees

Other cases were referred to referees, and the decision on those in Group I was that in the particular circumstances the service was one which could consistently with the best interests of the patient properly be undertaken by a general practitioner of ordinary professional competence and skill, while in the cases included in Group II the decision was to the contrary effect.

Group I.

(1) Removal of fibroma adenoma of breast.
(2) Removal of needle from foot.
(3) Operation for cellulitis.
(4) Removal of papillomatous tumour from back.
(5) Removal of cyst from neighbourhood of knee-joint.
(6) Taking blood (venous) as a preliminary to the Wassermann test for syphilis.

Group II.

(1) Removal of thrombosed and varicose veins in leg.
(2) Operation for atresia oris uteri interni with retroflexion.
(3) Amputation of arm below elbow.
(4) Removal of epulis from between teeth.
(5) Removal of polypus from rectum.
(6) Operation for hæmorrhoids.

Special Skill and Experience

When an insurance practitioner has actually performed an operation or other service which he contends is outside his insurance obligation on the ground that it involved the application of special skill and experience of a degree or kind which general practitioners as a class cannot reasonably be expected to possess, the onus is thrown upon him to establish that he himself does possess such special skill and experience. By his contention he implicitly states that his professional colleagues in the area as a class do not possess the special skill and experience which he claims that he does possess, and before his claim can be admitted the regulations provide that he must prove:—

(*a*) that he has held hospital or other appointments affording special opportunities for acquiring special skill and experience of the kind required for the performance of the service rendered, and has had actual recent practice in performing the service rendered or services of a similar character, or

(*b*) that he has had special academic or post-graduate study of a subject which comprises the service rendered, and has had actual recent practice as aforesaid, or

(*c*) that he is generally recognised by other practitioners in the area as having special proficiency and experience in a subject which comprises the service rendered.

The question of determining the range of the insurance practitioner's obligations is one of great importance. If the performance of a certain operation is held to be not one of those services which the practitioner has in virtue of his agreement with the insurance committee contracted to render when necessary to his insured patients, he is entitled to charge the patient a fee for the service. The question, therefore, is one that affects the statutory rights of the insured population, and it was obviously necessary that a procedure should be devised for dealing fairly, effectively, and expeditiously with cases in which it is doubted whether a given service is or is not within the scope of a practitioner's insurance obligation. The procedure described in the preceding paragraphs has been in operation for the past 13 years, and Sir George Newman considers that it has stood the test of time. "I think it is true to say," he adds, "that insurance practitioners as a body are not disposed to take a narrow view of the range of their obligations, and it is known that there are practitioners who habitually and without charge render to their insured patients services which, if the question were raised, would probably be held to be outside the scope of medical benefit."

SMOKE ABATEMENT AND HEALTH: CONFERENCE AND EXHIBITION

BIRMINGHAM, SEPT. 6TH–18TH.

BOTH the householder and the manufacturer who visit the Smoke Abatement Exhibition which is drawing to a close, at the Bingley Hall, Birmingham, can find there a very practical display of all the principal established methods of efficiently abating smoke. There is little that is new except in detail, save for a development in the design of a domestic grate constructed for burning gas coke. At the Conference of the Smoke Abatement League of Great Britain held in connexion with the exhibition last week it was generally accepted that whatever the future may hold in store, the only existing solid smokeless fuel suitable for domestic use and available in considerable quantities is the coke produced from gas-works. Nevertheless gas coke has admitted drawbacks; as Dr. Margaret Fishenden, of the Fuel Research Board, remarked in a paper on the Outlook for Smokeless Domestic Heating, difficulty of ignition and relatively low combustibility have tended to make coke unpopular with the housewife. These disadvantages are due partly to the low volatile content of gas coke and partly to its inherent physical characteristics; "but they are frequently accentuated," she added, "by the presence of large amounts of moisture and ash and by the practice of selling coke ungraded—i.e., not separated according to size." The future use of coke for open fires depends therefore partly upon improved production and grading, improvements to which gas undertakings have of late given much more attention. But the type of grate in which it is consumed can also assist by making ignition and combustion easier and by reducing the amount of ash liable to be sent into the room. It is in these respects that the new "Glow-Worm" open coke fire designed by Dr. J. S. Owens is important and worth describing fully.

A Practical Open Coke Fire Grate

In ordinary open fires the combustion of the fuel is from bottom to top. Ash is formed and needs to drop downwards into the ash-pan, but the air for combustion rising up through the fuel tends to keep the ash in the fire, and when the fire is poked throws the fine ash out into the room. With the "Glow-Worm" fire combustion is from back to front through a wedge-shaped fire-basket. Ash in falling is carried through into the ash-pan, and however vigorously the fire may be poked, no ash or dust comes out into the room. To promote the fullest possible amount of radiant heat the ash-pan is pushed backward, when the whole of the fire exposed to view will become a glowing incandescent mass. The addition of new fuel does not obscure the pleasing appearance of this incandescent fuel or in any way interfere with the amount of radiant heat sent out into the room. By pulling the ash-pan forward a certain amount of air instead of passing through the fire will go under the fire and up the flue, in addition to which air constantly passes under the canopy of the fire and thereby ventilates the room. As the flue at the back of the stove terminates at a point higher than the mouth of the canopy, a true injector effect takes place. The fire itself has been constructed with a tapered back so that it will partly fit into the average existing coal grate. In this way the projection into the hearth is reduced to the minimum and a pleasing appearance is obtained. The consumption of coke is from 1 to 1½ lb. per hour, and the cost, therefore, of using this fire is considerably less than the average coal fire with its attendant dust and trouble There is no need at any time to lift out the remainder of the previous day's fuel Fresh fuel can be added on top of the cinders at the bottom of the grate, and ignition is rendered simple and quick by the provision of a gas-lighter

Ventilation and Heating

The papers and discussions at the Conference, like the stands at the exhibition, mainly retold what was already known—not indeed to the bulk of fuel-users, but to the scientists and experts Sir John Robertson and Dr Leonard Hill dealt effectively with the value of sunlight and with ventilation and heating, and both argued strongly that there is no justification for the continued use of raw coal on its present enormous scale In Dr Hill's words it is bad policy to "put off the demand for abolition of smoke pollution on the plea of waiting for the economic production of a smokeless fuel better than coke and gas The modern gas fire has been perfected so as to give a maximum of radiant energy including visible red rays which penetrate the skin and the tissues to some depth" It was also, he said, a fairly efficient ventilator, especially where a second opening into the flue was provided, as in the best designs, so as to raise the total ventilation of a small shut-up room to some 3000 cubic feet an hour But the radiant energy of a gas fire, he added, is so great that a window can and should always be kept open He laid considerable stress on the error both of overheating, a common mistake in using gas fires, and of monotonous heating, there was a definite advantage in the variations in the heat emitted by coal fires, and though this could be easily obtained with gas, people tended to make too little use of the control which the gas taps afforded

Dr J S Owens underlined the emphasis laid on ventilation In estimating the "efficiency" of heating appliances, the function of the appliance must be clearly understood, you cannot, he said, relate input to output unless you know what sort of output you want It so happens that ventilation is a function generally left to heating appliances, and it is misleading to talk of an appliance being highly efficient when it fulfils the heating function only There was also good sense in Dr Owens's point that it is not necessarily sound to be always seeking to render new fuels suitable for use in appliances designed for some other fuel, it may be better policy to adapt appliances to fuels than fuels to appliances

The Domestic Chimney

Much light on the practicability of domestic smoke abatement was supplied in a paper on Municipal Housing Schemes by Mr E D Simon and Miss M FitzGerald The Smoke Abatement League circulated to local authorities a questionnaire designed to elicit what steps, if any, they had taken to reduce or abolish smoke from their own houses, and what were the results in the opinion of both authority and tenants The answers, summarised in the paper, clearly showed that domestic smoke abatement was practically a new idea to some authorities In a very fair number of housing schemes, however, provision had been made for smokeless heating and cooking with the exception of one coal fire, and in some cases all-gas and all-electric houses had been tried After making allowance for the natural dislike of change, even for the better the evidence justified the conclusion that a far wider use of smokeless methods would be acceptable and economic even in houses occupied by people of limited means The Conference endorsed the view that the Government in its Smoke Abatement Bill was quite needlessly overcautious in refusing to deal with the domestic chimney A purely permissive clause was required, enabling local authorities to make regulations with regard to cooking and heating arrangements in *new* dwelling-houses, with a view to reducing smoke

Mr Raymond Unwin and Mr Pointon Taylor, Chief Architect and Chief Assistant Architect respectively to the Ministry of Health, while defending the Government's caution, set forth in their paper on "Clean Air and Clean Houses" the possibilities of smoke abatement in an encouraging way which seemed hardly consistent

Further Steps.

Papers were also contributed on the subject of industrial smoke, and a preliminary step was taken to bring about the formation of voluntary associations of manufacturers to study in cooperation and apply individually means of eliminating the inefficiency and waste which their present smoke production represents. A more comprehensive suggestion was also thrown out that the delay between the admitted establishment of economic remedies for smoke and their adoption by domestic and industrial fuel-users might be reduced if a national smoke abatement movement were brought into being, embracing all the smoke abatement efforts now carried on too much in isolation At any rate the Conference made clear the slowness with which people put into practice even smokeless methods that are known to pay, apart from their value as such

Attendance at the exhibition has been disappointingly small But at present it is not apparent whence the funds are to be drawn for a campaign on a scale which would attract adequate notice

---

MEDICINE AND THE LAW

Hospital Collection Frauds

MENTION was made in this column a few weeks ago of sentences passed upon a group of defendants who had been conspiring to obtain charitable contributions by fraud Their method was to represent themselves as an organisation engaged in collecting money in aid of hospitals, and they obtained considerable sums from audiences at cinematograph theatres, being sometimes allowed to address the audiences from the stage An associate of these defendants pleaded "Guilty" on Sept 8th at the Central Criminal Court to a charge of conspiring to obtain charitable contributions by fraud, and was sentenced to nine months imprisonment in the second division He would have been tried and sentenced with the defendants in the previous proceedings had he not disappeared while on bail awaiting trial In a country where the hospitals rely so largely upon voluntary subscriptions this particularly mean fraud seems to require specially vigorous measures It is perhaps hopeless to expect the charitable public, though often imposed upon, to examine the credentials of every person who invites contributions for charitable objects But a great deal can be done by local, if not general, restrictions upon the abuse of flag-days, and upon unauthorised collection in places of public resort By-laws should be elaborated, if necessary, and every locality should see that its inhabitants are protected The bench will no doubt bear in mind, too, the desirability of passing exemplary sentences

Poisoning Cases Immediate Treatment at Hospitals

There are few practitioners who have not had experience of the manifestations of disappointment of persons who wish for the immediate treatment of a patient at a juncture when every moment of professional time is already occupied with the treatment of others The same disappointment must often occur where a hospital is asked to give facilities or accommodation when neither are available At an inquest on Sept 10th the Hackney coroner (Dr Edwin Smith) commented adversely upon the action of a doctor at the German Hospital at Dalston, who had omitted to treat a woman suffering from lysol poisoning The woman was found lying unconscious upon the floor of her kitchen, having apparently swallowed poison She was taken to the German Hospital, but, as no bed was available, she was removed to the Metropolitan Hospital, where she died an hour later. The coroner's point was that first-aid should have been rendered and that for this purpose it was unnecessary to wait till the patient could be put to bed The resident at the German Hospital was asked if he did not think it would have been better to have gone down and looked at the patient before sending her away to another hospital He did not agree · he said it would have taken some time to administer treatment and he was not in a position to admit her to his hospital It appeared from his further evidence that the German Hospital was not equipped with a poison cupboard with stomach-pumps antidotes and emetics in readiness for prompt use, and that it would have taken time to collect apparatus and drugs The coroner in recording a verdict of "Suicide while of unsound mind ' took the view that while treatment would not have saved life in this instance. the hospital should have been prepared to meet such an emergency We note that in the Medical Directory this hospital is described as ' for . . all cases of emergency.'

Patient Declining to Remain in Hospital

An incident of a converse character, occurring on the same day illustrates the reluctance of some patients to be admitted to hospital A woman was knocked down by a motor-car and was taken in an ambulance to St. George s Hospital There she was examined by a doctor who advised her to remain She declined to remain and signed a document to the effect that she had left of her own accord and contrary to the doctor s advice Five days later she was found dead at her flat The post-mortem examination showed that the deceased a woman of 60. had a fissured fracture at the base of the skull a fracture of such a nature that it could hardly be diagnosed during life She had also four ribs fractured The divisional police surgeon Dr Percy J. Edmunds giving evidence in the Westminster coroner s court expressed the opinion that the deceased had lain in bed for some time but that, owing to the gradual oozing of blood in the brain she had begun to feel faint and probably got up to summon assistance when she fell and died The coroner s jury returned a verdict of ' Accidental death '

BERLIN

(FROM OUR OWN CORRESPONDENT)

Epidemic of Gastro-intestinal Catarrh.

IN certain districts of the city of Hanover an epidemic of gastro-intestinal catarrh has occurred fortunately without fatal issue up to the time of writing [1] It has been ascertained by the Hygienic Institute of Hanover that the cause of the disease was a contamination of the drinking water Although the organisms of enteric fever. dysentery or cholera were not present, the percentage of germs in the water from one of the waterworks was found to have considerably increased The epidemic which had affected a large number of the people in the district which is supplied from this source, has now been stamped out and officials of the Health Office state that the water is now safe for drinking purposes without being boiled They are of opinion that the inundations of this summer had caused germs from the surface of the soil to penetrate into the deeper strata whence the water is derived , moreover a deficiency in the drains due to the floods had allowed the waste water from a tar factory to find its way to the water-works

Birth-rate in Germany and in France

At a recent meeting of the Berlin Society for Public Health the birth-rate in Germany was discussed by Prof Grotjahn He stated that formerly the birth-rate had exceeded the number of deaths. so that the population showed a constant increase and Germany became overcrowded This state of things has changed during the last 20 years. At present the number of deaths is certainly smaller than that of the births: this is. however. attributed to the fact that during the war so many people were killed. and immediately afterwards, during the inflation, underfeeding caused the premature death of others Now that normal conditions have been restored the death-rate is expected to show an increase whilst the birth-rate will diminish The decrease of the birth-rate is believed to be due to the indiscriminate use of contraceptive drugs and appliances a factor common to all nations of the West ; in Slavonic countries an enormous number of births still take place By statistical researches it has been ascertained that to maintain the number of the population—not to increase it—there must be three children for every marriage and as every marriage cannot produce that number there must naturally be families with more children In France there is a law according to which families of small financial means receive support from the municipality on behalf of every child born after the second They moreover enjoy other privileges Germany has done nothing in this direction Prof Grotjahn pointed out that it is erroneous to believe that the decrease of the birth-rate is a remedy for unemployment. The example of France shows on the contrary. that the decrease of the birth-rate in a country induces foreign workmen to come to seek work there The state of things in Germany is the more undesirable, as in France the decrease of births has been nearly stopped for several years whilst in Germany it is still growing steadily In Germany in 1900 35 births were registered for each 1000 inhabitants : in 1924. only 20 4 In France the birth-rate was only 21 3 in 1900 . but scarcely less—19 3—in 1924 The speaker (Prof Grotjahn) advised the Government to adopt and to improve upon the French system of support of families having many children

Articles in the Medical Press

Seventy-eight editors of German medical periodicals, including the leading medical journals have collectively approached the heads of university clinics and other scientific institutions asking them to insist on the reduction to a reasonable size of articles submitted for publication by their assistants. They state that they can no longer afford to give as much space as before the war to lengthy communications and point out that when the MSS for publication are shortened in the editorial office undesirable controversy may ensue Heads of clinics and scientific institutes are therefore asked to use their authority in supervising articles issued by their juniors and to induce them to submit MSS in a more concentrated form Articles of minor importance when too long, must inevitably be refused The editors point out that this step has been taken only in the interest of maintaining the high standard of their journals

Statistics of Hospitals in Prussia

In 1924 the number of hospitals clinics, and infirmaries in Prussia was 2195. of which 1816 were public institutions The number of institutions has decreased by 134 since 1913. but the number of beds has increased being 205 516 against 177 184 in 1913 For each 10.000 inhabitants 54 9 beds are now available against 42 5 before the war The number of hospital patients in 1924 was 1 606 178, against 1,534 209 in 1913 Of these 88 836 died. giving a death-rate of 5 5 per cent., against a death-rate of 6 1 in 1923 and 5 6 in 1913 The relation of the deaths in hospital to the general death-rate was. in 1924, 193 5 to 10 000, in 1921 177 8 and in 1913. only 136 7 This relative increase of the deaths in hospital is ascribed to the fact that membership to a sick club which has to cover the expenses of a hospital stay having become compulsory for a much greater percentage of the population. in consequence many more patients than formerly are conveyed to hospital when ill

---

[1] Fatal cases have since been reported in the press in which the outbreak has generally been described as one of typhoid fever —ED L.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH

The following are some of the health statistics of three English and two Scottish counties (landward areas) for 1925 .—

Name of county	Estimated mid year population (R G)	Birth rate	Death-rates per 1000 of the population: All causes	Tuberculosis	Cancer	Resp diseases with influenza	Heart disease	Death-rates per 1000 births: Infant mortality.	Maternal mort from childbirth
Warwickshire .	361,700	18 5	11 1	0 91	1 31	2 0	1 5	62	5 1
Hertfordshire	346,600	15 8	10 4	0 84	1 49	1 7	1 6	47	3 3
Northamptonshire	215,300	16 2	11 7	0 97	1 44	1 7	1 6	57	3 2
Dunbartonshire	54,449	19 3	12 3	0 88	1 49	2 0	1 7	72	4 7
Roxburghshire	19,819	15 7	14 1	0 85*	1 61	2 3	2 7	60	9 6

* Average for 3 years 1923–25, including burghal area

Warwickshire.

Dr A. Hamilton Wood reports that the infant death-rate of 56 in the urban districts compares very favourably with the 66 recorded in the rural districts There were 22 deaths from diarrhœa in the rural as compared with only 4 in the urban, which may be the result of the better facilities in the urban districts for infant welfare work The population of the urban district is 157,500, and of the rural 204,200 Sixty-seven cases of small-pox were notified in the county with no deaths Diphtheria, unlike scarlet fever, maintains its position as a fatal infectious disease The case fatality among the 542 cases notified in 1925 was 6 4 per cent Dr Wood is of opinion that this case-rate would be reduced if the early administration of antitoxin were more generally adopted The public also need to be educated to seek medical advice early in all cases of sore-throat when diphtheria is known to be present in the district Of the 8 cases of enteric fever notified 4 were of the mild or paratyphoid type (Two deaths occurred in males of 25 and 45 years respectively There were 46 notifications of encephalitis lethargica with 26 deaths Dr Wood thinks that several adjoining counties should combine to establish an institution for the treatment of the survivors from this disease There was a widespread epidemic of influenza in the first quarter of the year, which led to the closure of 114 schools , the deaths numbered 138

After a conference with all the local authorities in the county it was decided that the County Council should administer the Milk Act of 1915, and the veterinary surgeons under the Diseases of Animals Acts have been appointed for this purpose The examination of milk for tubercle was only just begun at the close of the year During the current financial year the Council has authorised the examination of 50 samples for tubercle bacilli, which does not seem a large number. The treatment of pulmonary tuberculosis by sanocrysin was begun at the Memorial Sanatorium during the summer So far the results are encouraging The County Council have issued instructions with regard to the examination of diphtheria swabs which are expected to effect an economy without interfering with efficiency Convalescents are only to be swabbed if there are clinical signs Convalescents are not to be readmitted to school until two or three weeks after the end of the illness on the certificate of the district medical officer Virulence tests will only be carried out on the authority of the county medical officer of health Swabs among contacts are only to be taken from those showing clinical signs Emphasis is laid on the dictum of the Medical Research Council that the diagnosis of diphtheria is the province of the clinician, who cannot place any of the responsibility on the shoulders of the bacteriologist

Dr Wood is impressed with the small number of women who present themselves for treatment at the V D centres, and he is convinced that the only solution is treatment in the doctor's private surgery At the five V D centres only 40 new female cases were treated, as against 162 men The grant previously made by the County Council to the nursing associations for the training of midwives is to be modified so as to become a grant towards the appointment of midwives to work in the county The new cases who attended at the four antenatal clinics during 1925 numbered only 218, while the total births were 6677 The midwives attended 4890 births and sent for medical help in 885 cases Arrangements have been made during the year for the orthopædic treatment of children under 5 years of age at the Dunsmoor Clinic, Coventry, maintained by the Coventry Cripples' Guild There are now 34 infant welfare centres, all run by voluntary committees working in close association with the County Council The two county maternity homes have fulfilled a much-felt want, as there are still many young married couples who have to live in rooms The Rugby Home admitted 89 cases and the Warwick Home 34, and, in addition, 108 extern cases were attended by the midwives of the Warwick Home Of the 30 cases of ophthalmia notified, one resulted in total blindness and another in impaired vision

Hertfordshire

Dr. H Hyslop Thomson gives particulars of the home conditions of 389 patients suffering from tuberculosis The conditions are described as good in 60 5 per cent , indifferent in 28 6 per cent , and bad in 10 9 per cent In the case of 68 per cent there were 2 or less persons per bedroom, in 21 7 per cent there were 3 persons, in 8 5 per cent 4, and in 1 8 per cent over 4

The conditions of the ex-Service men come out best, of the insured persons second best, and of the uninsured worst The information obtained "indicates the existence of overcrowding and emphasises the urgent need for the provision of additional houses" There is an absence of adequate accommodation in certified institutions, more especially for low grade and complicated cases of mental defect The difficulties met with show the importance and urgency of the steps which have been taken to provide a certified institution and training colony There were 15 notifications of encephalitis lethargica 14 being from the urban districts Of the 9 deaths 8 occurred in the urban districts The chief advance made during the year in the maternity and child welfare scheme had been the establishment of 4 antenatal clinics, which were attended by 269 expectant mothers, the number of births in the administrative county being 5481

Maternal deaths from puerperal sepsis continue at about the same level In Hertfordshire Dr Thomson suggests that the condition is due to auto-infection rather than to infection introduced from without Inquiries with regard to the feeding of infants indicate that at the age of 6 months 66 per cent are entirely breast-fed, 17 per cent are partly breast-fed, and 17 per cent entirely bottle-fed The report of Miss Harrington, the county health visitor, inspector of midwives and superintendent of nurses shows that 2699 of the births were attended by midwives alone, almost exactly half the total births It is further stated that among the births attended by midwives alone only 15 of the infants died before the tenth day The Registrar-General's report shows 94 infantile deaths in the county within the first week. If the information on which Miss Harrington's statements are founded is complete, it follows that the proportion of deaths was five or six times higher in the remaining cases.

In previous reports Dr. Thomson has complained of the dumping of house refuse in the county by outside authorities. He now reports that since the precautions suggested by the Ministry of Health have been carried out the objectionable features of these refuse dumps have been considerably lessened, and that the covering of railway wagons conveying refuse has also improved matters. The regulations for the grading of milk are cited and also the provisions of the new Milk Act and of the Tuberculosis Order of 1925, but it is not stated that any action has been taken with respect to these measures. The state of the private slaughter-houses in the county is still far from satisfactory, and there is need for the erection of central abattoirs. Thirteen samples of apples were examined for arsenic. 4 were free, 7 showed traces negligible in amount, while in the case of 2 the amounts of arsenic were 1/50 and 1/60 of a grain respectively per lb. of apples.

Northamptonshire

Dr. L. Meredith Davies acknowledges the help of his predecessor, Dr. Paget (who resigned on March 21st, 1926) in the preparation of the report. In November 1918 Dr. Paget reported on the question of maternity hospital provision. In July 1922 a maternity home was opened in the borough of Northampton, which was partially subsidised by the County Council. During 1925 the whole subject of maternal mortality was further considered in conjunction with a special committee of the medical profession in the county. The medical delegates expressed themselves as in favour of the establishment of antenatal clinics and hospitals for complicated maternity cases on condition that the services of a specialist obstetrician and gynæcologist were available at such clinics and hospitals. It was decided to approach the boards of the Northampton and Kettering general hospitals. As regards the carrying out of the new milk legislation it has been decided that samples shall be taken by the inspectors appointed under the Food and Drugs Act, that the veterinary work shall be done by the inspectors appointed under the Diseases of Animals Acts, and that arrangements be made if possible, with the Northampton General Hospital for the necessary bacteriological work. There were 17 cases of ophthalmia neonatorum, 13 notified and 4 unnotified. In 2 cases there were opacities, one of the left eye and one of both eyes, and an operation was necessary in both cases to secure any vision. Both of these were doctor's cases and unattended by midwives in any capacity. There were 13 cases of puerperal fever with 5 deaths, 1 being a midwife's case, 2 being attended by midwives as monthly nurses and 2 unattended by midwives in any capacity. In spite of reminders issued for two years in succession, the midwives do not always notify cases of artificial feeding. During 1925 29 of these cases were unnotified and Dr. Davies thinks that the reasons for abandoning natural feeding are frequently not valid.

Five patients suffering from lupus were treated at the out-patient department of the London Hospital by Finsen light and arc light baths. Three were cured and two were under treatment at the end of the year. 187 cases of small-pox were notified with 2 deaths. An advance was marked in 1925 as regards the erection of dwellings by private enterprise, 511 were completed as compared with 366 in the previous year. There were also 223 in course of erection at the close of the year. The houses erected by local authorities numbered 106 as compared with 89 in 1924 and in addition there were 216 houses in course of erection. During the years 1921–25 1634 houses were completed by local authorities and 1279 by private enterprise. During the same period closing or demolition orders were made in respect of 125 houses. The county analyst, Mr. E. W. Voelcker, reports that under the food orders of 1919 shredded suet had to contain at least 80 per cent. of fat, and that now in some cases over 30 per cent. of rice-flour is added, the fat being less than 65 per cent. He thinks this excessive amount of "diluent" should be controlled by law.

Dunbartonshire

Dr. Thomas Lauder Thomson reports that in March 1925 an arrangement was made with the Glasgow Corporation whereby tuberculous "suspects" could be examined by X rays at Ruchill Hospital. Of the 22 cases examined 4 were positive, 1 doubtful, and 10 negative. Four were referred to the tuberculosis officer and in 3 the examination was repeated. Although these examinations do not give conclusive results in all cases Dr. Thomson thinks they are valuable as confirmation in doubtful cases. Most of the farmers are doing their best to carry out the by-laws framed for securing better accommodation for seasonal workers. A milk vendor was fined during the year for breach of the Milk and Dairies (Amendment) Act, 1922. He was selling milk from a barrow in one of the populous areas in the county and the barrow had inscribed on it "Milk free from tuberculuous" and in large letters "Smith's pasteurised milk." There was also a picture of a churn with "Grade A" printed on it. This vendor had no licence for any grade of milk and disregarded warnings. The school clinics have been opened for all children irrespective of age, and this enables children to be sent from the child welfare centres for the treatment of diseases of the ear, nose, throat, eyes and teeth, and also for the treatment of ringworm. The fever hospital service has been improved by coöperative arrangements between the three hospitals, so that if one hospital becomes overcrowded patients can be transferred to another.

Roxburghshire

Dr. M. J. Oliver shows that when the last two quinquennia are compared the infant mortality-rate has been reduced from 81 to 65. This reduction would no doubt have been attributed to a welfare scheme if the county had had one; some of the credit Dr. Oliver assigns to the local nursing association. During the year a known typhoid carrier died in Kelso Hospital. Since she was first ill in Northumberland in October, 1913, she had been the cause of 11 cases of typhoid fever in Roxburghshire. The Kelso district committee did their best to protect the community without undue hardship to the sufferer by providing her a home with necessary conveniences at the public cost, but, in spite of this, infection was more than once communicated to other people. She underwent an operation in Glasgow in 1923 for the purpose of getting rid of the infection. The operation was apparently successful, but she died from an intercurrent affection during the long course of bacteriological testing needed to make sure that she was free from infection. Dr. Oliver records that a few more cases of puerperal fever have been notified than usual, but that this probably does not indicate any real increase in numbers. Many medical practitioners find a difficulty in determining what cases should be notified under this "antiquated term." Cases notified are generally in the practices of senior members of the profession whose reputation can stand the possible imputation.

Dr. G. F. B. Page in reporting on the tuberculosis scheme says we must dispose of the time-worn myth, "the light job in the open-air." No such job exists at a living wage. It is best for the patient to return to his original work unless it is one of half a dozen intrinsically unhealthy occupations. Dr. Page thinks that we ought to realise that light treatment of tuberculosis is in an experimental stage and that harm may be done by its injudicious use. The forms of tuberculosis which benefit most are those of exudative type.

Correspondence.

"Audi alteram partem"

THE STUDY OF DEATH IN MAN

To the Editor of The Lancet

Sir,—In order to encourage a systematic and scientific study of the dying hour, I would suggest that medical societies pass some such resolution as —

Resolved That the Medical Society of the favours the scientific and systematic study of the physiology and psychology of death in man, and requests its members to make such studies in every case of death when there is opportunity

It is a curious fact that as yet there seems to have been no systematic and scientific study of human death There have been more or less sporadic efforts to make such investigations in exceptional and interesting pathological cases But the regular order, so to speak, or the average manner of death is not known Some of the main reasons for such study are —

1 To gain trustworthy and general knowledge of what most often takes place in the dying hour, including details

2 To learn the manner of death for different diseases and the per cent of those conscious and unconscious

3 To find in what per cent of cases there is severe pain, slight pain, and no pain

4 To note details in exceptional and special cases and the causes of these phenomena and the length of dying time

5 To determine the characteristics and differences in dying between infants, children, adolescents, adults before middle life, during middle life, in old age, and from 80 to 100 years of age, including points under numbers 2, 3, and 4 for their ages

6 To present eventually a general picture of the dying time, based upon a sufficient number of observations, and with instruments of precision when possible

7 That with such knowledge the treatment of patients during the dying time may be more humane and delicately done

8 That in cases that are liable to be painful, proper precautions may be taken in advance, so that pain may be avoided or greatly lessened

9 That finally the knowledge of the dying time may be so increased that physical death will cease to be feared or dreaded by all persons, since through such knowledge pain may be practically eliminated and death may be made easy, gentle, and placid

I am myself seeking opportunity to make observation on cases of death, and I would consider it a great favour if any physician who makes observations and studies of cases during the dying time will send me a copy of his notes and results, for which due credit will be given when sufficient data are received to justify publication

I am, Sir, yours faithfully,
(Dr) Arthur MacDonald,

The Congressional Apartments, 100 E Capitol-street, Washington, D C

CHENOPODIUM FOR ANKYLOSTOMIASIS

To the Editor of The Lancet

Sir,—Mr Paget's recent paper on the determination of the ascaridol content of oil of chenopodium, to which Messrs Burroughs Wellcome and Co call courteous attention in your issue of Sept 4th, shows that the constants laid down for that oil in the U S P are valueless unless the oil is a genuine one, since they can be reproduced by skilful adulteration, and, moreover, that the means advised in that Pharmacopœia for determining the ascaridol content are not effective in such an adulterated oil With a genuine oil, however, the old methods of estimating ascaridol, especially the specific gravity test, are shown to be fairly or actually accurate Accordingly if one may assume, as seems reasonable, that the bulk of the oil used generally in anthelmintic work has been genuine, the findings of Mr Paget's careful investigation authorise little misgiving in the continued use of the mass of information which has been accumulated in the tropics on the administration and effects of oil of chenopodium

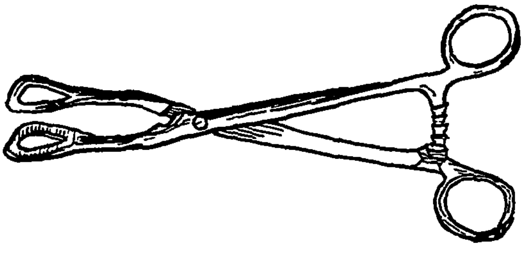
The letter under consideration raises a second point of equal practical importance Burroughs Wellcome and Co have produced an oil of chenopodium having an ascaridol content of 90 per cent and upwards In 1 2 c cm of this oil there is as much ascaridol as in about 1 8 c cm of an ordinary sample Put otherwise, to give 1 2 c cm of this preparation is equivalent to giving 1 8 c cm of an ordinary sample, while a dose of 1 5 c cm is equivalent to 2 25 c cm In order to administer the ordinary dose of ascaridol the dose of this particular oil must be only 0 8 c cm, a vital matter seeing how slight must sometimes be the margin between safety and anxiety in the case of ascaridol, equally with that of the other anthelmintics of which we have present knowledge

I am, Sir, yours faithfully,
Ealing, W, Sept 10th, 1926 Clayton Lane.

A PLEA FOR THE PERMANENT ABOLISHMENT OF THE "LINGUOTRITE"

To the Editor of The Lancet.

Sir,—The "linguotrite" or tongue-crusher, is a brutal instrument which is still far too frequently found in the anæsthetist's tray of our hospitals up and down the country I am not implying that any professional anæsthetist would think of applying such an instrument to the tongue of his patient, but in the heat of the moment, when it suddenly becomes necessary to draw the tongue forward, as long as this contraption is at hand it will continue to be used by those whose duty it is to administer anæsthetics For weeks after its application the tongue is swollen and painful The bruising and subsequent inflammation constitutes a clinical entity—linguotritic glossitis I have observed several examples of this condition, which may be said to be the only omission from that masterpiece of surgical monographs, Butlin's "Diseases of the Tongue" The remedy is simple The linguotrite should be once and for all relegated to the dust-bin, and a pair of rational tongue forceps substituted



I am, Sir, yours faithfully,
Sept 10th, 1926 Hamilton Bailey

THE PATHOLOGICAL SERVICE OF THE GENERAL HOSPITAL

To the Editor of The Lancet

Sir,—I entirely agree with Dr Powell White The pathologist has quite enough to put up with in competition with commercial, greater hospital, and university laboratories without having his own hospital interfering with his private work As to paying a stipend and receiving rent (which would be practically impossible to assess) the hospital would be giving with one hand and receiving with the other, the pathologist remaining a paid servant, giving hospital cases precedence and possibly losing private work

I think the only satisfactory solution has been found here The hospital provides the laboratory and its equipment, the pathologist is a member of the honorary medical staff, and he practises as a specialist consultant in the strictest sense He also does a good deal of public health work, being paid according to an agreed scale of fees for each item He is his own master, he does not give preference to any case, hospital or private, he takes them as they come, on their necessity He certainly has to work very hard, and consulting specialist practice in the country is not brilliantly remunerative, but he retains his self-respect and makes enough to live on with the ordinary decencies of life, although he cannot afford a car, which is not a professional necessity in his case

I am, Sir, yours faithfully,
H ST ARNAUD AGATE

Pathological Department, General Infirmary,
Salisbury, Sept 9th, 1926

JUSTICE FOR HOMER BOSTWICK

To the Editor of THE LANCET

SIR,—There has recently come into my hands an example of literary piracy of an extremely interesting type which, for historical and other reasons, I should like to comment upon The pirate was a Dr Homer Bostwick, who practised in New York between 1840 and 1870 The victims were Philippe Ricord, the famous French syphilologist, and his London pupil, William Acton

Briefly the facts are as follows In 1848 there appeared a volume, " A Complete Practical Work on the Nature and Treatment of Venereal Diseases, and other Affections of the Genito-Urinary Organs of the Male and Female," by Homer Bostwick, M D New York Burgess Stringer and Co, 1848 Bostwick sent a copy to THE LANCET for review, inscribed "Thomas Wakley J Henry Bennett With the respects of the author " It is this copy which is now in my possession The inscription, I think, is in the author's handwriting, because Bennet's name is wrongly spelt Why a single copy should have been sent between two men is not very obvious Possibly it was economy Henry Bennet was obstetric physician to the Royal Free Hospital at the time, wrote for many years on THE LANCET staff, and was a friend of the Wakley family The copy contains a series of caustic pencilled notes, in the margins, on which the review, to be presently commented upon, was afterwards built Apparently this is the only copy of the work in London, and, I think, it must have been sent to Acton as a curiosity of piracy after Wakley had finished with it Acton's library passed to Sir Alfred Cooper, formerly senior surgeon to the London Lock Hospital, and from Cooper's library it, with other books of Acton, came to me Probably after the castigation which it received in THE LANCET the book fell dead on the market And yet, in spite of everything said, and truly said, against it, re-reading it now, nearly 80 years after, with an unbiased mind, I have been much impressed by certain opinions expressed and statements made, which, unorthodox in their day, have since been proved correct Bostwick may have been a pirate, but he was also an acute clinician, and it is in the hope that some reader may be able to supply details about this forgotten author that I wish to resurrect the matter

The review appeared in THE LANCET of 1849, vol i, p 401 It begins —

> "We doubt, brother Jonathan, if it was a smart trick in you to send us this book for review So long as it occupied the shelves of your publisher, in Broadway, or was read in the repudiating States, the deception might have been undiscovered but with us your fine plumage cannot conceal your daw's carcass, for your book contains nothing good but what you have pillaged from this side of the Atlantic "

Imagine starting a review thus in these days! But at that time there was considerable irritation in England against the United States, because certain individual States had borrowed money for railway and other public services, and when the interest became due had repudiated responsibility, leaving the bond-holders high and dry But why visit the sins of defaulting States on an unfortunate medical writer? Again I quote from the review —

> "In looking over the American annals of literature, we must all be painfully struck with the injustice of United States men in seizing our best surgical works, and reprinting them, as soon as published, with what are called Notes by Dr This, or Observations by Mr That Doubtless it is easier to steal a book than write one, even though it contain trash, but we very much question if this dishonest system is likely to protect or foster native talent, any more than it will improve national morals, or promote international respect and brotherly feeling "

Here the reviewer is giving vent to his indignation as a writer upon seeing literary property stolen before his eyes, and even now the United States remain the only great nation refusing to recognise international copyright, even though large sums of American money reach English authors

Having thus pilloried the States, and the publishers' morals, the reviewer returns to Bostwick thus —

> "It was, however, left for Dr Bostwick to outvie any of his countrymen in injustice to authors on this side of the Atlantic In a large, handsome quarto, with coloured plates, woodcuts, and bold type, he has, under his own name, published a book on Venereal Diseases, which, almost from beginning to end, has been plundered from the works of M Ricord and Mr Acton "

The great feature of the work, the profusion of coloured plates, is thus dealt with —

> "'Some of the drawings,'" Bostwick says, "'I have borrowed from the great work of Ricord, others from Acton and some I have taken directly from life'"

On this it is commented —

> "Whatever his 'returns' may be, his 'borrowings' have been pretty considerable We have looked into the works in question, and believe we can trace every coloured plate or woodcut (about 70 in number), except one, to English or French treatises But our transatlantic daw, not content with this wholesale borrowing, as he calls it, has so maimed the descriptive history of the plates that it would be difficult for even the author to recognise the production of his own pen "

The slating is justified I have gone over the plates of Ricord and Acton to verify this statement, and can confirm it The real deception is in the text opposite the plates These are quite accurately translated from the French, but wherever such a remark as "M Ricord prescribed," or names of places such as "Paris" or "Belgium" occur, these are left out, in order, as the reviewer remarks,

> "that the reader might suppose that the drawing is made by the author, and the case happened in his practice; the swindle is made more complete by neither artist's nor author's name being mentioned "

The fraud is quite obvious, and yet, reading the book now, without prejudice, one is struck by its extraordinary lucidity, its broad sanity, its modern note, and its refusal to be intimidated by the authority of a great name Anyone conversant with the history of syphilis will remember that John Hunter considered secondary syphilis was non-contagious, that Ricord maintained the same, and that owing to the authority of these great names the truth did not become generally recognised until about 1870 It is true Babington at the Lock Hospital disputed it, and that Dr Wallace, of Dublin, published in THE LANCET (April 23rd, 1836, p 132) an account of how he inoculated five healthy persons with secondary syphilis and produced primary sores therefrom But no one seems to have believed him at the time Whether Bostwick was acquainted with Wallace's work is doubtful, but at any rate we find him vigorously maintaining in 1848, on pages 131 and 132 of his book, the present modern view

All through my copy of the book are pencilled notes, as I have mentioned before, and certainly the author is ill treated, in view (it must be remembered

Correspondence.

"Audi alteram partem"

THE STUDY OF DEATH IN MAN

To the Editor of The Lancet

Sir,—In order to encourage a systematic and scientific study of the dying hour, I would suggest that medical societies pass some such resolution as —

Resolved That the Medical Society of the favours the scientific and systematic study of the physiology and psychology of death in man, and requests its members to make such studies in every case of death when there is opportunity

It is a curious fact that as yet there seems to have been no systematic and scientific study of human death There have been more or less sporadic efforts to make such investigations in exceptional and interesting pathological cases But the regular order, so to speak, or the average manner of death is not known Some of the main reasons for such study are —

1 To gain trustworthy and general knowledge of what most often takes place in the dying hour, including details

2 To learn the manner of death for different diseases and the per cent of those conscious and unconscious

3 To find in what per cent of cases there is severe pain, slight pain, and no pain

4 To note details in exceptional and special cases and the causes of these phenomena and the length of dying time

5 To determine the characteristics and differences in dying between infants, children, adolescents, adults before middle life, during middle life, in old age, and from 80 to 100 years of age, including points under numbers 2, 3, and 4 for their ages

6 To present eventually a general picture of the dying time, based upon a sufficient number of observations, and with instruments of precision when possible

7 That with such knowledge the treatment of patients during the dying time may be more humane and delicately done

8 That in cases that are liable to be painful, proper precautions may be taken in advance, so that pain may be avoided or greatly lessened

9 That finally the knowledge of the dying time may be so increased that physical death will cease to be feared or dreaded by all persons, since through such knowledge pain may be practically eliminated and death may be made easy, gentle, and placid

I am myself seeking opportunity to make observation on cases of death, and I would consider it a great favour if any physician who makes observations and studies of cases during the dying time will send me a copy of his notes and results, for which due credit will be given when sufficient data are received to justify publication

I am, Sir, yours faithfully,
(Dr) Arthur MacDonald,

The Congressional Apartments, 100 E Capitol-street, Washington, D C

CHENOPODIUM FOR ANKYLOSTOMIASIS

To the Editor of The Lancet

Sir,—Mr Paget's recent paper on the determination of the ascaridol content of oil of chenopodium, to which Messrs Burroughs Wellcome and Co call courteous attention in your issue of Sept 4th, shows that the constants laid down for that oil in the U S P are valueless unless the oil is a genuine one, since they can be reproduced by skilful adulteration, and, moreover, that the means advised in that Pharmacopœia for determining the ascaridol content are not effective in such an adulterated oil With a genuine oil, however, the old methods of estimating ascaridol, especially the specific gravity test, are shown to be fairly or actually accurate Accordingly if one may assume, as seems reasonable, that the bulk of the oil used generally in anthelmintic work has been genuine, the findings of Mr Paget's careful investigation authorise little misgiving in the continued use of the mass of information which has been accumulated in the tropics on the administration and effects of oil of chenopodium

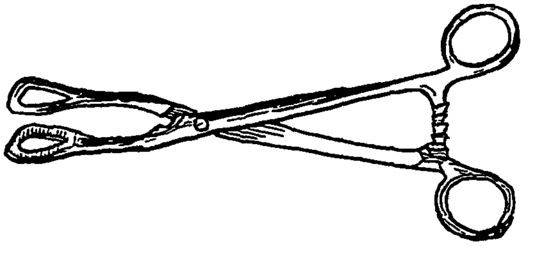
The letter under consideration raises a second point of equal practical importance Burroughs Wellcome and Co have produced an oil of chenopodium having an ascaridol content of 90 per cent and upwards In 1 2 c cm of this oil there is as much ascaridol as in about 1 8 c cm of an ordinary sample Put otherwise, to give 1 2 c cm of this preparation is equivalent to giving 1 8 c cm of an ordinary sample, while a dose of 1 5 c cm is equivalent to 2 25 c cm In order to administer the ordinary dose of ascaridol, the dose of this particular oil must be only 0 8 c cm , a vital matter seeing how slight must sometimes be the margin between safety and anxiety in the case of ascaridol, equally with that of the other anthelmintics of which we have present knowledge

I am, Sir, yours faithfully,
Ealing, W , Sept 10th, 1926 Clayton Lane.

A PLEA FOR THE PERMANENT ABOLISHMENT OF THE "LINGUOTRITE"

To the Editor of The Lancet.

Sir,—The "linguotrite" or tongue-crusher, is a brutal instrument which is still far too frequently found in the anæsthetist's tray of our hospitals up and down the country I am not implying that any professional anæsthetist would think of applying such an instrument to the tongue of his patient, but in the heat of the moment, when it suddenly becomes necessary to draw the tongue forward, as long as this contraption is at hand it will continue to be used by those whose duty it is to administer anæsthetics For weeks after its application the tongue is swollen and painful The bruising and subsequent inflammation constitutes a clinical entity—linguotritic glossitis I have observed several examples of this condition, which may be said to be the only omission from that masterpiece of surgical monographs, Butlin's "Diseases of the Tongue" The remedy is simple The linguotrite should be once and for all relegated to the dust-bin, and a pair of rational tongue forceps substituted



I am, Sir, yours faithfully,
Hamilton Bailey
Sept 10th, 1926

THE PATHOLOGICAL SERVICE OF THE GENERAL HOSPITAL

To the Editor of The Lancet

Sir,—I entirely agree with Dr Powell White The pathologist has quite enough to put up with in competition with commercial, greater hospital, and university laboratories without having his own hospital interfering with his private work As to paying a stipend and receiving rent (which would be practically impossible to assess) the hospital would be giving with one hand and receiving with the other, the pathologist remaining a paid servant, giving hospital cases precedence and possibly losing private work

I think the only satisfactory solution has been found here The hospital provides the laboratory and its equipment, the pathologist is a member of the honorary medical staff, and he practises as a specialist consultant in the strictest sense He also does a good deal of public health work, being paid according to an agreed scale of fees for each item He is his own master, he does not give preference to any case, hospital or private, he takes them as they come, on their necessity He certainly has to work very hard, and consulting specialist practice in the country is not brilliantly remunerative, but he retains his self-respect and makes enough to live on with the ordinary decencies of life, although he cannot afford a car, which is not a professional necessity in his case

I am, Sir, yours faithfully,
H ST ARNAUD AGATE

Pathological Department, General Infirmary,
Salisbury, Sept 9th, 1926

JUSTICE FOR HOMER BOSTWICK

To the Editor of THE LANCET

SIR,—There has recently come into my hands an example of literary piracy of an extremely interesting type which, for historical and other reasons, I should like to comment upon The pirate was a Dr. Homer Bostwick, who practised in New York between 1840 and 1870 The victims were Philippe Ricord, the famous French syphilologist, and his London pupil, William Acton

Briefly the facts are as follows In 1848 there appeared a volume, " A Complete Practical Work on the Nature and Treatment of Venereal Diseases, and other Affections of the Genito-Urinary Organs of the Male and Female," by Homer Bostwick, M D New York Burgess Stringer and Co , 1848 Bostwick *sent* a copy to THE LANCET for review, inscribed "Thomas Wakley J Henry Bennett With the respects of the author " It is this copy which is now in my possession The inscription, I think, is in the author's handwriting, because Bennet's name is wrongly spelt Why a single copy should have been sent between two men is not very obvious Possibly it was economy Henry Bennet was obstetric physician to the Royal Free Hospital at the time, wrote for many years on THE LANCET staff, and was a friend of the Wakley family The copy contains a series of caustic pencilled notes, in the margins, on which the review, to be presently commented upon, was afterwards built Apparently this is the only copy of the work in London , and, I think, it must have been sent to Acton as a curiosity of piracy after Wakley had finished with it Acton's library passed to Sir Alfred Cooper, formerly senior surgeon to the London Lock Hospital, and from Cooper's library it, with other books of Acton, came to me Probably after the castigation which it received in THE LANCET the book fell dead on the market And yet, in spite of everything said, and truly said, against it, re-reading it now, nearly 80 years after, with an unbiased mind, I have been much impressed by certain opinions expressed and statements made, which, unorthodox in their day, have since been proved correct Bostwick may have been a pirate, but he was also an acute clinician ; and it is in the hope that some reader may be able to supply details about this forgotten author that I wish to resurrect the matter

The review appeared in THE LANCET of 1849, vol i , p 401 It begins —

> " We doubt, brother Jonathan, if it was a smart trick in you to send us this book for review So long as it occupied the shelves of your publisher, in Broadway, or was read in the repudiating States, the deception might have been undiscovered but with us your fine plumage cannot conceal your daw's carcass, for your book contains nothing good but what you have pillaged from this side of the Atlantic "

Imagine starting a review thus in these days! But at that time there was considerable irritation in England against the United States, because certain individual States had borrowed money for railway and other public services, and when the interest became due had repudiated responsibility, leaving the bond-holders high and dry But why visit the sins of defaulting States on an unfortunate medical writer ? Again I quote from the review —

> " In looking over the American annals of literature, we must all be painfully struck with the injustice of United States men in seizing our best surgical works, and reprinting them as soon as published, with what are called Notes by Dr This, or Observations by Mr That Doubtless it is easier to steal a book than write one, even though it contain trash , but we very much question if this dishonest system is likely to protect or foster native talent, any more than it will improve national morals, or promote international respect and brotherly feeling "

Here the reviewer is giving vent to his indignation as a writer upon seeing literary property stolen before his eyes , and even now the United States remain the only great nation refusing to recognise international copyright, even though large sums of American money reach English authors

Having thus pilloried the States, and the publishers' morals, the reviewer returns to Bostwick thus —

> " It was, however, left for Dr Bostwick to outvie any of his countrymen in injustice to authors on this side of the Atlantic In a large, handsome quarto, with coloured plates, woodcuts, and bold type, he has, under his own name, published a book on Venereal Diseases, which, almost from beginning to end, has been plundered from the works of M Ricord and Mr Acton "

The great feature of the work, the profusion of coloured plates, is thus dealt with .—

> "' Some of the drawings,'" Bostwick says, "' I have borrowed from the great work of Ricord, others from Acton and some I have taken directly from life ' "

On this it is commented —

> " Whatever his ' returns ' may be, his ' borrowings ' have been pretty considerable We have looked into the works in question, and believe we can trace every coloured plate or woodcut (about 70 in number), except one, to English or French treatises But our transatlantic daw, not content with this wholesale borrowing, as he calls it, has so maimed the descriptive history of the plates that it would be difficult for even the author to recognise the production of his own pen."

The slating is justified I have gone over the plates of Ricord and Acton to verify this statement, and can confirm it The real deception is in the text opposite the plates These are quite accurately translated from the French, but wherever such a remark as " M Ricord prescribed," or names of places such as " Paris " or " Belgium " occur, these are left out, in order, as the reviewer remarks,

> " that the reader might suppose that the drawing is made by the author, and the case happened in his practice ; the swindle is made more complete by neither artist's nor author's name being mentioned "

The fraud is quite obvious, and yet, reading the book now, without prejudice, one is struck by its extraordinary lucidity, its broad sanity, its modern note, and its refusal to be intimidated by the authority of a great name Anyone conversant with the history of syphilis will remember that John Hunter considered secondary syphilis was non-contagious, that Ricord maintained the same, and that owing to the authority of these great names the truth did not become generally recognised until about 1870 It is true Babington at the Lock Hospital disputed it, and that Dr Wallace, of Dublin, published in THE LANCET (April 23rd, 1836, p 132) an account of how he inoculated five healthy persons with secondary syphilis and produced primary sores therefrom But no one seems to have believed him at the time Whether Bostwick was acquainted with Wallace's work is doubtful, but at any rate we find him vigorously maintaining in 1848, on pages 131 and 132 of his book, the present modern view.

All through my copy of the book are pencilled notes, as I have mentioned before, and certainly the author is ill treated, in view (it must be remembered

Correspondence.

"Audi alteram partem"

THE STUDY OF DEATH IN MAN

To the Editor of THE LANCET

SIR,—In order to encourage a systematic and scientific study of the dying hour, I would suggest that medical societies pass some such resolution as —

Resolved That the Medical Society of the favours the scientific and systematic study of the physiology and psychology of death in man, and requests its members to make such studies in every case of death when there is opportunity

It is a curious fact that as yet there seems to have been no systematic and scientific study of human death There have been more or less sporadic efforts to make such investigations in exceptional and interesting pathological cases But the regular order, so to speak, or the average manner of death is not known Some of the main reasons for such study are —

1 To gain trustworthy and general knowledge of what most often takes place in the dying hour, including details

2 To learn the manner of death for different diseases and the per cent of those conscious and unconscious

3 To find in what per cent of cases there is severe pain, slight pain, and no pain

4 To note details in exceptional and special cases and the causes of these phenomena and the length of dying time

5 To determine the characteristics and differences in dying between infants, children, adolescents, adults before middle life, during middle life, in old age, and from 80 to 100 years of age, including points under numbers 2, 3, and 4 for their ages

6 To present eventually a general picture of the dying time, based upon a sufficient number of observations, and with instruments of precision when possible

7 That with such knowledge the treatment of patients during the dying time may be more humane and delicately done

8 That in cases that are liable to be painful, proper precautions may be taken in advance, so that pain may be avoided or greatly lessened

9 That finally the knowledge of the dying time may be so increased that physical death will cease to be feared or dreaded by all persons, since through such knowledge pain may be practically eliminated and death may be made easy, gentle, and placid

I am myself seeking opportunity to make observation on cases of death, and I would consider it a great favour if any physician who makes observations and studies of cases during the dying time will send me a copy of his notes and results, for which due credit will be given when sufficient data are received to justify publication

I am, Sir, yours faithfully,
(Dr.) ARTHUR MACDONALD,

The Congressional Apartments, 100 E Capitol-street, Washington, D C

CHENOPODIUM FOR ANKYLOSTOMIASIS

To the Editor of THE LANCET

SIR,—Mr Paget's recent paper on the determination of the ascaridol content of oil of chenopodium, to which Messrs Burroughs Wellcome and Co call courteous attention in your issue of Sept 4th, shows that the constants laid down for that oil in the U S P are valueless unless the oil is a genuine one, since they can be reproduced by skilful adulteration, and, moreover, that the means advised in that Pharmacopœia for determining the ascaridol content are not effective in such an adulterated oil With a genuine oil, however, the old methods of estimating ascaridol, especially the specific gravity test, are shown to be fairly or actually accurate Accordingly if one may assume, as seems reasonable that the bulk of the oil used generally in anthelmintic work has been genuine the findings of Mr Paget's careful investigation authorise little misgiving in the continued use of the mass of information which has been accumulated in the tropics on the administration and effects of oil of chenopodium

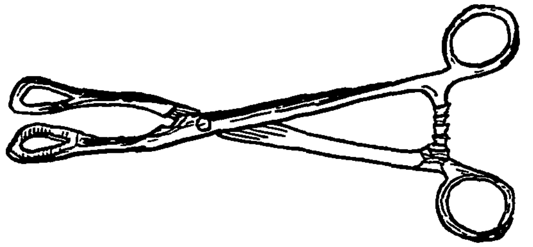
The letter under consideration raises a second point of equal practical importance Burroughs Wellcome and Co have produced an oil of chenopodium having an ascaridol content of 90 per cent and upwards In 1 2 c cm of this oil there is as much ascaridol as in about 1 8 c cm of an ordinary sample Put otherwise, to give 1 2 c cm of this preparation is equivalent to giving 1 8 c cm of an ordinary sample, while a dose of 1 5 c cm is equivalent to 2 25 c.cm In order to administer the ordinary dose of ascaridol, the dose of this particular oil must be only 0 8 c cm , a vital matter seeing how slight must sometimes be the margin between safety and anxiety in the case of ascaridol, equally with that of the other anthelmintics of which we have present knowledge

I am, Sir, yours faithfully,
Ealing, W , Sept 10th, 1926 CLAYTON LANE.

A PLEA FOR THE PERMANENT ABOLISHMENT OF THE "LINGUOTRITE"

To the Editor of THE LANCET.

SIR,—The "linguotrite" or tongue-crusher, is a brutal instrument which is still far too frequently found in the anæsthetist's tray of our hospitals up and down the country I am not implying that any professional anæsthetist would think of applying such an instrument to the tongue of his patient, but in the heat of the moment, when it suddenly becomes necessary to draw the tongue forward, as long as this contraption is at hand it will continue to be used by those whose duty it is to administer anæsthetics For weeks after its application the tongue is swollen and painful The bruising and subsequent inflammation constitutes a clinical entity—linguotritic glossitis I have observed several examples of this condition, which may be said to be the only omission from that masterpiece of surgical monographs, Butlin's "Diseases of the Tongue" The remedy is simple The linguotrite should be once and for all relegated to the dust-bin, and a pair of rational tongue forceps substituted



I am, Sir, yours faithfully,
Sept 10th, 1926 HAMILTON BAILEY

THE PATHOLOGICAL SERVICE OF THE GENERAL HOSPITAL

To the Editor of THE LANCET

SIR,—I entirely agree with Dr Powell White The pathologist has quite enough to put up with in competition with commercial, greater hospital, and university laboratories without having his own hospital interfering with his private work As to hospital paying a stipend and receiving rent (which would be practically impossible to assess) the hospital would be giving with one hand and receiving with the other, the pathologist remaining a paid servant, giving hospital cases precedence and possibly losing private work

I think the only satisfactory solution has been found here The hospital provides the laboratory and its equipment; the pathologist is a member of the honorary medical staff, and he practises as a specialist consultant in the strictest sense He also does a good deal of public health work, being paid according to an agreed scale of fees for each item He is his own master, he does not give preference to any case, hospital or private, he takes them as they come on their necessity. He certainly has to work very hard, and consulting specialist practice in the country is not brilliantly remunerative but he retains his self-respect and makes enough to live on with the ordinary decencies of life, although he cannot afford a car, which is not a professional necessity in his case.

I am, Sir, yours faithfully,
H ST ARNAUD AGATE

Pathological Department, General Infirmary,
Salisbury, Sept 9th, 1926

JUSTICE FOR HOMER BOSTWICK

To the Editor of THE LANCET.

SIR,—There has recently come into my hands an example of literary piracy of an extremely interesting type which, for historical and other reasons, I should like to comment upon The pirate was a Dr. Homer Bostwick, who practised in New York between 1840 and 1870 The victims were Philippe Ricord, the famous French syphilologist, and his London pupil, William Acton.

Briefly the facts are as follows · In 1848 there appeared a volume, "A Complete Practical Work on the Nature and Treatment of Venereal Diseases, and other Affections of the Genito-Urinary Organs of the Male and Female" by Homer Bostwick, M D New York Burgess Stringer and Co . 1848 Bostwick sent a copy to THE LANCET for review inscribed "Thomas Wakley J Henry Bennett With the respects of the author" It is this copy which is now in my possession The inscription, I think, is in the author's handwriting because Bennet's name is wrongly spelt Why a single copy should have been sent between two men is not very obvious Possibly it was economy Henry Bennet was obstetric physician to the Royal Free Hospital at the time wrote for many years on THE LANCET staff, and was a friend of the Wakley family. The copy contains a series of caustic pencilled notes in the margins, on which the review, to be presently commented upon was afterwards built Apparently this is the only copy of the work in London; and I think, it must have been sent to Acton as a curiosity of piracy after Wakley had finished with it Acton's library passed to Sir Alfred Cooper, formerly senior surgeon to the London Lock Hospital, and from Cooper's library it, with other books of Acton, came to me Probably after the castigation which it received in THE LANCET the book fell dead on the market. And yet, in spite of everything said and truly said, against it, re-reading it now, nearly 80 years after, with an unbiased mind, I have been much impressed by certain opinions expressed and statements made, which, unorthodox in their day have since been proved correct Bostwick may have been a pirate, but he was also an acute clinician; and it is in the hope that some reader may be able to supply details about this forgotten author that I wish to resurrect the matter

The review appeared in THE LANCET of 1849, vol 1, p 401 It begins —

> "We doubt, brother Jonathan if it was a smart trick in you to send us this book for review So long as it occupied the shelves of your publisher, in Broadway or was read in the repudiating States, the deception might have been undiscovered . . but with us your fine plumage cannot conceal your daw's carcass, for your book contains nothing good but what you have pillaged from this side of the Atlantic. . "

Imagine starting a review thus in these days! But at that time there was considerable irritation in England against the United States, because certain individual States had borrowed money for railway and other public services, and when the interest became due had repudiated responsibility, leaving the bond-holders high and dry. But why visit the sins of defaulting States on an unfortunate medical writer? Again I quote from the review :—

> "In looking over the American annals of literature, we must all be painfully struck with the injustice of United States men in seizing our best surgical works and reprinting them as soon as published, with what are called Notes by Dr This or Observations by Mr. That . Doubtless it is easier to steal a book than write one, even though it contain trash but we very much question if this dishonest system is likely to protect or foster native talent, any more than it will improve national morals or promote international respect and brotherly feeling"

Here the reviewer is giving vent to his indignation as a writer upon seeing literary property stolen before his eyes, and even now the United States remain the only great nation refusing to recognise international copyright, even though large sums of American money reach English authors.

Having thus pilloried the States, and the publishers' morals, the reviewer returns to Bostwick thus .—

> "It was, however, left for Dr Bostwick to outvie any of his countrymen in injustice to authors on this side of the Atlantic In a large, handsome quarto, with coloured plates, woodcuts, and bold type, he has, under his own name, published a book on Venereal Diseases, which, almost from beginning to end, has been plundered from the works of M Ricord and Mr Acton."

The great feature of the work, the profusion of coloured plates is thus dealt with .—

> "'Some of the drawings'" Bostwick says, "'I have borrowed from the great work of Ricord, others from Acton and some I have taken directly from life.'"

On this it is commented —

> "Whatever his 'returns' may be, his 'borrowings' have been pretty considerable We have looked into the works in question, and believe we can trace every coloured plate or woodcut (about 70 in number), except one to English or French treatises But our transatlantic daw, not content with this wholesale borrowing, as he calls it, has so maimed the descriptive history of the plates that it would be difficult for even the author . to recognise the production of his own pen."

The slating is justified I have gone over the plates of Ricord and Acton to verify this statement, and can confirm it The real deception is in the text opposite the plates These are quite accurately translated from the French, but wherever such a remark as "M Ricord prescribed," or names of places such as 'Paris" or 'Belgium" occur, these are left out, in order. as the reviewer remarks.

> "that the reader might suppose that the drawing is made by the author, and the case happened in his practice; the swindle is made more complete by neither artist's nor author's name being mentioned"

The fraud is quite obvious and yet, reading the book now. without prejudice, one is struck by its extraordinary lucidity, its broad sanity. its modern note. and its refusal to be intimidated by the authority of a great name. Anyone conversant with the history of syphilis will remember that John Hunter considered secondary syphilis was non-contagious, that Ricord maintained the same, and that owing to the authority of these great names the truth did not become generally recognised until about 1870 It is true Babington at the Lock Hospital disputed it, and that Dr. Wallace, of Dublin, published in THE LANCET (April 23rd, 1836, p 132) an account of how he inoculated five healthy persons with secondary syphilis and produced primary sores therefrom But no one seems to have believed him at the time Whether Bostwick was acquainted with Wallace's work is doubtful. but at any rate we find him vigorously maintaining in 1848 on pages 131 and 132 of his book, the present modern view.

All through my copy of the book are pencilled notes, as I have mentioned before, and certainly the author is ill treated, in view (it must be remembered

of what we now know Against a passage describing how some patients acquired syphilis by rubbing the legs of sufferers from periosteal nodes the note is—‘ Out-Herod's Herod ” Against a statement that syphilis of the lung may occur and simulate consumption is the comment “opposed to facts” Bostwick's explanation of Colles's Law (p 181) that the reason a syphilitic child cannot infect its mother is because she already has the disease herself is the earliest correct one known to me There is a curious story (p 211) of how the author produced gonorrhœa in two male patients by passing a bougie on them six weeks after he had used it on a case of acute gonorrhœa The bougie had been washed carefully and put aside, he says, but on examining it he found a small crack in which he surmised the “ virus ” had remained The remark of the reviewer on the margin is “ bosh ”

No one can complain of a reviewer whose opinions are the standard opinions of his time, but when the work dealt with is in front of that time the situation is a hard one At any rate, true views ought to be credited to their author when they have been confirmed later, and Bostwick seems to have been something of a pioneer

What position he held amongst his contemporaries it is difficult to discover He is responsible for three books (1) One on “ Seminal Diseases,” the second edition of which was reviewed slightingly in The Lancet, 1849, vol i, p 97. (2) The work on syphilis, &c, on which we have been commenting, 1848 (3) A curious brochure entitled, “ An enquiry in the cause of natural death, or death from old age Developing a new and certain method of preventing the consolidation or ossification of the body, and of thus indefinitely prolonging vigorous, elastic, and buoyant health, and of rendering parturition easy and safe ” 8vo, pp 152 N Y Stringer and Townsend, 1851. Nothing then appears to have come from his pen until 1871, when he started a journal ‘ Bostwick's Medical and Surgical Journal,” Nos 1 and 2, January, February, 1871 Only two issues were published Probably he died somewhere about this time Perhaps some American reader can supply further details

I am, Sir, yours faithfully,
J. Johnston Abraham

Harley street, W, Sept 13th, 1926

REGISTERED NURSES' BUREAU

To the Editor of The Lancet

Sir —May I be allowed to draw the attention of my professional colleagues to the fact that the R N B (which is not being run for profit) is in a position to send to them any kind of nurse desired from its staff which is now thoroughly organised, and to express the hope that they will endorse and support this effort to *protect* the nurse (in eliminating for her the heavy weekly commission she has hitherto had to pay upon her fees) by applying to it when requiring nurses

I am glad to be able to assure my colleagues that the R N B is thoroughly organised on excellent business as well as strictly professional lines, and embraces every nursing activity and requirement in surgery and medicine It has the endorsement of leading members of both professions, including members of the General Nursing Council and of the Council of the College of Nursing Its professional side is entirely in the hands of specially chosen trained State-registered nurses, to whom alone a practitioner telephoning gives his instructions The address is 55, Chancery-lane, and the telephone is Holborn 0846

I am, Sir, yours faithfully,
W Arbuthnot Lane,
Chairman, Honorary Advisory Committee

Cavendish square, W, Sept 13th, 1926

Obituary.

HERBERT WILLIAM PAGE, M Ch Camb, F R C S Eng,

CONSULTING SURGEON, ST. MARY'S HOSPITAL, LONDON

We regret to announce the death of Mr Herbert William Page, consulting surgeon to St Mary's Hospital, which occurred at Sedgecombe House, Farnham, his home in the country, on Sept 9th, in his 81st year He had for a considerable period retired from active practice as a consulting surgeon, when he was famous as an expert in the difficult pathological field of railway injury

Herbert William Page was born in 1845, the son of a well-known practitioner in Carlisle, William Bousfield Page, and was educated in Edinburgh and later at Christ's College, Cambridge At Cambridge he graduated in Arts, his medical education being at the London Hospital The staff at “ the London ” at that time included three particularly great men—Hughlings Jackson and Gawen Sutton were the lecturers on pathology and morbid anatomy, while Jonathan Hutchinson was a senior on the surgical side The influence which these learned men and inspiring teachers had upon Page is illustrated by the fact that although he decided early to follow the career of a consulting surgeon, in all his institutional and public and private work he displayed general familiarity with the problems of medicine In 1870 he graduated M B at Cambridge, and almost immediately obtained a commission in the German Army on the outbreak of the Franco-Prussian War. He served as a surgeon through the war, and on his return to England he joined his father for a short time in practice at Carlisle, but it was not long before he made up his mind to return to London and the practice of surgery He took the F R C S Eng and made his start as surgical registrar to his old hospital He was elected assistant surgeon at St Mary's Hospital in 1876 and served on the staff of the hospital for the full term of 30 years as surgeon and teacher when he was elected consulting surgeon

Mr. H. W Page

Page's surgery was marked by an earnest conscientiousness and by an almost meticulous attention to detail He was the first surgeon at St Mary's to rely on instruments and dressings sterilised by heat rather than by antiseptics, and while he was essentially conservative, he was not reactionary, indeed, in 1887 he performed for the first time at his hospital the operation of gastro-enterostomy The patient was a man of 48 who had suffered from malignant obstruction of the pylorus for several months, the operation gave him much relief and he lived in comparative comfort for 72 days In a paper read to the Royal Medical and Chirurgical Society 18 months later Page reviewed the results of 38 cases in which the operation had been done, and pleaded for its more common use in this country. It was, he said, an operation distinctly justifiable and to be recommended, for it was capable of bringing relief to the distressing symptoms incidental to pyloric obstruction and was thereby in all probability the means of prolonging life Forty years ago such arguments were really advanced

'To the average student," writes one of Page's intimate colleagues, "Page was not an attractive teacher His formal lectures were scholarly and profound and were expressed in the most polished English, but they lacked those dramatic qualities which endow dull facts with life. He was seen at his best in an informal clinical lecture, usually prepared for the purpose of demonstrating certain cases in the wards Models of clear thinking and of lucid exposition many of these lectures remained in the memories of those who heard them, to be applied years afterwards to the elucidation of similar problems In 1897 he collected 12 of these lectures and published them under the title of 'Clinical Papers on Surgical Subjects' a little book which can still be read with advantage by even the youngest He possessed to a degree, vouchsafed to few, the power of speech A wonderful choice of words a clear diction and a melodious voice gave to his speeches a distinction which was still further enhanced by his clarity of thought and by a touch of whimsical humour. A speech from Page decorated any occasion, however prosaic, and translated it at once from the common-place. The possession of these qualities combined with his intimate knowledge of the subject, rendered him an invaluable witness at a time when the railway companies considered it necessary to contest excessive claims against them for damages as the result of accidents The legal opinion of Page as an expert witness cannot better be illustrated than by quoting the shorthand writer's notes of Lord Chief Justice Coleridge's summing up in the case of Milsom v the L & N W Rly Co, 1879

> "This I will say that whereas it is most difficult very often to follow the reasons and to apply the ordinary rules of common sense to the evidence given by Dr R and Mr G I do not think any man of the most ordinary common sense would have the least difficulty in following the evidence of Mr Page and in ascertaining exactly and definitely what Mr Page meant to say. Whether you believe Mr Page is another matter, but he is such a comprehensible and intelligible witness as I very seldom have heard in the witness box. A child might understand him, and he gave his evidence with lucidity and firmness Of course it is in your hands, of course it is for you to say whether you believe him or not, but as far as one could judge, a more cool and intelligent man a person who seemed to estimate the value of the words he is using it has seldom been my good fortune to see before a judge and jury"

"Page's character was distinguished by the simplicity of true greatness He was singularly direct, incapable of any finesse and often embarrassingly frank His reserve almost amounted to shyness and he shrank from anything approaching publicity or advertisement He had a great capacity for friendship and his loyalty to his old friends many of whom dated from his student days was a source to him of some distress as he outlived so many To those who remain and who have enjoyed the charming intimacy of his friendship his loss is irreparable"

To return to Page's interest in railway injuries—shortly after his connexion with St Mary's Hospital he was appointed surgeon to two great railways—the London and North-Western and the Great Western—and this occurred at a time when the after-results of railway accidents were exercising very much the public mind, and when medical opinions on the subject were widely sought in the law courts. It is true that the time had gone by when universal medical support could be found for the beliefs prevalent 20 years before, that the physical conditions of the public were suffering ominously as the result of the development of railway travelling. As far back as 1862 there had appeared in THE LANCET the results of a detailed inquiry into the influence of railway travelling on public health, in which the Great Northern Railway and the Great Western Railway, among others, were two of the lines inspected from this standpoint; the conclusions of this inquiry did much to remove apprehensions with regard to huge and mysterious physiological damage dependent upon alterations of atmospheric pressure, upon the great pace of transit and so on, but the sequelæ of actual accidents occurring to certain patients remained unexplained Some four years later Erichsen wrote a work on Concussion of the Spine, the condition identified by him as of occurrence in railway accidents in particular and his views were accepted by the medical profession though with some reserve, certain cases for compensation suggesting that Erichsen's views had conferred the appearance of physical reality upon imaginary things The medical profession was divided in view despite the apparent acquiescence in the attitude of a great leader, and Page came to play a leading part in the matter. In 1881 the subject for the Boylston prize of the University of Harvard was 'Injuries of the back without apparent mechanical lesions, in their surgical and medico-legal aspects" This prize Page won for an essay founded upon his personal experience as surgeon to two great railways, and the essay, enlarged and somewhat altered in title, became the first edition of his well-known work on the subject of railway injuries The book was an immediate success In it there were tabulated a series of cases of railway injury which, on the one hand presented much the clinical picture which had already been drawn by Erichsen, and in which, on the other hand no evidence satisfactory to Page could be found of any injury whatever to the spinal cord or its membranes. He was able to account for many of the symptoms, which had been regarded as of a particularly malign character, inasmuch as they illustrated degeneration of the spinal cord, as the expression of traumatism to bones or muscles and having no such sinister expectations he consequently came into conflict with Erichsen's followers who had evolved for the condition, named Concussion of the Spine, a complete pathology. Page's conflict with Erichsen's views was openly expressed, and as those views were the ones generally adopted by medical witnesses in cases for damage, the expression of his convictions required courage Page spoke openly; he was even reproved for his uncompromising attitude towards his seniors and he prevailed, how completely will be seen by anyone who consults the surgical manuals of the eighties and compares them with those a few years later From this time forward Page was recognised as an authority on railway injuries, and the part played by traumatic neurasthenia in the symptoms following accidents by rail was generally accepted His position regarding "railway spine" was That it was a mental condition caused partly by the pain due to a definite injury to ligamentous and muscular structures of the spinal column, and partly by the apprehension of the unknown consequences which might flow from this He held that the condition was maintained and augmented by auto-suggestion and by the fear that all this suffering would not be sufficiently compensated He was careful not to use the word malingering His conception displaced the view that the symptoms of which the sufferers complained were due to a "Concussion of the spinal

cord ” analogous to the condition known as “ Concussion of the brain ” This work gained Page the unusual distinction for a surgeon of the Presidency of the Neurological Society

At the Royal College of Surgeons of England he was elected a member of the Council in 1899 and served on that body for eight years, and for the same period he was a member of the Court of Examiners He was also an examiner in surgery at the Universities of Cambridge, Oxford, and Birmingham, and in the discharge of these duties he displayed the qualities of accuracy and sound judgment that marked his surgical work He retired from practice 20 years ago, which is a long period when a professional career is under consideration, but he will be remembered for those qualities by those who came into contact with him as colleague or teacher

He married first a daughter of the Rev Christopher Parker, by whom he had two daughters, and secondly Kathleen, daughter of the Rev Canon Houghton, who survives him.

THE LATE DR E I BOSTOCK —Dr Edward Ingram Bostock, who died at Horsham on Sept 4th in his eighty-third year, was a son of the late Dr J S Bostock He studied medicine at St Bartholomew's Hospital, and soon after qualifying, in 1864, joined his father in practice at Horsham As a practitioner Dr Bostock was keen and sympathetic, and his diagnostic ability won the implicit confidence of his patients When visiting he used to drive round in a high carriage with large yellow-painted wheels, and his practice covered a large area in North Sussex. Nevertheless, he found time to take an active interest in parochial matters for over 40 years He was one of the original members of the West Sussex County Council, and a Justice of the Peace, in his early days he was identified with the Volunteer movement All his six sons served in the Army during the war, and three were killed in action Dr Bostock's health gradually declined after the death of his wife in 1921, but he remained a well-known figure in Horsham, and there was a large gathering at his funeral to show the respect in which he was held

THE LATE DR J H TONKING —After attending to his practice as usual on the day before, Dr John Herbert Tonking was found on Sept 4th to have died in his sleep He was 62 years of age, and was the son of the late Mr C H Tonking, for many years chemist at Camborne Educated at Ford's School, Camborne, he served as apprentice to a local doctor before going to London for his medical studies After taking the conjoint qualification in 1886 he became house surgeon at St Thomas's Hospital, and two years later graduated as M B in the University of London Thirty-nine years ago he went back to his native town, where his services came to be greatly valued He was consulting surgeon to St Michael's Hospital, Hayle, and to Helston Cottage Hospital, and held a number of other local appointments Besides articles in medical journals he submitted a Note on the Tubercular Nature of the Final Stage of Miners' Phthisis to the Royal Commission set up to inquire into the mortality of Cornish miners Dr Tonking had three children His elder son was killed in France during the war, and his daughter died recently He leaves a widow

---

EGYPTIAN SCHOOL OF MEDICINE —The Egyptian Government has decided not to go on with its plan to build a new school of medicine with a hospital at Abbassia, and announces its intention to revert to the original scheme for building on the Manial Roda Island site, as recommended by an expert commission in 1919

THE FUTURE OF VOLUNTARY HOSPITALS —In a speech at the mayoral lunch when Princess Mary laid the foundation-stone of the new infirmary buildings at Harrogate, Sir Berkeley Moynihan expressed the opinion that in all hospitals there must be established paying beds and paying wards He believed that in the future, even the richest people “ would look upon it as their duty, certainly their need, to have hospital treatment ” In America and Canada hospital treatment was “ far better than anything even the richest of private patients could get in ordinary circumstances to-day ” He added that the old tradition of hospital construction would have to be broken, and that there is now “ a great opportunity for somebody to devise a new kind of hospital which will be cheap, easily capable of extension upon the original plan, and from the professional point of view of even greater efficiency than the old hospitals ”

Medical News.

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION —This association held a council meeting in Prague on August 26th and 29th. Lady Barrett, the President, took the chair, and reports of the activities of the various national associations were presented by the respective national corresponding secretaries The most recently formed association is that of Hungary, and Hungarian delegates attended the meeting for the first time In addition to the other business of the council, medical meetings were held, at which papers were communicated on (1) Tuberculosis and Pregnancy and (2) Women as Police Surgeons Representatives from the Czecho-Slovak Ministry of Health attended these, and took a prominent part in the discussions, a full report of which will be published in the next number of the *Medical Women's International Journal* The President gave a dinner to the delegates on the night preceding the council, at which she welcomed the Lord Mayor of Prague and other officials The association was also fortunate in having been invited to hold all its meetings in the old Town Hall. The Lord Mayor and town councillors received the delegates and entertained them at luncheon and the State railways and Ministry of Health arranged a full programme, granting facilities to the delegates to visit various spas, hospitals, and institutions

WEEKLY CONTRIBUTIONS AT OXFORD —The governors of the Radcliffe Infirmary at Oxford report that the weekly contribution scheme has been a brilliant success During the last financial year it brought in £25,400, or 60 per cent of the total income

POST-GRADUATE COURSES IN VIENNA —In our issue of Sept 4th (p 519) a note was published on courses given by the Medical Faculty at Vienna The address at which application may be made to the Secretary of the Post-graduate Medical Courses should have been given as Schlösselgasse 22, Vienna VIII, and not Schlösselgasse 32

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.—The winter session will be formally opened on Friday, Oct 1st, at 2 30 P M., when the introductory address will be given by Sir Humphry Rolleston, Regius Professor of Physic in the University of Cambridge The annual dinner of past and present students will be held on the same day at 7 for 7 30 P M at the Criterion Restaurant, Piccadilly Dr Frank H Jacob will take the chair

LONDON HOSPITAL: CHILDREN'S DEPARTMENT —The quarterly report of the house committee states that the reorganised children's out-patient department, which is being financed by the East-End Tradesmen's Association, started work on July 15th It is intended that the department shall act as a consultative centre and for the treatment of more difficult cases The demands upon it have increased so rapidly that the days of opening have already had to be increased from two to three a week

NORTHERN INFIRMARY, INVERNESS —Towards the £100,000 required for the reconstruction and enlargement £40,000 has been received or promised and the directors intend to begin the work so soon as £50,000 is available They state that the enormous increase in the number of motorists, with the consequent danger of accidents, has made enlargement imperative “ at the earliest possible moment ” A number of owners and tenants of grouse moors have sent the proceeds of their sales of game to the infirmary

DISCOVERY OF HOSPITAL RECORDS —Upon clearing out the roof of the Royal Hampshire County Hospital at Winchester two portraits in oil, a commemorative armorial tablet and the first minute-book of the court of governors were discovered One of the portraits represents the Rev Dr Alured Clarke, the founder of the hospital, dated 1736 The other was that of Alderman Edward Taunton, of Southampton, whose connexion with the institution is being investigated The minute-book is also dated 1736 The armorial tablet records that, in 1760, Colonel Narbonne Berkeley fitted up the board room at his own expense

DONATIONS AND BEQUESTS —The late Sir John Williams, Bart, who left estate of the gross value of £123,742, with net personalty £121,012, bequeathed £2000 to University College Hospital, London, and £1550 and any of his books, pictures, MSS, &c, they may select to the National Library of Wales The residue of the property which, after other bequests to servants, will amount to nearly £100,000 is to be divided between the National

Library of Wales and the University College of Wales, Aberystwyth —The late Sir Frederick W Mott left estate of the gross value of £22,211, with net personality £16,862 After a small personal bequest he left the residue of the property, subject to certain trusts, failing which, with remainder to the University of London for the endowment or partial endowment of a Professorship of Psychological Medicine "at my Alma Mater," the Medical School of University College Hospital, stating that he did not wish the professorship to be founded until there should be sufficient accommodation for the study and treatment of early cases of mental disorder either in wards in University College Hospital or in an affiliated mental hospital —Mr R B Sharp and Mr F B Sharp, of the firm of John Sharp and Sons, jute spinners, Dundee, have made a gift of £30,000 to the Dundee Royal Infirmary for the purpose of building and equipping a new maternity hospital —Mr Charles W Bell-Raisbeck, M A., assistant master of Cheltenham College, besides many other institutional and other bequests, left £1000 to the Cheltenham General Hospital —From the residue of the property of Mr Harry Watson, of Bath, the Cottage Hospital, Whitby, Yorks, will receive about £850 the Royal United Hospital, Bath, the British Hospital, Buenos Aires, St Dunstan's Home for the Blind, the Royal Hospital for Incurables, Putney, and Dr Barnardo's Homes, each, will receive about £560 —Miss Alice Wild of Oldham, left £1000 to Oldham Royal Infirmary and £500 to Henshaw's Blue Coat School —Mr Frederick Thomas Alton, of Stamford, Lincolnshire, a pawnbroker, left estate of the gross value of £57,852 The testator, after bequests amounting to about £16,000, left the residue of his property to accumulate during the longest period allowed by law, but not later than the year 2000, and then the capital and accumulated interest to be divided equally between the Manchester Infirmary, the Gloucester Infirmary, Guy's Hospital, and St Thomas's Hospital, London, and the British and Foreign Bible Society

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED SEPT 4TH, 1926

Notifications —The following cases of infectious disease were notified during the week —Small-pox, 79 (last week 90), scarlet fever, 1260, diphtheria, 716, enteric fever, 71, pneumonia, 395, plague, 2, puerperal fever, 44, cerebrospinal fever, 4, acute poliomyelitis, 41, acute polioencephalitis, 2, encephalitis lethargica, 29, dysentery, 8, ophthalmia neonatorum, 107 There were no cases of cholera or typhus fever notified during the week. The 2 cases of plague, as mentioned in our news columns last week, were notified from Liverpool

Deaths —In the aggregate of great towns, including London, there were no deaths from small-pox, 3 (2) from enteric fever, 6 (0) from measles, 6 (4) from scarlet fever, 27 (4) from whooping-cough, 30 (5) from diphtheria, 161 (33) from diarrhœa and enteritis under two years, and 19 (3) from influenza The returns from diarrhœa and enteritis again show a moderate rise, but have by no means reached the figures of the corresponding week a year ago The figures in parentheses are those for London itself

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn road, W C.
A Preliminary Course of Six Lectures on the Methods of Examination and Diagnosis commenced on Sept 15th
An Intensive Course of Lectures and Operative Surgery commences on Oct 4th
Full syllabus on application to the Dean

POST-GRADUATE HOSTEL, Imperial Hotel, Russell square, W C
TUESDAY, Sept 21st.—9 P M, Prof J E S Frazer will open a Discussion on Some Clinical Bearings of Embryology
WEDNESDAY —9 P M, Sir Squire Sprigge will open a Discussion on Medical Communications to the Lay Press
FRIDAY —9 P M, Dr Langdon Brown will open a Discussion on The General Effect of the Sympathetic in Disease
All medical practitioners are cordially invited

Appointments.

HARDIE, D, M B, Ch B Glasg, has been appointed Assistant Ophthalmic Surgeon to the Royal Infirmary, Aberdeen

Queen Charlotte's Maternity Hospital REID, J K, M.B, Ch B Edin, Senior Resident Medical Officer CLEMMEY, A. V, M B, Ch B, Assistant Resident Medical Officer PROSSER, L J, M B, Ch B Manch, District Resident Medical Officer

Vacancies.

For further information refer to the advertisement columns

Bristol General Hospital —Sen Res M O £200
Bristol Royal Infirmary —Asst P in charge of Ante natal Dept
Cancer Hospital, Fulham road, S W —Clin Asst £250
Cardiff, Prince of Wales Hospital —H S £100
Central London Ophthalmic Hospital, Judd street St Pancras, W C —Sen and Jun H S 's At rate of £100 and £50 respectively
Dewsbury and District General Infirmary —H S £200
Dominica, British West Indies —M O H £1000
Evelina Hospital for Children, Southwark, S E —H P £120
Grosvenor Hospital for Women, Vincent square, S W —Hon Reg
Hôpital Français, 172, Shaftesbury avenue, W C —Sen and Jun Res M.O 's £120 and £100 respectively Also Surg to In patients and Surg to Out-patients
Hospital for Consumption and Diseases of the Chest, Brompton, S W —Asst Res M O At rate of £150
Hospital for Epilepsy and Paralysis, Maida Vale W —Res M O and H P At rate of £150 and £100 respectively
Hospital for Sick Children Great Ormond street, W C —H S, H P, and Asst Cas O Each at rate of £50
Hull Royal Infirmary —Cas H S At rate of £130
King's College Hospital, Denmark hill S E —Clin Assts, Med and Surg O 's &c
Lancashire Asylums Board —Pathologist £1000
Lincoln County Hospital —Jun H S At rate of £150
Miller General Hospital for South-East London, Greenwich-road S E —H P £125
Prince of Wales's General Hospital, Tottenham, N —Two H S 's and H P Each at rate of £120 Also Jun. H S and Jun H P At rate of £90 each
Royal London Ophthalmic Hospital, City-road, E C —Asst S
Royal Northern Hospital, Holloway N —Obstet H S Also H S Each at rate of £70
St Mary's Hospital for Women and Children, Plaistow, E —Hon Asst P Also Clin Asst
Salford City —Bacteriologist £600
Salford Royal Hospital —Radiologist £300
Samaritan Free Hospital for Women, Marylebone road, N W —H S At rate of £100
Sheffield Royal Hospital —Vacancies on Res Med and Surg Staff At rate of £80
South London Hospital for Women, South Side, Clapham Common S W —H P and three H S 's Each at rate of £50 Also Clin Asst £1 1s per attendance
Stoke on-Trent North Staffordshire Royal Infirmary —H S £150
Swansea County Borough —Asst M O £600
The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Castleton, Derbyshire

Births, Marriages, and Deaths.

BIRTHS

CLARK —On Sept 7th, at Walker street, Edinburgh, the wife of Alfred J Clark, M.D, of a son.

FOULKES —On Sept 3rd, to Mary G Foulkes, M R C S, L R.C P, the wife of R K Foulkes, M.B, B S, of 6, Barnfield crescent, Exeter—a daughter

HOOPER —On Sept 6th, at the City Mental Hospital, Fulford, York, the wife of Reginald Hooper, M B, of a daughter

KILNER —On Sept 8th, at Abbotsford, Mostyn avenue, Llandudno the wife of S D Kilner M D, of a daughter

ROSS —On Sept 8th, at the Avenue Nursing Home Cheam, the wife of J N MacBean Ross, *M C*, M D, F R C S, of Worcester House, Sutton, Surrey, of a son

MARRIAGES

FAIRBAIRN—MORE GORDON —On Sept 11th, at Old St Paul's Church Edinburgh, William Ronald Dodds Fairbairn M.A, M.B Ch B, Dipl Psych. Edin, to Mary Ann, only daughter of the late Mr Harry More Gordon, of Charleton and Kinnaber, Forfarshire, and Mrs More Gordon, Albert-terraace, Edinburgh

MESSER—DELVES —On Sept 9th, at the Parish Church, Long Preston Yorkshire, William Messer M.B, to Catherine Monica Mary daughter of the late Thomas Hirst Delves, and of Mrs Delves, Lochinvar, Long Preston

DEATHS

BURKITT —On Sept 7th at a nursing home in London after an operation William Arthur Handcock Burkitt M D of Goulburn New South Wales, Australia aged 63

N.B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages and Deaths cord " analogous to the condition known as " Concussion of the brain " This work gained Page the unusual distinction for a surgeon of the Presidency of the Neurological Society

At the Royal College of Surgeons of England he was elected a member of the Council in 1899 and served on that body for eight years, and for the same period he was a member of the Court of Examiners He was also an examiner in surgery at the Universities of Cambridge. Oxford, and Birmingham, and in the discharge of these duties he displayed the qualities of accuracy and sound judgment that marked his surgical work He retired from practice 20 years ago, which is a long period when a professional career is under consideration, but he will be remembered for those qualities by those who came into contact with him as colleague or teacher

He married first a daughter of the Rev Christopher Parker, by whom he had two daughters, and secondly Kathleen, daughter of the Rev Canon Houghton, who survives him

THE LATE DR E I BOSTOCK —Dr Edward Ingram Bostock, who died at Horsham on Sept 4th in his eighty-third year, was a son of the late Dr J S Bostock He studied medicine at St Bartholomew's Hospital, and soon after qualifying, in 1864, joined his father in practice at Horsham As a practitioner Dr Bostock was keen and sympathetic, and his diagnostic ability won the implicit confidence of his patients When visiting he used to drive round in a high carriage with large yellow-painted wheels, and his practice covered a large area in North Sussex. Nevertheless, he found time to take an active interest in parochial matters for over 40 years He was one of the original members of the West Sussex County Council, and a Justice of the Peace, in his early days he was identified with the Volunteer movement All his six sons served in the Army during the war, and three were killed in action Dr Bostock's health gradually declined after the death of his wife in 1921, but he remained a well-known figure in Horsham, and there was a large gathering at his funeral to show the respect in which he was held

THE LATE DR J H TONKING —After attending to his practice as usual on the day before, Dr John Herbert Tonking was found on Sept 4th to have died in his sleep He was 62 years of age, and was the son of the late Mr C H Tonking, for many years chemist at Camborne Educated at Ford's School, Camborne, he served as apprentice to a local doctor before going to London for his medical studies After taking the conjoint qualification in 1886 he became house surgeon at St Thomas's Hospital, and two years later graduated as M B in the University of London Thirty-nine years ago he went back to his native town, where his services came to be greatly valued He was consulting surgeon to St Michael's Hospital, Hayle, and to Helston Cottage Hospital, and held a number of other local appointments Besides articles in medical journals he submitted a Note on the Tubercular Nature of the Final Stage of Miners' Phthisis to the Royal Commission set up to inquire into the mortality of Cornish miners Dr Tonking had three children His elder son was killed in France during the war, and his daughter died recently He leaves a widow

---

EGYPTIAN SCHOOL OF MEDICINE —The Egyptian Government has decided not to go on with its plan to build a new school of medicine with a hospital at Abbassia, and announces its intention to revert to the original scheme for building on the Manial Roda Island site, as recommended by an expert commission in 1919

THE FUTURE OF VOLUNTARY HOSPITALS —In a speech at the mayoral lunch, when Princess Mary laid the foundation-stone of the new infirmary buildings at Harrogate, Sir Berkeley Moynihan expressed the opinion that in all hospitals there must be established paying beds and paying wards He believed that in the future, even the richest people " would look upon it as their duty, certainly their need, to have hospital treatment " In America and Canada hospital treatment was " far better than anything even the richest of private patients could get in ordinary circumstances to-day " He added that the old tradition of hospital construction would have to be broken, and that there is now " a great opportunity for somebody to devise a new kind of hospital which will be cheap, easily capable of extension upon the original plan, and from the professional point of view of even greater efficiency than the old hospitals "

Medical News.

MEDICAL WOMEN'S INTERNATIONAL ASSOCIATION —This association held a council meeting in Prague on August 26th and 29th Lady Barrett, the President, took the chair, and reports of the activities of the various national associations were presented by the respective national corresponding secretaries The most recently formed association is that of Hungary, and Hungarian delegates attended the meeting for the first time In addition to the other business of the council, medical meetings were held at which papers were communicated on (1) Tuberculosis and Pregnancy and (2) Women as Police Surgeons Representatives from the Czecho-Slovak Ministry of Health attended these, and took a prominent part in the discussions a full report of which will be published in the next number of the *Medical Women's International Journal* The President gave a dinner to the delegates on the night preceding the council, at which she welcomed the Lord Mayor of Prague and other officials The association was also fortunate in having been invited to hold all its meetings in the old Town Hall The Lord Mayor and town councillors received the delegates and entertained them at luncheon and the State railways and Ministry of Health arranged a full programme, granting facilities to the delegates to visit various spas, hospitals, and institutions

WEEKLY CONTRIBUTIONS AT OXFORD — The governors of the Radcliffe Infirmary at Oxford report that the weekly contribution scheme has been a brilliant success During the last financial year it brought in £25,400, or 60 per cent of the total income

POST-GRADUATE COURSES IN VIENNA —In our issue of Sept 4th (p 519) a note was published on courses given by the Medical Faculty at Vienna The address at which application may be made to the Secretary of the Post-graduate Medical Courses should have been given as Schlösselgasse 22, Vienna VIII, and not Schlösselgasse 32

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.—The winter session will be formally opened on Friday, Oct 1st, at 2 30 P M, when the introductory address will be given by Sir Humphry Rolleston, Regius Professor of Physic in the University of Cambridge The annual dinner of past and present students will be held on the same day at 7 for 7 30 P M at the Criterion Restaurant, Piccadilly Dr Frank H Jacob will take the chair

LONDON HOSPITAL CHILDREN'S DEPARTMENT —The quarterly report of the house committee states that the reorganised children's out-patient department, which is being financed by the East-End Tradesmen's Association, started work on July 15th It is intended that the department shall act as a consultative centre and for the treatment of more difficult cases The demands upon it have increased so rapidly that the days of opening have already had to be increased from two to three a week

NORTHERN INFIRMARY, INVERNESS —Towards the £100,000 required for the reconstruction and enlargement £40,000 has been received or promised and the directors intend to begin the work so soon as £50,000 is available They state that the enormous increase in the number of motorists, with the consequent danger of accidents, has made enlargement imperative " at the earliest possible moment " A number of owners and tenants of grouse moors have sent the proceeds of their sales of game to the infirmary

DISCOVERY OF HOSPITAL RECORDS —Upon clearing out the roof of the Royal Hampshire County Hospital at Winchester two portraits in oil a commemorative armorial tablet and the first minute-book of the court of governors were discovered One of the portraits represents the Rev Dr Alured Clarke, the founder of the hospital, dated 1736 The other was that of Alderman Edward Taunton, of Southampton, whose connexion with the institution is being investigated The minute-book is also dated 1730 The armorial tablet records that, in 1760, Colonel Narbonne Berkeley fitted up the board room at his own expense

DONATIONS AND BEQUESTS —The late Sir John Williams, Bart, who left estate of the gross value of £123,742, with net personality £121,012, bequeathed £2000 to University College Hospital, London, and £1550 and any of his books, pictures MSS, &c, they may select to the National Library of Wales The residue of the property which, after other bequests to servants, will amount to nearly £100,000 is to be divided between the National

Library of Wales and the University College of Wales, Aberystwyth.—The late Sir Frederick W Mott left estate of the gross value of £22 241 with net personalty £16,862 After a small personal bequest he left the residue of the property, subject to certain trusts, failing which with remainder to the University of London for the endowment or partial endowment of a Professorship of Psychological Medicine "at my Alma Mater," the Medical School of University College Hospital stating that he did not wish the professorship to be founded until there should be sufficient accommodation for the study and treatment of early cases of mental disorder either in wards in University College Hospital or in an affiliated mental hospital —Mr R. B Sharp and Mr F B Sharp of the firm of John Sharp and Sons, jute spinners Dundee, have made a gift of £30 000 to the Dundee Royal Infirmary for the purpose of building and equipping a new maternity hospital —Mr Charles W Bell Raisbeck M.A., assistant master of Cheltenham College, besides many other institutional and other bequests left £1000 to the Cheltenham General Hospital —From the residue of the property of Mr Harry Watson of Bath, the Cottage Hospital, Whitby Yorks will receive about £850 the Royal United Hospital Bath, the British Hospital, Buenos Aires, St Dunstan's Home for the Blind, the Royal Hospital for Incurables, Putney and Dr Barnardo's Homes, each will receive about £560 —Miss Alice Wild of Oldham left £1000 to Oldham Royal Infirmary and £500 to Henshaw's Blue Coat School —Mr Frederick Thomas Alton, of Stamford Lincolnshire, a pawnbroker, left estate of the gross value of £57,852 The testator, after bequests amounting to about £16,000, left the residue of his property to accumulate during the longest period allowed by law, but not later than the year 2000, and then the capital and accumulated interest to be divided equally between the Manchester Infirmary, the Gloucester Infirmary Guy's Hospital, and St. Thomas's Hospital, London, and the British and Foreign Bible Society

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED SEPT 4TH, 1926

Notifications —The following cases of infectious disease were notified during the week —Small-pox, 79 (last week 90), scarlet fever, 1260 , diphtheria 716 enteric fever, 71 , pneumonia, 395 , plague, 2 , puerperal fever, 44 ; cerebrospinal fever, 4 , acute poliomyelitis, 41 , acute polio-encephalitis, 2 , encephalitis lethargica, 29 , dysentery, 8 , ophthalmia neonatorum, 107 There were no cases of cholera or typhus fever notified during the week. The 2 cases of plague, as mentioned in our news columns last week, were notified from Liverpool

Deaths —In the aggregate of great towns, including London, there were no deaths from small-pox, 3 (2) from enteric fever, 6 (0) from measles, 6 (4) from scarlet fever, 27 (4) from whooping-cough, 30 (5) from diphtheria. 161 (33) from diarrhœa and enteritis under two years, and 19 (3) from influenza. The returns from diarrhœa and enteritis again show a moderate rise, but have by no means reached the figures of the corresponding week a year ago The figures in parentheses are those for London itself

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL Gray's Inn road W C

A Preliminary Course of Six Lectures on the Methods of Examination and Diagnosis commenced on Sept 15th.

An Intensive Course of Lectures and Operative Surgery commences on Oct 4th.

Full syllabus on application to the Dean

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square, W C

TUESDAY, Sept 21st.—9 P M Prof. J E S Frazer will open a Discussion on Some Clinical Bearings of Embryology

WEDNESDAY —9 P M , Sir Squire Sprigge will open a Discussion on Medical Communications to the Lay Press

FRIDAY —9 P M Dr Langdon Brown will open a Discussion on The General Effect of the Sympathetic in Disease All medical practitioners are cordially invited

Appointments.

HARDIE, D M B , Ch.B Glasg , has been appointed Assistant Ophthalmic Surgeon to the Royal Infirmary, Aberdeen

Queen Charlotte's Maternity Hospital REID, J K., M.B , Ch B Edin., Senior Resident Medical Officer CLEMMEY, A. V , M.B , Ch B Assistant Resident Medical Officer PROSSER, L J , M.B Ch B Manch , District Resident Medical Officer

Vacancies.

For further information refer to the advertisement columns

Bristol General Hospital —Sen Res M.O £200

Bristol Royal Infirmary —Asst P in charge of Ante-natal Dept

Cancer Hospital Fulham road, S W —Clin Asst. £250

Cardiff, Prince of Wales Hospital —H S £100

Central London Ophthalmic Hospital, Judd street St Pancras W C —Sen and Jun. H S s At rate of £100 and £50 respectively

Dewsbury and District General Infirmary —H S £200

Dominica British West Indies —M O H £1000

Evelina Hospital for Children Southwark S E —H.P £120

Grosvenor Hospital for Women, Vincent square, S W.—Hon. Reg

Hôpital Français, 172 Shaftesbury-avenue, W C —Sen. and Jun. Res M.O s £120 and £100 respectively Also Surg to In patients and Surg to Out-patients

Hospital for Consumption and Diseases of the Chest, Brompton, S W —Asst Res M.O At rate of £150

Hospital for Epilepsy and Paralysis Maida Vale, W —Res M.O and H P At rate of £150 and £100 respectively

Hospital for Sick Children Great Ormond-street, W C —H S , H P , and Asst Cas O Each at rate of £50

Hull Royal Infirmary —Cas H S At rate of £130

King's College Hospital, Denmark-hill S E —Clin. Assts , Med and Surg , 's &c

Lancashire Asylums Board —Pathologist £1000

Lincoln County Hospital —Jun. H S At rate of £150

Miller General Hospital for South-East London, Greenwich-road S E —H P £125

Prince of Wales's General Hospital, Tottenham, N —Two H S s and H P Each at rate of £120 Also Jun. H S and Jun H P At rate of £90 each

Royal London Ophthalmic Hospital, City road, E C —Asst S

Royal Northern Hospital, Holloway, N —Obstet H S Also H S Each at rate of £70

St Mary's Hospital for Women and Children, Plaistow, E —Hon. Asst P Also Clin. Asst

Salford City —Bacteriologist £600

Salford Royal Hospital —Radiologist £300

Samaritan Free Hospital for Women, Marylebone-road, N W —H S At rate of £100

Sheffield Royal Hospital —Vacancies on Res Med and Surg Staff At rate of £80

South London Hospital for Women, South Side, Clapham Common S W —H P and three H S 's Each at rate of £50 Also Clin Asst £1 1s per attendance

Stoke-on-Trent North Staffordshire Royal Infirmary —H S £150.

Swansea County Borough —Asst M.O. £600

The Chief Inspector of Factories announces a vacancy for a Certifying Factory Surgeon at Castleton, Derbyshire

Births, Marriages, and Deaths.

BIRTHS.

CLARK —On Sept 7th, at Walker-street, Edinburgh the wife of Alfred J Clark, M.D , of a son

FOULKES —On Sept 3rd, to Mary G. Foulkes, M.R.C S , L R.C P , the wife of R. K. Foulkes, M.B , B S , of 6, Barnfield-crescent Exeter—a daughter

HOOPER.—On Sept. 6th at the City Mental Hospital Fulford York the wife of Reginald Hooper M.B of a daughter

KILNER.—On Sept 8th, at Abbotsford Mostyn avenue, Llandudno the wife of S D Kilner, M D , of a daughter

ROSS —On Sept 8th, at the Avenue Nursing Home Cheam, the wife of J N MacBean Ross, M C , M.D , F R.C S , of Worcester House, Sutton, Surrey, of a son.

MARRIAGES.

FAIRBAIRN—MORE GORDON —On Sept 11th at Old St. Paul's Church Edinburgh William Ronald Dodds Fairbairn, M.A M.B Ch B Dipl. Psych Edin to Mary Ann only daughter of the late Mr Harry More Gordon of Charleton and Kinnaber, Forfarshire, and Mrs More Gordon, Albert-terrace, Edinburgh

MESSER—DELVES —On Sept 9th at the Parish Church Long Preston Yorkshire William Messer M.B , to Catherine Monica Mary daughter of the late Thomas Hirst Delves and of Mrs Delves, Lochinvar, Long Preston.

DEATHS

BURKITT —On Sept 7th, at a nursing home in London after an operation William Arthur Handcock Burkitt, M D of Goulburn New South Wales Australia aged 63

N.B —A fee of 7s. 6d is charged for the insertion of Notices of Births Marriages and Deaths

Notes, Comments, and Abstracts.

WHAT IS A MENTAL ILLNESS ? *

By Noel H M Burke, M R C S Eng , D P M Lond

Quite recently a curious diagnosis was found among the records of a patient This person was said to be suffering from "brain disease" and, in brackets, "functional" The label was the more amazing because there was no justification for any diagnosis of brain disease from the physical signs or symptoms, though there was reason to think there was a so-called functional disorder It is safe to assume that this evidence of confused thought was the work of one not well versed in the subject of medical psychology Yet in the last few months it has become apparent that those who are can be as careless in their approach to their own subject

At a recent meeting to discuss the early treatment of mental disease, someone spoke of his experience with malaria as a therapeutic agent for general paralysis of the insane In another meeting, at Bath last summer, the subject was supposed to be the prevention of mental disease, and much time was taken up with the consideration of nasal oral, and other sepsis, while a question was asked about a pure water-supply in some district

It is hard to understand the importance of sepsis in the causation of any mental disease at any rate in the sense implied by its advocates Nor is it easy to believe that an attack of malaria has any curative value in any mental disease, though we may be impressed by what is reported of its use in the treatment of general paralysis In other words, it is an error in the use of labels to class G P I as a mental disease, and there is loose thinking somewhere in the argument that gives to toxic absorption an important place in the ætiology of any truly mental illness

The Psychological Point of View

At first approach to this subject it seems quite easy to define a mental illness and to differentiate this group from that of the bodily illnesses, but the more one looks into the matter the less simple does it appear, and the more important are the difficulties to easy classification In the first place it is clear that the term mental illness must mean an illness of mind That, at least, seems to be the logical meaning of the words used We are at once called upon for a definition of mind, and at once we find disagreement amongst the experts, and a whole list of theories, each well supported by argument, from which we may choose that which seems most reasonable What is mind and what is its relation to body ?

Between monism, dualism, parallelism, epiphenomenalism, and so on, which is the view that approaches most nearly to the truth ? This is not, perhaps, the place for a laboured discussion of these questions, but we should be on safe ground and should meet with a good deal of agreement in selecting an Aristotelian form of definition for mind as being the sum total of the functioning of the whole organism This appears to be the most satisfactory way of viewing the matter Mind seems to be, not the manifestations of the activity of a limb, a brain, an eye or a tooth, but of a whole organism. It seems to depend on the existence of such organism or subject, and on the state of that subject in virtue of being alive

The elements of mentality are summed up in a way that all can accept under the headings of thinking, feeling, and striving Now if this be a satisfactory description of mind it would seem that a mental illness is an illness, not of a limb, a brain, or a tooth, nor of any material part of a subject, but of that general functional quality of the subject which is his mind Stoddart calls it mentation, and describes it as a process, to distinguish it from the mind which many regard as a thing Psychologically, a mental illness is one which is seated in those functionings which are subsumed under "thinking, feeling, and striving" as the main forms of mentality or mentation It is a disorder of memory, perception, emotion, wishing and doing, it prevents the making of normal adjustments to social and other environmental situations, including the internal environment of the subject himself

If this be an approximately true description of the essence of a mental illness, it is clear that the disorder is quite different from a brain disease or other purely bodily lesion, and that the mechanism of the two is different It follows that the causation is also different and in causation we have the great distinguishing feature A bodily illness is a disorder of some tissue, organ, or system, caused by intrinsic defect, noxious external influences, or a disturbance of the adequate balance between intrinsic strength and external stimuli Similarly, a mental illness is a disorder of mind caused by inherent defect, noxious external influences, or a disturbance of the adequate balance between attacking and defending forces In the case of the former, however, the external noxious influence is of material nature , in the case of mental illness it is of a mental nature Thought does not add a cubit to the stature Food, light, and exercise may do so A blow hurts a boy's body what he thinks about it may throw his mind into a tangle and determine a mental illness

From the psychological standpoint, then, we must regard a mental illness as one in which mental causes have produced mental malfunction, and we must, for logical exactness rule out all other pseudo-mental illnesses, such as paralytic dementia. But things are not quite so simple as the position just stated, because, if we are consistent in our reasoning, we must recognise another issue and must be prepared to broaden our definition. We have denied to bodily disease any place in the ætiology of mental disease, for the reason that they belong to different categories both as regards causation and location But if mind is the sum total of the functioning of a whole organism, what is the effect on such functioning of disorder of some part of the organism ? We must allow, at any rate in theory, that any disturbance of structure must necessarily involve modification of the total function, and therefore that all bodily disease must have some mental disorder as a correlate To some aspects of this we will return later on For the moment we must consider how much this admission upsets the satisfactory simplicity of the definition It is a matter of proportion and degree If one could express the matter numerically and apply the principles of the differential calculus to this part of psychology, one would be able to show the extraordinary insignificance of a clean pin-prick as an influence in altering mentation The septicæmia that might follow a dirty pin-prick would possess a far higher value, the presence of a tumour in the frontal lobe might rank higher still

From the psychological standpoint therefore, the definition must be modified by the use of some such word as "mainly" or "essentially" or "primarily" on the principle of Touchstone when he said "much virtue in 'if'" A mental disease is then a disorder occurring essentially in the mind of an individual and caused mainly by trauma of a mental nature This can be put in three words The essential quality of a mental illness is that it is a psychogenic psychic disorder

The Philosophical Point of View

Up to the present we have dismissed rather summarily the problem of the relation of mind to matter Although in the main a question for the arguments of philosophy, yet we should give some consideration to the philosophic point of view, both for its own sake and for the light it may throw on our more medical problems In this respect it is interesting to consider the views of Bertrand Russell In a recently published lecture on "Perception" he refers to the glib way in which people speak of mind and matter as contrasted and opposite entities There is, as a matter of fact, no such complete opposition and no clear dividing line between the two, but rather a difference of degree. An oyster, for instance, is less mental than a man The quality of mental-ness has crept in in the transition between the conditions represented by the phrases "There is a triangle" and "I see a triangle" In the latter situation there has been added a subject who has a perception To Russell, perception is at the meeting point between the physical (sensation) and the mental (the addition of meaning)

He discusses the gradation from physical to mental in another way There are public and private objects, defined as public when all can see them, and as private when none but the owner or subject can do so Touch and sight are extremely public processes in this sense, introspection is extremely private Mental processes, especially dreams, are the most private of all Again, the distinction is one of degree What many people can perceive is physical , what only one can perceive, but can locate in a public place, is in his own body and is physiological , what only one can perceive but cannot so localise is purely private and is mental

In his "Analysis of Mind" Russell deals with this problem much more exhaustively and comes to the same general conclusion, that there is a difference, but that it is not an absolute difference, but rather a gradation through degree of difference The main distinguishing feature is the system of causal laws that each obeys both mental and physical being merely different modes or groupings of one neutral ultimate stuff Things grouped in such a pattern that they obey physical laws are material those that obey psychological laws are mental The whole tendency, nowadays, is for physics to become less material while psychology adopts a more material tone

---

* Paper read before the Medical Section, British Psychological Society

It is interesting to note that the general trend of this philosophical attitude gives support to the conclusions resulting from a psychological approach There is a mental illness and there is a physical illness and they are essentially different both in cause and location, yet there is no absolute line between the two but a gradual shading from physical through partly mental to purely mental Consideration of our subject from the medical aspect will lead to the same general conclusion

The Medical Point of View

There are two ways in which the physician is interested in mental illness, the clinical and the administrative In the former he is concerned with disease processes and their effects on the individual, and with therapeutic measures whereby he hopes to help the patient to recover In the latter he is concerned with the conduct of an institution and with social and legal matters This is not medicine in the true sense, and it is from the former and truly medical point of view that we must now consider our problem From this aspect we deal with individual people, men and women who are ill and it is our business to understand their present suffering and the cause of that suffering, so that we may discover means of relief

The study of the ætiology and pathology of mental illness is an essential though difficult part of our work Failure to attempt it is scientifically slovenly and leaves us as mere empiricists In the past and even now to a considerable extent, much of such treatment as is given for mental illness is little more than empirical Most of it is harmless, some may be helpful but the rest cure sea voyage, change of air, potassium bromide intestinal purification, and similar prescriptions are not informed by any sound knowledge of the real nature and ætiology of mental illness

It is for these reasons of scientific accuracy, and of ultimate efficiency, that we should form and hold some clear idea of what we mean when we speak of mental illness Let us review some of the ordinary conditions with which we are called upon to deal and consider what we can learn from them in answer to our problem

There is more than one set of views on the classification of mental diseases but we can avoid entanglement in these smaller problems by keeping our argument on as broad a basis as possible The mental disorders from which patients suffer do group themselves out into a number of fairly definite and well-recognised units or systems These are sufficiently well defined to be classed as disease syndromes even if they are not actual disease entities in the full sense Let us consider them in the light of the suggested definition

(*To be concluded*)

RED CROSS ACTIVITIES IN THE AMERICAS

AN account of the second Pan-American Red Cross Conference, which met in Washington this summer, appears in the September issue of the *World's Health* At the congress 16 of the 18 official delegations representing the Red Cross Societies of the American continent came from Central and South America and spoke either Spanish or Portuguese as their native tongue The number of medical men among the delegates was a convincing proof of the sympathy which unites the medical profession to the Red Cross Prof Juan de Dios Villegas-Ruiz, President of the Venezuelan Academy of Medicine, acted as chairman of the session devoted to health activities, and the special committee on health, which was elected to study technical problems, was presided over by Dr Paz Soldan, professor of hygiene in the University of Lima (Peru) In the course of the various sessions devoted to the discussion of health topics in their relation to Red Cross work, many interesting sidelights were thrown on Latin-American problems The organisation of public health work in the Central and South American Republics being still in its early stages the field of activity open to the Red Cross is almost unlimited In several of the countries the National Red Cross Society is regarded as the leading unofficial health agency, and in all of them there is close coöperation with the official health departments The Presidents of the Argentine and Brazilian Red Cross Societies are also the directors of the Army Medical Service, while the President of the Chilian Red Cross was formerly the Minister of Health In Cuba the Director of the Health Service is a prominent Red Cross official and the leading Peruvian delegate to Washington is professor of hygiene in the University of Lima

Among the papers read was one by Prof Villegas-Ruiz, of Venezuela, on the importance of eugenics to public health. He emphasised three points (*a*) The desirability of a pre-matrimonial medical certificate (*b*) The importance of child welfare (*c*) Mental hygiene The appeal of M Antonio las Heras Hervas, the blind president of the International Committee of the Blind, drew attention to the incidence of blindness in Latin-America In the 21 Central and South American Republics there are he estimates approximately 115,000 blind persons and in the whole of this vast territory only ten inadequate institutions exist to care for them, whilst not one periodical or book is published in Braille The population of the whole of South America approximates that of the United States, but the former has twice as many blind citizens The speaker appealed to the Red Cross to use its influence on behalf of the blind by making a statistical survey of eye diseases by conducting intensive propaganda on the subject of hygiene of the eyes, and by fighting the causes of blindness Prof Paz Soldan of Peru spoke of the role of the Red Cross in popular health education, which should be simple and objective

Housing Problems in Brazil

Another branch of public health was touched upon by Dr Amaury de Medeiros of Brazil who read a paper on the Red Cross and workmen's dwellings In South America also there is a housing problem, and the familiar difficulty occurs of the dearth of cheap houses owing to the fact that building small houses for renting is not an attractive commercial proposition Dr Amaury de Medeiros described a housing scheme he had carried out at Recife capital of the province of Pernambuco, in his capacity of Director of Public Health Most of the existing houses there were nothing more than huts of palm and corrugated iron and were extremely insanitary He raised $30,000 by public subscription bought a piece of ground, and erected model workmen s dwellings These he let at reasonable prices and with the proceeds, after deductions for repairs, he proceeded to build more houses This scheme has proved most successful The houses have served as models for many private builders and the standard of domestic hygiene among the tenants has risen considerably The speaker appealed to other Red Cross Societies to include housing schemes among their health activities

Health Education through the Conscript

Surgeon-General Julio R Garino, President of the Argentine Red Cross and Director of the Army Medical Service showed how the work of the Argentine Army Medical Service contributed to the health of the Republic and the prevention of social scourges The Argentine conscript receives instruction in hygiene from the moment he enters the army, and the 30 000 conscripts who annually undergo military training return to their homes equipped to become health propagandists in civilian life Vaccination against typhoid, para-typhoid and small-pox is obligatory in the Argentine army and in all military stations antityphoid vaccination is given free of charge to civilians requesting it A careful health record of each recruit is kept from the day he enters The laboratory work carried out by the Army Medical Service and the statistics kept by it have been of great value in completing a medico-geographical survey of the Republic, determining the malarial zone and making a study of the climate soil and disease conditions

The Colombian delegate gave an interesting account of the Health Centre founded in Bogota by the Red Cross in 1921 and now in charge of Dr Adriamo Perdomo

Panama —Bolivia —Paraguay

In Panama the Red Cross is doing good work in child welfare and also for the tuberculous, for whom a clinic is maintained According to the latest reports, over 60 000 children have been registered in the Red Cross child welfare centres since this work was started under the supervision of Señorita Morales In April, 1925, a prenatal clinic was established under Dr Luis C Prieto At present there are 15 child welfare visiting nurses, in addition to one for the prenatal clinic and another who goes daily to see poor families registered in the department for poor relief maintained by the Red Cross Largely owing to the work being done under Señorita Morales's direction, the infant mortality rate in the town of Panama has fallen from 237 per 1000 in 1917 to 138 in 1925 The Panama Red Cross also does good service in visiting the Palo Seco Leper Asylum and helping the lepers in many ways

Bolivia is another country which is much concerned with child welfare, for it suffers from a high infant mortality-rate, that for La Paz being 330 per 1000 in spite of its favourable climate This high infant mortality has been ascribed to an insufficient and impure milk-supply Although the Bolivian Red Cross was only officially recognised in 1923 it has already been active on behalf of children, and has worked in coöperation with the Infant Welfare Society of La Paz

In Paraguay the Red Cross works in close coöperation with the doctors of the Public Health Service, who give their services voluntarily at its milk stations The Red Cross also assists in carrying out school medical inspections and runs some public baths

The resolutions passed by the Conference range over almost the whole public health field, and include recommendations regarding child welfare, eugenics, prevention of blindness, the health of the school child, the teaching of health in the schools, popular health education, housing, industrial hygiene, nutrition, and public health nursing

THE HEALTH OF A TREATY PORT

WEIHAIWEI

THE territory of Weihaiwei was leased to Great Britain by China by a Convention signed at Peking on July 1st, 1898, "in order to provide Great Britain with a suitable naval harbour in North China and for the better protection of British commerce in the neighbouring seas" The leased territory is situated in the Chinese Province of Shantung It comprises the Island of Liukung, all the islands in the Bay of Weihaiwei, and a belt of land ten English miles wide along the entire coastline Mr W Russell Brown, the officer administering the Government, has prepared a report on the affairs of the territory for the year 1925, which has been issued from the Colonial Office Amongst other items it mentions that Surgeon-Commander A McCloy, R N, terminated his appointment in December as M O H for Liu Kung Island, and was succeeded by Surgeon-Commander N S Meiklejohn, D S O, R N

The general health of the civilian foreign community, both resident and visiting was good, and no epidemic occurred One civilian death was recorded from carbuncle of the neck, and there was only one serious case of dysentery —a visitor who contracted the disease before arrival The health of the native population was also satisfactory, only 156 cases of dysentery and diarrhœa were treated, of which 55 applied at the Island Hospital and 30 at Wen Chuan Tang The total attendance at the three hospitals was 15,058, as compared with 14,898 in the previous year, whilst the in-patients treated numbered 259, as against 278 The operations performed were 938, of which 165 were under chloroform and 44 under cocaine, the remainder comprising tooth extractions (368), abscesses, and other minor surgery Forty-two obstetrical cases were attended, mostly in the patients' own homes Tuberculous disease of bones and joints is quite common, and a number of long cane deck chairs have been obtained from Hong-Kong to give these patients the benefits of sunlight and fresh air The seven deaths in the Civil Hospital comprised three from injuries, one from poisoning (suicide), one from cholera, one from amputation of the leg, and one following operation for the removal of a stone in the bladder

Owing to the prevalence of cholera in Shanghai that port was declared infected on August 17th, and all vessels arriving therefrom were boarded and the passengers and crew medically inspected, while a special hospital was fitted up for the reception of any cases that might be landed here Sporadic cases of the disease occurred in neighbouring ports, but only one case reached Weihaiwei and was admitted to hospital, where the patient unfortunately died from uræmia five days later Quarantine was removed on Oct 5th Seventy-three cases of poisoning were treated at the hospitals, arsenic and phosphorus (matches) being the usual poisons employed, the former in attempted murder cases and the latter in the much more frequent attempts at suicide A case of considerable interest was that of a young man whose skeleton was found nine days after he had disappeared from home The whole of the soft tissues had been stripped from the bones, and these were scattered over a clearing in high grass, all the small bones being missing, while the ends of the long bones showed evidence of having been gnawed The skull had a long fracture on the left side, and torn fragments of clothing showed extensive blood-stains on the collar-bands and left shoulder and sleeve, while a blood-stained sack was also found on the spot There was reason to believe that the man had been murdered and his body removed, with the sack over his head and chest, to the place where it was found outside the village, and had there been devoured by native dogs, but it was not found possible to secure a conviction, though three men were charged with the crime

A vaccination campaign was held in May and June and 7074 persons were treated, but small-pox still occurs sporadically in the more scattered districts during the winter and early spring Kala-azar, a disease first identified in 1900 and believed to be conveyed to man from the dog by fleas and bugs, is very prevalent in the district, no less than 100 new cases having presented themselves for treatment during the year The aldehyde blood-serum test was found of value in confirming the diagnosis, and these cases have been treated with success by intravenous injections of antimony tartrate, commencing with a dose of ½ gr, 438 of these inoculations were given during the year

Situated on the sea-shore in the north temperate zone, Weihaiwei experiences neither extreme of great heat or cold The climate is healthy and bracing in winter, and the summer, although hot, is by no means relaxing The highest temperature yet recorded in the history of the territory is 99° F in 1922 and the lowest 1° F in 1913 The heaviest rainfall was 47 70 inches in 1914 and the lowest 15 53 inches in 1918 Rain fell last year on 54 days, the total fall being 23 66 inches, as compared with an average of 26 565 inches during the 20 years 1906–25

SANOCRYSIN IN BELFAST

EXPERIMENTS carried out with sanocrysin in Belfast during the year 1925 by Dr Andrew Trimble, and summarised in his annual report just issued, have led him to the following conclusions (1) Sanocrysin is a distinct therapeutic advance in the treatment of tuberculosis in definitely selected cases (2) Observation for at least a year will be necessary in order to ascertain whether the good results obtained will be permanent (3) Sanocrysin is not suitable for general use, and should be used only in institutions equipped with the necessary apparatus, and under the control of physicians of sufficient experience and expert knowledge in the treatment of tuberculosis (4) Further research is necessary to determine the class of case most likely to benefit by this method of treatment, the correct dose for individual patients, the intervals between the doses, the length of the whole course of treatment, and the indication for the discontinuance of the treatment

PLAGUE AND THE FLEA

Surgeon C L Williams, of the U S Public Health Service, in the *Military Surgeon* for August, makes it clear that the flea responsible for transmitting plague from rat to rat and from rat to man is usually *Xenopsylla cheopis* Some places in the track of plague epidemics escaped in a way unexplained until L F Hirst showed that at Colombo, which plague had then never attacked, the common flea was *X astia*, and *X cheopis* was absent When plague did occur there later, in relation to a special importation of grain, it was in a restricted area of the town, and *cheopis* was now found in that district Madras has also escaped plague, among hundreds of fleas from Madras examined by Hirst all were *astia* Differentiation between *cheopis* and *astia* is difficult, depending on the form of the spermatheca examined under the microscope Hirst's theory got little support until Major F W Cragg, I M S, examining rat fleas from all parts of India to find the habitat of the three main species, *X cheopis*, *astia*, and *brasiliensis*, satisfied himself that the occurrence of plague in an area was closely correlated with the prevalence there of *X cheopis* In our own ports, judging by the experience of Cardiff (THE LANCET, 1925, i, 1051), *cheopis* is not found on rats outside the port area It is probable that when it can be made, a map of *cheopis* distribution will outline the area of plague distribution, as a map of *Aëdes* distribution outlines the yellow fever areas Surgeon Williams asks the question why plague reappears in an area it has once left, and answers it by assuming that at the close of an epidemic rats carry plague as a septicæmia without symptoms, as goats carry Malta fever During 17 months after a recent Galveston epidemic, the last nine rats found infected showed no naked-eye sign of the disease, and the bacilli isolated had but little virulence Men, too, may carry plague bacilli of low virulence in chronically enlarged glands At a favourable opportunity these less virulent bacilli may light up a new epidemic

HYGIENE FOR SCHOOLS

A SMALL text-book[1] on hygiene, which is designed as a health reader for schools, has reached us It is easy to read and understand and covers most of the ground fairly On the anatomical side the skeleton, muscles, blood, heart, &c, are described, chapters on food, digestion, excretion, and the sense organs deal with physiology Chapters on ventilation, clothing, and infection represent the field of hygiene proper The book is open to criticism The treatment of indigestion, for example, need find no place in a volume of this nature, advice as to the use of bicarbonate of soda for "heartburn," is surely quite out of place An outline of infant feeding is rightly included, but there is no mention of the practical application of the study of vitamins discussed at length some pages previously, to artificial feeding The use of dried milk is not mentioned, although condensed milk is condemned On certain controversial matters, such as infantile vaccination and the "tendency" to tuberculosis, Miss Shuttleworth is too dogmatic in her statements The most serious fault of the book, however, is in the absence of any reference to the reproductive system It is essential if a sane outlook on sex matters is to be established, that this system should receive the same attention in elementary text-books as any other system The subject requires delicate handling, but that is scarcely an adequate reason for omitting it in a book written by one who as biology mistress at a girl's secondary school, would seem specially qualified to deal with it

---

[1] The Wonders of the Human Body A Health Reader for Schools By Margaret A Shuttleworth Biology Mistress, Sydenham County Secondary School London University of London Press, Ltd 1926 Pp 195 2s 6d

A Plea
FOR DRASTIC REFORMS IN THE TEACHING AND PRACTICE OF MIDWIFERY.

A Paper read before the Section of Obstetrics and Gynæcology of the Royal Society of Medicine

By G. W. THEOBALD, M.D. Camb., M.R.C.P. Lond., F.R.C.S. Edin.,
PROFESSOR OF OBSTETRICS AND GYNÆCOLOGY, BANGKOK,
FORMERLY ASSISTANT MASTER, THE ROTUNDA HOSPITAL, DUBLIN, LATE OBSTETRIC TUTOR IN THE UNIVERSITY OF LEEDS

There is a growing consciousness, which is not confined to medical circles, that the state of midwifery in this country is not what it should be. The official statistics are dreadful. Four women die out of every thousand who give birth to children. That is to say that, assuming that a mother has four children, she undergoes a total risk of 1 in 70 of dying as a result of childbirth. Such figures are terrible, but they only represent a fraction of the truth.

Of the 3000 mothers who die annually in England and Wales over a thousand die from sepsis. If a thousand die, there is little doubt that a great many more are severely infected and barely escape with their lives. There is reason to believe that the actual number who die is greater than recorded, as those women who die within a short period of childbirth, and are registered as dying from pneumonia, should really be included in the deaths from sepsis. A large number of the gynæcological conditions requiring operation, including most of the ectopic gestations, with the risk to life and the long period of disability involved, are made necessary by bad midwifery. A far greater number of women suffer ill-health and varying degrees of inconvenience, often amounting to pain, all their lives, but either cannot bring themselves to face the ordeal of a gynæcological examination or consider that such discomfort is the heritage of all mothers. The numbers of these sufferers is enormous.

Finally, we may consider the sum total of misery, the broken homes, the orphans, the widowers. What more need be said to prove that the cold figures of the Registrar-General only give a very faint idea of the ghastly results of childbirth in England and Wales?

In order to improve matters various steps have been taken. The midwives have been registered. Antenatal clinics have been formed in a large number of centres. There has been an alarming increase, more far-reaching than is realised, in the State control of midwifery. The medical officers of health, with little or no experience of practical obstetrics, have enormous powers and are practically responsible for the control of midwives. A vast amount of money and effort have been expended, and there is very little cause for congratulation. In fact, the figures do not show that amount of improvement which could reasonably have been expected even if such efforts had not been made. There is indeed reason to believe that further improvement is not likely, but rather a disimprovement may be anticipated in the future. The midwife is expected to know too much, and a midwife who knows too much is a danger to the community. A highly educated and trained sister in any of the operating theatres of our great hospitals would not dream of opening a superficial abscess, and yet a woman with less advantages in surgical and other training is expected to make a vaginal examination, to deliver breech presentations, and, in what she considers an emergency, remove a placenta.

The doctor is getting less experience in normal midwifery, and will not be so good at abnormal work as the old practitioner, who learned his obstetrics after he qualified by being an assistant in a large midwifery practice. Lastly, the antenatal clinics, with all their potentialities for good, may in fact be a source of danger, for they have made possible an enormous amount of meddlesome operative midwifery.

There is one solution to the problem which has not been given a fair trial, and that is an improvement in the teaching of midwifery. I am convinced that radical and obvious changes in the teaching of midwifery would be of more value than all the other efforts put together in reducing maternal injuries and mortality, and far less expensive.

PRESENT-DAY PRACTICE OF OBSTETRICS

The following is a short résumé of some of the cases admitted to a maternity hospital during 1925, and may give some idea of the way in which obstetrics is being practised. Practically all of them were admitted, treated, and recorded by myself.

Case 1.—Primipara, aged 25. Labour said to have started five days before, since when she had had about five minutes' sleep. Unsuccessful effort at delivery with forceps. Patient admitted to hospital worn out, the head high, and the external os only one-quarter dilated. Morphia and scopolamine were given and the head later came down and was lifted over the perineum with forceps. Vagina torn to ribbons. Doctor thought that he "was pulling bone against bone damned hard," and he was. Ten stitches. Not morbid.

Case 2.—11-para, aged 42. Practitioner changed a face presentation to a vertex, and tried to deliver head with forceps. Head was high above brim, and the obstruction was caused by the placenta; version; living child.

Case 3.—3-para, aged 31. Doctor applied forceps for an hour or so and then sent for another doctor. Attempts at delivery were made lasting for five hours. The woman was ultimately brought into hospital. The forceps were applied and delivery was fairly easy. The vagina was torn to ribbons. The patient had a severe parametritis and was in hospital for eight weeks, running a temperature up to 104° F. She went out and still is a physical wreck.

Case 4.—Primipara, aged 33. In labour 24 hours. Head above brim. One doctor put on forceps and pulled hard. He then sent for another doctor who pulled hard. The patient came into hospital with the head high and in a seriously collapsed condition. She was given some scopolamine and later some morphia, and the head came down to the perineum and was lifted over with forceps. The vagina was torn to ribbons. The mother ultimately recovered and the child did well.

Case 5.—Primipara, aged 35. Primary uterine inertia. No sleep for five days; frequent vaginal examinations. On admission the head was not engaged by its greatest diameter. Morphia; scopolamine; quinine; forceps; Walcher's position. Female child, 7 lb. 10 oz.; did well.

Case 6.—Primipara, aged 27. The forceps were applied one evening, and after long efforts at delivery had failed the woman was left. Next morning the forceps were again applied, but in vain; and so the woman was admitted to hospital. A baby weighing 8 lb. 14 oz. was delivered by the forceps, and did well (forceps in middle strait).

Case 7.—Primipara, aged 21. Brought in by doctor in his own car for immediate Cæsarean section. The head was well engaged. An injection of morphia and scopolamine was given. A living baby weighing 7 lb. 8 oz. was born in six hours.

Case 8.—2-para, aged 31. Doctor came to hospital to see a Cæsarean section, but the baby had been born spontaneously three days earlier and soon after the mother's admission.

Case 9.—3-para, aged 29. Sent in as a case of obstructed labour, after prolonged efforts at delivery with the forceps, and still under the anæsthetic. An enema was given and a catheter was passed, and a child weighing 7 lb. 10 oz. was born in 12 hours.

Case 10.—Primipara, aged 20. Membranes ruptured 12 hours before admission. Doctor tried to *dilate up cervix nine hours* after the membranes ruptured while the patient was under an anæsthetic, but failed and sent her into hospital as a transverse presentation. By abdominal examination it was found that the head was engaged, and no further examination was necessary An injection of morphia and scopolamine was given and an enema The patient delivered herself of a female child weighing 4 lb (Pelvic measurements 10 in., 10¼ in, 7¾ in) Temperature 102 4° F Pulse 106 before delivery, normal after Two doses of 40 c cm antistreptococcal serum

CASE 11 —Primipara, aged 20 Sent in as a transverse lie Head engaged by abdominal palpation. Scopolamine gr 1/150 Female child weighing 6 lb 12 oz, born in five hours, and did well

CASE 12 —Primipara, aged 26 Forceps were tried on two separate occasions On admission, head just engaged, cervix only half dilated Scopolamine gr 1/150 Head came down on to the perineum and was lifted over with the forceps Baby had been dead for some hours "I have three pairs of forceps—and I used two different pairs and I pulled damned hard and could not shift the head"!

CASE 13 —Primipara, aged 27 Patient sent in as a case of obstructed labour There was a large mass of fæces in the colon Enema, morphia Two doses of scopolamine Two doses of pituitrin Head came down on to the perineum and was lifted over with the forceps Female child weighing 6 lb 14 oz Did well

CASE 14 —Primipara, aged 25 In labour for 24 hours before admission Seven vaginal examinations were made outside On admission the external os was only one finger dilated, but the head was well engaged Morphia, two injections of scopolamine, quinine gr 10 The head came down to the outlet and a male child weighing 6 lb 2 oz was delivered with the forceps and did well

CASE 15 —Primipara, aged 30 Forceps slipped twice Two vaginal examinations by midwife Easy delivery with the forceps Free bleeding from vaginal tear which extended to the fornix Male child weighing 6 lb 13 oz Did well

CASE 16 —Primipara, aged 27 In strong labour for 48 hours Numerous vaginal examinations by midwife Head high above the brim True conjugate 2½ in. and perforation Death from sepsis on nineteenth day Temperature 102 8° F Pulse 120 on first evening!

CASE 17 —Primipara, aged 24 Membranes ruptured six days Labour commenced 24 hours before admission. Doctors out all morning and afternoon Several anæsthetics Cervix manually dilated Patient sent in as a case of impacted shoulder On admission, temperature 100° F, pulse 140, very shocked A case of hydrocephalus Died from sepsis after fighting for her life for eight weeks Temperature started first day

CASE 18 —Primipara, aged 32 Patient was three hours under an anæsthetic while two doctors tried at intervals to deliver with the forceps Head high Pelvic measurements, 8¼ in, 9½ in, 7 in Perforation Mother not morbid "If only I had had a pair of forceps that were long enough and strong enough I would not have brought her in here My wretched things kept bending"

CASE 19 —Primipara, aged 24 In labour 24 hours Membranes deliberately ruptured by midwife Innumerable vaginal examinations Double pneumonia, empyema Patient just escaped with her life

CASE 20 —Primipara, aged 35 In labour 30 hours Cervix only one-quarter dilated Head high above brim Attempts at forceps delivery for two hours Perforation

CASE 21 —Primipara, aged 20 In labour 24 hours Three vaginal examinations by midwife Hydrocephalus Perforation

CASE 22 —3-para, aged 30 Contracted pelvis In labour 24 hours Unsuccessful forceps outside Head above brim Version Living child which did well

CASE 23 —3-para, aged 26 In labour 24 hours Numerous vaginal examinations Sent in as a breech It was a case of prolapsed arm and cord and a living child weighing 7 lb was delivered as a breech—after an internal version had been performed

CASE 24 —4-para, aged 35 The doctor had discovered a prolapsed cord He therefore attempted to deliver with the forceps and failed He sent for another doctor, who also failed The woman was sent into hospital late at night as an urgent case But the baby was born in the taxi-cab

CASE 25 —A case of hydrocephalus The doctor pulled with the forceps for hours They slipped off on many occasions In hospital the skull was perforated without any anæsthetic and the body was easily led out with American bullet forceps

CASE 26 —6-para, aged 27 Miscarriage Arm pulled off and patient sent to hospital, where she delivered herself spontaneously

CASE 27 —7-para, aged 35 Placenta prævia Plugged with two lumps of cotton-wool the day before admission.

CASE 28 —5-para, aged 38 Placenta prævia Marginal. Woke up in pool of blood two days before admission Nurse told her there was nothing to do and she had better get on with her work Temperature 99 2° F Pulse 112 on admission

CASE 29 —7-para, aged 27 Placenta prævia Twenty-six weeks + Very collapsed and anæmic Had been plugged by doctor two days before admission, but she had coughed out the plug almost at once I requested the doctor not to plug again before sending her in, as he had suggested

CASE 30 —3-para, aged 36 Antepartum hæmorrhage for 24 hours She was told that she was a very rare case with her "heart in her bowels" Very ill and collapsed on admission

CASE 31 —11-para, aged 42 Toxæmic Antepartum hæmorrhage. Albumin +++ Numerous vaginal examinations by doctor and midwife before admission.

CASE 32 —11-para, aged 40 Incomplete abortion. Temperature normal Pulse 92 Three tampons in the vagina

CASE 33 —Bleeding for two days One tampon in vagina. Accidental hæmorrhage Albumin +++

CASE 34 —6-para, aged 23 Miscarriage five days before admission Frequent attempts at removal of placenta Finally sent to hospital with the placenta still retained and died within 12 hours of her admission

CASE 35 —2-para, aged 37 Placenta prævia centralis (term) Started to bleed six days before admission. Seven vaginal examinations Acute sepsis Death

CASE 36 —4-para, aged 39 Central placenta prævia. Vagina plugged with 36 in of gauze

Many cases of toxæmia were kept unrecognised for days before being sent into hospital One patient, booked as in-patient for delivery, was kept at home for 15 days because she was too ill to be moved She then came into hospital to die in a few hours At least nine women died during the year as a direct result of sheer bad midwifery It is obvious that for every one case admitted to the hospital after unsuccessful attempts at forceps delivery, there were several women whose children were dragged from them, dead or alive, through half-dilated cervices Nearly every case sent in by a doctor had previously been vaginally examined on several occasions by the midwife

FAILURES IN TEACHING

There can be no shadow of doubt that the doctors and midwives were directly responsible for those and many other similar cases that occurred in the area served by this hospital, and there is no reason to believe that the state of affairs is any better or any worse there than it is in any other industrial centre In the late war, the old lady who invested her money in war loans was morally just as much responsible for the killing of an enemy soldier as was the soldier who fired the rifle, and, in my opinion, the universities and teaching authorities are, if anything, more responsible for the bad midwifery than are the units who actually misapply the forceps The truth of this contention was very forcibly borne in upon me by the following experience

One of the above-mentioned cases was admitted with the head high and the cervix one half dilated The doctor who had sent her in telephoned to me that evening to know what had been done I explained that I had given some scopolamine as the cervix was not yet fully dilated He got rather annoyed with me and said that he was a strong man and had pulled hard, and was certain that the head could not come down The head did come down to the perineum I unwisely wrote inside the chart "The second case of damnable midwifery of the meddlesome type that has been admitted in the last two days" The doctor visited his patient, read the chart, and asked if he could see me He was exceedingly nice and said frankly that he did not know anything about midwifery He had qualified in the last three years, and had had no clinical instruction in midwifery The patient had made a lot of noise and he felt he ought to do something He was amazed to hear that the head came down and promised never again to apply the forceps until the cervix was fully dilated I have discussed this subject with many doctors and they all admitted that they had to learn whatever midwifery they knew—at the expense of their patients

There is one other important consideration Many practitioners in the provinces, rightly or wrongly, are very unwilling to send patients into hospital as they consider that they know as much about midwifery as do the members of the hospital staff, who are themselves very often engaged in general practice

Looking at the matter from another angle How is it possible for the doctors to know anything about the subject? The students attend a lot of lectures, which may or may not be more valuable than reading books They may even get a certain amount of bedside teaching—so-called clinical instruction They do not, however, receive the one thing that is necessary It is of no use to tell a man in a lecture that he should not apply the forceps until the cervix is fully dilated It is necessary for a man to be very sure of himself to refuse to apply the forceps, in the face of pressure from the husband and relations, after a woman has been in labour for some hours He wants to do something, he is expected to do something, and he is not sufficiently experienced and confident to exercise masterly inactivity, that virtue which is of great price He must be shown while a student how such cases are treated. A person living in, or close to the hospital, should demonstrate the treatment of such cases at frequent intervals, and the fact that the woman can in 95 per cent of cases deliver herself. He should be taught the use of such drugs as scopolamine and morphia He should learn that 95 per cent of cases in labour can be conducted by inspection together with Pawlik's grip The resident medical officer is, in most cases, far too inexperienced to conduct this teaching He is, in fact, in many cases afraid of the labour ward sister, and realises that she knows more about normal midwifery than he does It is no exaggeration to state that a man only begins to realise that he knows nothing about midwifery after he has lived for a year in a maternity hospital

DEFECTS OF THE PRESENT HOSPITAL SYSTEM.

Here is the crux of the matter, and it is in the solution of this problem that the hope for the improvement of midwifery lies It is the present hospital system—not the universities, not the specialists, not the practitioners, and not the midwives—that is responsible for the bad midwifery in this country The hospital system of this country evolved in its present form when medicine and surgery were the only two subjects worthy of consideration An attempt has been made to graft the new plant of obstetrics into the old stem, and it is a failure It is possible for a surgeon to say, "I will operate at such and such a time to-morrow," or for the physician to do his rounds at a stated time. The surgical and medical maladies persist for some hours, if not days, and the student is thus able to learn all that is possible about the diagnosis and treatment of the conditions from those best able to teach But it is not possible for the obstetrician to say, "I will apply the forceps at 11 o'clock to-morrow," or "I will do a version for placenta prævia to-night" The conditions in midwifery are all emergencies, and the teacher and his student must reside in or close to the hospital This fundamental difference between obstetrics and surgery or medicine has not been sufficiently appreciated Until there are several combined gynæcological and maternity hospitals in the country, where men can stay and learn midwifery and gynæcology under some teacher—for at least three years—improvement cannot be anticipated The hospitals must be combined, for no man can afford to stay three years doing nothing but midwifery, and then start to learn gynæcology

ORGANISATION OF THE ROTUNDA HOSPITAL

Let me give a short account of the Rotunda Hospital The hospital is managed by a Master who holds his appointment for seven years, and two assistant Masters who hold their appointments for three years and are directly responsible to the Master The extern department is managed by two extern assistants, who are responsible to the assistant Masters and through them to the Master and give the anæsthetics in the hospital No man can be appointed as extern assistant until he has done a six months' course in midwifery, either as a student or post-graduate No man can be appointed as assistant Master until he has been extern assistant No man can be appointed as Master unless he has been an assistant master The assistant Master does one month on the maternity side and the next month on the gynæcological side All the work in the hospital is done either by the Master or his assistants All the records are carefully kept by the assistants, who actually do the operations

If the results in the treatment of placenta prævia are better in Dublin than anywhere else, it is not because the Irish women are more hardy, but because it is not considered justifiable to leave the treatment of such a dangerous condition to a person with very little experience—any more than it is right to leave the treatment of a perforated gastric ulcer to a house surgeon If there are less Cæsarean sections in the Rotunda Hospital, and less cases in which labour is induced, it is not because St Patrick chased contracted pelves out of Ireland, but because those who treat the cases live in the hospital and do not decide in a hurry what treatment to adopt They are content to watch the process of labour at frequent intervals In a most illuminating address on the Renaissance of Midwifery, Dr H R Spencer stated that Boer, the founder of the great Viennese school, studied with Smellie and Hunter and adopted the British practice, "having learnt in France what Art, in England what Nature, could do"

THE RESIDENT OBSTETRICIAN

I am afraid that in many centres in England to-day Nature is not having much of a chance The system by which there are a large number of honorary members on the staff of one hospital makes it impossible for a definite and consistent line of treatment to be carried out for any number of years It is, moreover, almost impossible for the staff thoroughly to supervise the nursing and internal management of the hospital The result is that arrangements, which should be under the control of the obstetricians, pass into the control of the matron and nursing staff I am convinced that a low maternal morbidity-rate can only be obtained if a thoroughly well-trained and competent doctor lives in the hospital and makes it his business to supervise every detail of the routine, such as the cleansing of bed-pans and douche-pans, and the methods adopted for normal deliveries and normal vaginal wash-ups

The students in England very often deliver fewer cases than the nurses, and are taught by people who have had very little opportunity of learning conservative midwifery I myself have many friends with little or no experience of practical midwifery who have been appointed to the staffs of maternity hospitals It is impossible to learn midwifery through being appointed to the staff of a hospital The result is a perfect orgy of Cæsarean sections The reports of the maternity hospitals offer testimony of these facts Worse than that—if a man through obtaining a surgical qualification, is appointed gynæcologist to some hospital he becomes ipso facto an obstetrician A cynic could say hard things considering that the work of a gynæcologist is to repair the effects of bad midwifery I plead, therefore that there should be three or four improved Rotunda hospitals in England —not only maternity hospitals but schools of midwifery—where students can reside and learn practical conservative obstetrics by osmosis The future doctors will then learn not to interfere with normal labour, and to send abnormal cases into some institution where there will be somebody fully qualified to treat the abnormality It is surely reasonable to claim that no operation, other than low forceps delivery, should be carried out in a private house In the maternity hospital to which the cases above described were admitted the forceps were only applied on 50 occasions in 1505 deliveries, including a large number of cases sent in from outside, and in all but 17 cases the head was at the outlet

Midwives and their Functions.

The training of midwives also needs changing I would suggest that they should be forbidden ever—under any circumstances—to make a vaginal examination. If the case is normal no vaginal examination is necessary If the case is abnormal a vaginal examination is strongly contra-indicated The midwife can find out if the head is engaged by abdominal palpation If the patient is bleeding the case is obviously abnormal If it is desired to find out the dilatation of the cervix it can be done with ease by rectal examination In a book recently published rectal examinations were condemned on three grounds (1) The gloves cannot be sterilised after such an examination (2) There is a risk of damaging the walls of the rectum (3) Nothing can be made out The first two reasons need not be discussed The third is equally untenable In the above-mentioned maternity hospital during 1925 all the cases were conducted by rectal examinations After the nurses had made their prescribed vaginal examinations they made rectal examinations, as did the students I claim that it is almost as easy for a nurse to find out all that she wants per rectum as it is per vaginam No emergency case was admitted during the year which had not been examined vaginally on many occasions by the midwife before the doctor was called Nurses are expected to know a lot of theory, and are forced in examinations to say that they would do all sorts of operations in an emergency I know one nurse who was driven to say that she would remove a placenta manually, and then plug the uterus, using a poker! She passed first of all the candidates They are forced to carry an apparatus for giving vaginal douches, which are never indicated during labour, and are allowed to give such a dangerous drug as quinine I have seen one fatal case of rupture of the uterus following quinine

The fundus was not controlled during the third stage of labour in any case during the year 1925 in the maternity hospital of which I am speaking Only two placentæ needed to be manually removed No cases of post-partum hæmorrhage required any intra-uterine douche or manipulation If the midwife practises in a very lonely spot I would suggest that she should receive a special licence to remove the placenta if necessary I would, however, claim that it is a very unwise thing to give uneducated women the right to remove a placenta, to carry out an operation for which they are not trained, and an operation which is by no means easy, is rarely indicated, and is always risky

Sepsis

I have the temerity to suggest that it is an unfortunate fact that the committee of the British Medical Association who have drawn up the interim report on the Causations of Puerperal Morbidity and Mortality have suggested that further progress in the prevention of puerperal sepsis is most likely to be made by the study of the endogenous causation of infection They refer to the exceedingly interesting and instructive paper read by Dr G FitzGibbon and Dr J W Bigger before the Obstetrical Congress in London I have only two observations to make (1) Every case investigated was vaginally examined on at least two occasions by a nurse (2) I do not believe it is possible by any device as yet evolved to get a culture from the uterus that is free from cervical contamination

I have been trying in vain to discover an authentic case of fatal sepsis that occurred in a woman who had never been vaginally examined I certainly have never seen such a case It must be remembered that some methods of normal delivery amount to a prolonged vaginal examination. There can be no shadow of doubt that the vast majority of morbid cases are made morbid by infection introduced from without.

Only 5 1 per cent of the 1505 deliveries during 1925 in the maternity hospital already referred to were morbid, as judged by the British Medical Association standard Of the normal deliveries numbering some 1200, only 30 were morbid by the Association's standard, and of these 30, 18 were morbid on not more than three occasions A midwife would have had to report only 12 cases as being morbid All cases admitted to this hospital from outside after operative interference were given 40 c cm of antistreptococcal serum This serum was given in 76 cases In 57 cases the puerperium was normal, in 3 cases morbidity was noted on four or less than four occasions, while in 12 cases the morbidity was of longer duration There were 4 fatal cases

The Attainment of a Low Morbidity

This is, I think, the lowest morbidity that has ever been claimed by any maternity hospital in the British Empire, and I consider it due to (1) the minimum of interference during delivery, (2) the free use of 1–1000 biniodide of mercury throughout the hospital, (3) the abolition of all binders, so that the patients were free to sit up in bed within 12 hours of their confinement; (4) free purgation (every patient received 2 oz of castor oil the morning after her delivery, and some purgative every night she was in hospital), (5) the serum given to contaminated patients There can, I think, be little doubt that this serum is of great value in preventing sepsis from occurring, if it is given soon enough and in large enough doses Once the patient is septic it appears to be absolutely valueless A marked serum rash was noted in a few cases, and a rather severe anaphylactic reaction occurred in one patient It is clear that if the serum is to be given at all it should be given in moderately large doses, and it is to be hoped that it will soon be offered for sale at a much lower price The serum was not given to any non-contaminated patient, however severe the operation

This low morbidity was obtained in spite of the fact that the hospital is badly constructed, and more than 80 patients were often housed, although there was only proper accommodation for 50 beds I have often seen more than a dozen patients sleeping on mattresses on the floor Puerperal sepsis is not caused by bad surroundings but by bad midwifery

The Control of the Perineum

In an effort to get further back to Nature I requested the sisters to allow 100 women to deliver themselves, by themselves, while the nurse was standing at a distance from the bed This was termed the Garden of Eden method of delivery and gave the following results —

	No	Perineum intact	Perineum lacerated.
Primiparæ	35	18	17
Multiparæ	65	62	3

Two hundred cases were then delivered by the modified Garden of Eden method All the nurse did was to prevent the head from being born with a flop The results were as follows —

	No	Perineum intact	Perineum lacerated
Primiparæ	80	63	17
Multiparæ	120	116	4

The woman is allowed to get into any position she chooses There is no feeling for the cord, there is no lifting of the leg, causing the woman to feel exposed, and there is no possible contamination of the nurse's hands with the contents of the bowel

This method, while interfering with Nature as little as possible, gives results which are as good if not better than any ritual for the control of the perineum.

STERILISATION OF GLOVES.

There is one more subject on which I should like to touch Some two years ago Dr Bigger and I read a paper before the Royal Academy of Medicine in Ireland showing that gloves could be sterilised by washing with soap and water, using a scrub-brush if necessary, and then immersing the gloved hands in 1–1000 biniodide of mercury for half a minute Nobody has disputed the truth of these contentions, but some have said that the doctrine is dangerous At the present moment the vast majority of midwives in practice get fæces on their hands every day and make vaginal examinations without gloves Boiling destroys the rubber and the midwives cannot afford to keep buying fresh gloves If the gloves are washed and treated with the care that is bestowed on a crêpe-de-chine camisole they will last for a long time I contend that it is much safer for a midwife to use gloves so sterilised, and not to make vaginal examinations, than to make vaginal examinations with her bare fingers which cannot be sterilised Fæces are gross dirt and can be easily washed off, and they are often less harmful than the discharges of the vagina which may not have an offensive odour

Moreover, it is impossible for a doctor to apply the forceps or to clear out an abortion single-handed in an antiseptic manner unless he adopts the method I have suggested There is no need for a sterilised drum to conduct midwifery with safety In the series of cases here described I neither used nor allowed the assistant to use any sterile towels in the delivery of such cases as might have to be treated in a private house

CONCLUSION.

The results in midwifery in England and Wales are bad, and are a lot worse than the figures would suggest The solution of the problem lies in a return to Nature and in better midwifery This desired result can only be obtained by drastic changes in the teaching of midwifery. I suggest that the whole attitude towards midwifery be altered and that (1) nurses be forbidden to make vaginal examinations, (2) nurses be forbidden to deliver breech presentations, (3) nurses be forbidden to control the fundus during the third stage; (4) that the modified Garden of Eden method of delivery be adopted, or, anyhow, that methods involving much vaginal manipulation be forbidden, (5) that binders be abolished, and free drainage during the puerperium be obtained, (6) that several large combined gynæcological and maternity hospitals be instituted on the lines of the Rotunda Hospital; (7) that the student should spend much less time watching operations he will never perform, and a great deal more time watching normal labour while living in a maternity hospital There is no need for him to spend more time at gynæcology

The efforts at improvement during the last 20 years have failed The general public are getting alarmed There is, I fear, a strong probability that a State medical service may be forced on the profession, and the bad state of midwifery may be a strong argument in its favour

When I reflect on the care, skill, team-work and money expended in the operating theatres of our land in patching up broken men and women, and reflect on the inadequate training which allows men to kill and cripple women in their prime women who are performing the act for which they were created; when I consider the sum total of misery which is daily mounting through bad obstetrics when I realise that the country of Simpson, Lister Smellie, and Hunter is no longer mentioned in the literature of obstetrics, I feel constrained in all humility to make a plea for radical changes in the attitude towards midwifery and to hope that these changes will be made by the profession before unnecessary and ill directed control is exerted by the State

---

SUBCUTANEOUS FIBROID SYPHILOMATA

A RARE MANIFESTATION OF LATE SYPHILIS

BY C WORSTER-DROUGHT MD CAMB,
MRCP LOND,
ASSISTANT PHYSICIAN TO THE METROPOLITAN HOSPITAL, TO THE WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, AND NEUROLOGIST TO BETHLEM ROYAL HOSPITAL

THE condition for which Parkes Weber[1] in 1920 suggested the name "subcutaneous fibroid syphilomata" is admittedly a very rare manifestation of late syphilis Indeed so scanty is the literature of the subject that Goodman[2] on reporting a case in 1921, claimed that only two such cases had previously been recorded, and further that when he and Young[3] published a case in February, 1920, there was at that time no similar case in the literature.

In the case here described, bilaterally symmetrical lesions involved the ulnar nerves and yielded rapidly to antisyphilitic treatment

Description of Case

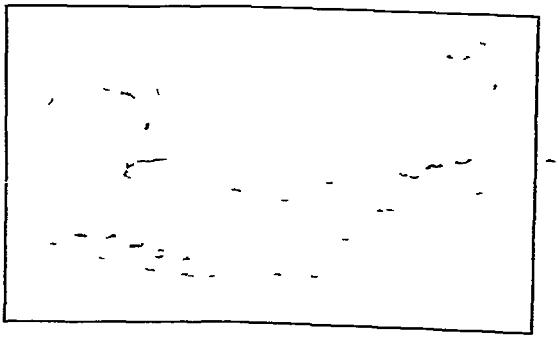
The patient is a woman, aged 27, married three years, no children and no history of miscarriage She has had a slight goitre since the age of 14, and at 12 years had an attack of diphtheria, otherwise no previous illnesses She gives no history suggesting acquired syphilis

Family History —Her father died at the age of 67, having suffered for over 12 years from a condition the patient terms "creeping paralysis," the description of which suggests tabes dorsalis (intense pain in legs, unsteady gait, and loss of control of bladder) Her mother, still alive, has had epileptic fits (average frequency one per month) since the age of 15 An elder sister died at 30 with Graves's disease, one brother, aged 35, has a goitre, and three elder sisters are healthy

History of Present Condition —The patient states that during the past three months small lumps have developed on the inner and posterior aspect of both forearms, they first appeared just below the elbows and gradually spread downwards towards the wrist At first the lumps were quite painless, but more recently she has had neuralgic pain

Condition on Examination —A series of hard subcutaneous nodules extend downwards along the inner aspects of both forearms from just below the olecranon to a point three inches above the styloid process of the ulna The nodules are bilaterally symmetrical and diminish progressively in size from above downwards, those nearest the elbow being the largest and varying from 1 to 2 cm in diameter At the lower end of the series the lesions have a diameter of only a few millimetres (Fig 1 is a semi-diagrammatic representation of the condition which did not show well in a photograph) The nodules are quite hard and adherent to the deeper tissues the skin over them however, is freely movable The majority are quite painless on palpation and only a few situated within an inch or so of the upper limit of the series on each side give rise on firm pressure to tingling pain referred to the little and ring fingers In the deeper tissues of the upper third of the forearm, just anterior to the ulna and in the region of the ulnar nerve some small nodules can be felt, pressure on these also produces pain in the distribution of the ulnar nerve Over the ulnar area of each hand there is some hyperalgesia to pin-prick. The interossei hypothenar and adductor pollicis muscles, however, show good voluntary movement and react normally to faradism There is some parenchymatous enlargement

FIG 1

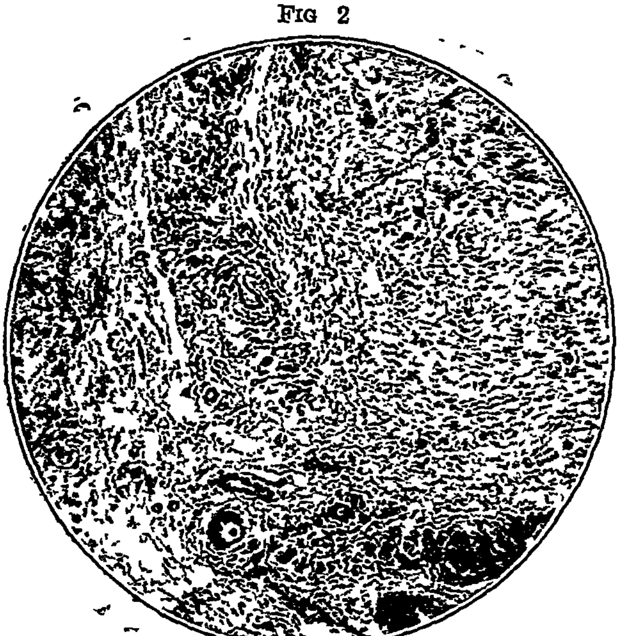


Semi-diagrammatic representation of condition of patient of the thyroid gland with pulse-rate of 76 and no signs of hyperthyroidism All other systems show no abnormal physical signs

X ray examination of the forearms reveals some nodes on the periosteum of the ulna on both sides, but not corresponding to the nodules seen and felt in the tissues

Pathology —To determine the diagnosis of the condition, one of the nodules a short distance below the elbow was excised and submitted to Dr Clement Lovell for histological examination The report was as follows "The small tumour, which is tough and elastic on section, is a gumma Sections stained with hæmotoxylin and Van Giessen stain show, on microscopical examination, masses of fibrous tissue separated by a looser tissue which is highly vascular The vessels in this latter area are surrounded by aggregations of inflammatory cells, chiefly small round cells Some of the vessels show thickening of the intima with very little infiltration of the vessel wall, other vessels show thickening of the adventitial coat with marked infiltration by small round cells" (Fig 2). The blood serum yielded a positive Wassermann reaction

FIG 2



Section of syphiloma (× 70) showing fibrous tumour surrounded by a zone of inflammatory tissue In this zone are many vessels showing endarteritis obliterans with periarteritis

Subsequent Progress —The patient was given six intravenous injections of novarsenobillon (two doses of 0 45, two of 0 75, and two of 0 9 g) alternating with six intramuscular injections of mercury cream (1 gr of Hg per dose), one injection being given each week Potassium iodide (gr 10 t d s) was also taken by the mouth By the time the fourth injection of novarsenobillon was reached all pain had disappeared, and there was a remarkable diminution in the size and consistency of the nodules When the last of the series of injections had been given no nodules were visible, and all that could be felt was a slight induration of the subcutaneous tissue at the sites previously occupied by the nodules When seen six months later there had been no recurrence, and it was even difficult to be sure of any degree of tissue thickening

Subcutaneous Syphilomata. General Clinical Description

The age incidence varies between 27 and 60 years in the recorded cases and both males and females are affected (three males and six females) The lesions consist of nodules varying in size from that of a pea to that of a chestnut The most frequent site is the ulnar border of the upper part of the forearms, the larger nodules being placed near the olecranon, and in distribution they are, as a rule, remarkably symmetrical The nodules may also be found in the region of the knee, particularly in relation to the ligamentum patellæ, between the patella and the anterior tuberosity of the tibia, more rarely they extend downwards towards the ankle Those occurring in the lower limb are usually larger and less firm and hard than those in the upper limb. In character the nodules are of fairly regular rounded or oval shape and of a peculiar wooden hardness, a most unusual feature of gummata They are themselves painless, and it is only when they lie in relation to a nerve, as in the case reported above, that any pain is experienced The skin overlying them is freely movable, but they are usually adherent to deeper structures X ray examination, when performed, has shown no bony changes, in my case, however, there were nodes on the periosteum of the ulna which did not correspond to the nodules felt in the tissues. The lesions develop slowly, attaining a maximum size in a period varying from a few months to two years in different cases, and then remain stationary

Their *syphilitic* nature is proved by the presence of a positive Wassermann in all recorded cases in which this test has been performed and also by the histological character of the nodules—viz, that of an organising gumma Microscopical examination shows a *chronic* inflammatory lesion which has become fibrous without undergoing true gummatous or necrotic changes Goodman and Young in their case made from a nodule a preparation by Levaditi's silver impregnation method, but *Treponema pallidum* was not found In most of the cases there has also been a history indicating syphilis—chancre, miscarriages, &c —and, in a few, other signs of syphilis —*e g*, a tertiary syphilide in Goodman's case In my case a congenital origin is possible, the history suggesting that the patient's father had suffered from tabes dorsalis In those cases treated on modern antispecific lines the nodules disappeared

Summary of Cases Previously Recorded

1 Goodman and Young's case[3] Woman, aged 29, married No history of syphilis, one abortion at the fourth month and no subsequent pregnancies Wassermann reaction positive Bilaterally symmetrical nodules extending downwards from two inches below the olecranon to the styloid process of the ulna, also a single mass over left knee and in the ligamentum patellæ Duration eight years Microscopical diagnosis Granuloma, probably syphilitic

2 Parkes Weber's case[1]. Man aged 60 Gonorrhœa at age of 20, but no history of syphilis Wassermann reaction positive Multiple subcutaneous nodules present on legs, chiefly right and extending downwards from just above the knee to the ankle, in addition, one nodule was situated on the outer side of middle of right thigh Duration seven years The condition was associated with peri-urethral induration of the penis (induratio penis plastica) and also old disseminated choroido-retinitis of right eye Microscopical diagnosis. Tertiary syphilitic lesion become fibrotic.

3 Goodman's case[2] Man aged 36 History of chancre ten years previously, but no secondary symptoms W R. positive Two nodules were present on the right forearm below the olecranon and three on the left forearm, the first of the latter was symmetrical with those on the right side, the second was situated over the internal condyle, and the third two inches above the olecranon On the left leg a smaller nodule was present over the tubercle of the tibia. Duration eight years Over the metacarpal of right thumb there was also a serpiginous tertiary syphilide 2 × 1¾ in Microscopical diagnosis of nodule Gumma The tumours disappeared following treatment with 12 intravenous injections of arsphenamine, the less recent leaving only a slight induration

4 Howard Fox's case[4] Negress aged 45 No definite history of syphilis, two children in good health and two miscarriages W R strongly positive. Nodules on both forearms along ulnar borders and also in the region between patella and tuberosity of tibia on both knees Duration two years Microscopical diagnosis Organising gumma. The lesions responded slowly and imperfectly to intravenous injections of arsphenamine, but the patient attended at only irregular intervals

5 In the course of his communication, Howard Fox mentions another case which he observed in 1919 Negress aged 34 No history of syphilis, but had three children, all of whom died as infants W R positive Nodules present on olecranon and ulnar borders of both forearms and also on both knees below the patella Duration 13 years Microscopical diagnosis · Unsatisfactory, as piece of tissue was too small and patient was lost sight of

Howard Fox's communication was read at the forty-fourth annual session of the American Dermatological Association, Swampscott, Mass , in June, 1921 In the subsequent discussion the following speakers mentioned that they had met with similar cases

6 T E Lane Man aged 45 Nodules on ulnar borders of each forearm near olecranon The lesions had almost disappeared after six injections of arsphenamine

7 J F Schamberg Two cases in negresses, each showing symmetrical cartilaginous nodules below the elbows

8 J C Fordyce also mentioned a case of nodules on one elbow

Juxta-articular Nodules

The clinical similarity of the tropical condition known as "juxta-articular nodules" to subcutaneous syphilomata was commented upon by Goodman and Young Juxta-articular nodules appear first to have been described by MacGregor and were later, in 1909, studied in detail by Jeanselme[5] They occur in natives of many tropical countries, including Java, Siam, and tropical Africa According to Manson,[6] juxta-articular nodules are round or oval multiple symmetrical nodules, painless and very hard, and increase slowly in size until they may attain the size of a small orange Broden and Bernard's analysis[7] indicate that the nodules are more frequent in the lower limbs than the upper

In his original communication, Jeanselme described juxta-articular nodules as of various sizes, usually globular in shape and often collected together in masses At first they lay deep in the subcutaneous tissues, some freely movable and others appearing to be adherent to the periosteum, from which possibly they originated Later the nodules became more superficial and might be incorporated in the skin Beyond distension and slight discoloration at the highest point the skin underwent no change The nodules were remarkably symmetrical and occupied the extensor aspects of the extremities, with a tendency to surmount bony prominences and to group themselves near joints—e g, in the arms about the olecranon, acromial process, and dorsal surface of fingers, and in the legs about the great trochanter, head of tibia, and external malleolus Microscopically, the nodules were divisible into three zones —

1 External zone of inflammation made up of fibrous tissue, numerous blood and lymph capillaries, plasma and polymorphonuclear cells, and large fixed cells with a fibrillated reticulum.

2 Intermediate transitional zone of gradually homogenising connective tissue which lost its fibrillar structure and stained deeply with eosin

3 Internal zone of degeneration formed of irregular homogeneous and translucent blocks Bacteriological examinations proved negative

Jeanselme considered that the nature of the nodes was not revealed by microscopical examination and that they had no relationship to syphilis, tuberculosis, or xanthoma, nor were they fibromata nor tophi Davey[8] considered them to be a late manifestation of yaws An organism has been claimed by some to be the ætiological factor, but this has been denied by others Thus, Van Dijke and Oudendal (1922–23) and Soberheim (1924) claim to have demonstrated spirochætes in the nodes, Gongerot a fungus which he placed under Nocardia, and Ouzilleau (1913), filarial elements (quoted by H. S Stannus[9])

In 1920 Poupelain,[10] in reporting five cases of juxta-articular nodules, stated that he had found they were rapidly cured by novarsenobillon injections and drew further attention to their possible association with syphilis In the same year Montel[11] described four cases, also responding favourably to novarsenobillon, while in 1921 Da Matta,[12] Noque,[13] Broden and Bernard[7] reported similar cases Foley and Parrot,[14] also in 1920, in reporting 21 cases of juxta-articular nodules, drew attention to the presence in their cases of specific lesions, a history of abortions or of infant mortality and in some the presence of a positive W R In many of the cases mercurial treatment also proved efficacious In the following year these authors[15] recorded a further case showing a partially positive W R

Cange and Argaud[16] also in 1921, in reporting two cases, supported the view that the nodules were syphilitic in origin Their first case was that of a woman, aged 30, who presented symmetrically placed nodules on the posterior surface of the upper third of both forearms, extending downwards from the olecranon. They varied in size from a small nut to an apricot and were hard, mobile, and painless The W R was negative The skin over the area occupied by the nodules showed, it is said, erythematous papular lesions (? specific) Histologically, one of the nodules showed a fibrous tissue growth with giant cells, obliterative endarteritis, and perivascular infiltration of plasma cells Cange and Argaud's second case[17] was that of an Algerian woman, aged 56, who six years previously had acquired syphilis from her husband She developed a chancre on the left labium and later a macular roseola and anal and vulvar condylomata In spite of antispecific treatment, ocular symptoms and nodules developed one and a half years later One nodule was present on each elbow, the lesions being round, very hard, and freely movable under the skin

It would appear, therefore, that there must either be a very close relationship between "subcutaneous fibroid syphilomata" and many of the cases reported as examples of juxta-articular nodules or that in some instances the two conditions have been confused Indeed, cases such as Cange and Argaud's first case appear almost identical with the former condition H S Stannus,[9] in a recent admirable review of the relationship of yaws and syphilis, states that Gutierrez[18] has done well to call attention to the fact that juxta-articular nodules must be differentiated from subcutaneous fibroid syphilomata, which closely resemble them, but can be distinguished histologically To quote Stannus "It appears probable that lack of appreciation of these facts has led many observers . . . to make an incorrect diagnosis, and that a diagnosis unsupported by histological examination in the absence of a history above suspicion must remain a doubtful one Both sets of lesions, so long as they have not reached an advanced stage of fibrosis, respond to treatment by salvarsan"

Syphilitic Bursitis

The possibility of relationship between subcutaneous syphilomata and syphilitic lesions in bursæ has been considered by Howard Fox The whole subject of bursal syphilis was admirably reviewed in 1909 by Churchman,[19] who, in a thorough search of the literature, was able to collect 26 undoubted cases Of the 26, ten presented somewhat similar features to the cases under discussion, and, as H Fox points out, most of the points on which, according to Churchman, the diagnosis of bursal syphilis is based, might apply to some of the cases of subcutaneous syphilomata —viz, history or coexisting signs of syphilis, spontaneous development, slow evolution, symmetrical distribution, absence of pain, and joint involvement In most cases reported as subcutaneous syphilomata, however, the situation of the nodules precludes any connexion with bursæ, and microscopical examination fails to show any tissue resembling that of a bursa

I have to express my indebtedness to Dr Clement Lovell, pathologist to Bethlem Royal Hospital, for the pathological investigations, and also to Dr. E Le Maistre for drawing my attention to the case.

References

1 F Parkes Weber Brit Jour Dermatol and Syphilol, 1920, xxxii, 173
2 Goodman, H Ibid, 1921, xxxiii, 355
3 Goodman, H, and Young, W J Amer Jour Med. Sciences 1920, clix., 335
4 Howard Fox Arch Dermatol and Syphilol, 1922 v, 198
5 Jeanselme, E Précis de Pathol Exotique Paris, 1909, 734.
6 Manson, P *Tropical Diseases*, London, 1921
7 Broden and Bernard Trop Dis Bull, xxii, 799
8 Davey Trop Dis Bull, 1914, v, 418
9 Stannus H S Trop Dis Bull, 1926, xxiii 81.
10 Poupelain Bull Soc de Path Exotique, 1920
11 Montel Ibid
12 Da Matta Brazil Medico, 1921
13 Nogue Bull de Soc Med-Chir de l Ouest Africa, March 13th, 1921
14 Foley, H and Parrot, L Bull de Soc Path. Exotique, March, 1920
15 Foley and Parrot Ann de l'Inst Pasteur de l'Afrique, No 1, 1921
16 Cange, A and Argaud R Paris Méd 1921, xi 509
17 Cange and Argaud Gaz d Hôpit 1922 xcv 741.
18 Gutierrez Trop Med Bull, 1925 xx 111, 22
19 Churchman J W. Amer Jour. Med Sciences, 1909, cxxxviii, 271

SOME POINTS IN THE PROGNOSIS OF AURICULAR FIBRILLATION *

BY H WALLACE JONES, M.Sc., M.D. LIVERP., M.R.C.P. LOND.,
SENIOR HON ASSISTANT PHYSICIAN, LIVERPOOL ROYAL INFIRMARY

(*From the Heart Department of the Royal Infirmary.*)

IT is impossible to over-emphasise the importance of auricular fibrillation in diseases of the heart, for more than half of the cases dying of heart failure show this abnormal rhythm at some time or other before death. The prognosis in fibrillation, therefore, is of some moment, especially as there are such wide differences in the time lived by patients suffering from this irregularity—some dying within a few hours of the inception of the abnormal rhythm, while others live for many years without any marked impairment of their activities.

The dominant factor in the prognosis is the condition of the heart muscle, and it must be our aim in forming a judgment in these cases to find out as much as we can with regard to its condition. The evidence will naturally group itself into two headings: (1) clinical evidence, (2) electrocardiographic findings.

Clinical Evidence.

The *onset* of auricular fibrillation is always sudden, and in making a prognostic judgment the symptoms which accompany the onset are extremely important, and give valuable clinical evidence of the state of the functioning power of the heart. If the patient is quite unaware when the change from the normal to the abnormal rhythm took place it shows, as a rule, that the heart muscle is fairly good, and the outlook is much more favourable than if the change was accompanied by severe distress and evidence of sudden heart failure, generally of the "congestive type." This sudden heart failure is the result of the inception of the rapid and disorderly action of the heart caused by the fibrillation. When there is much distress at the onset the outlook is grave, and indicates a considerable impairment of the heart muscle—while occasionally the symptoms are so severe that the patient may only survive a few hours.

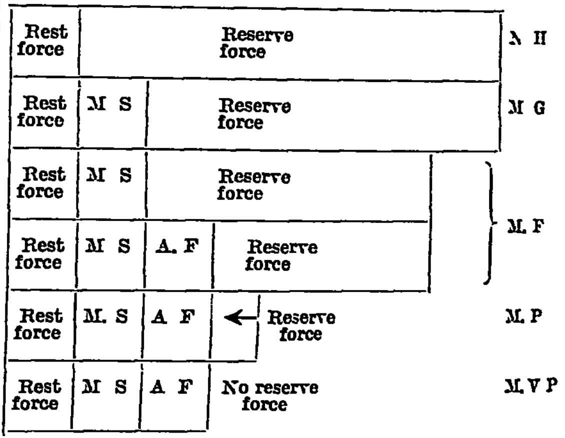
There is one type of auricular fibrillation, however, in which the change from the normal to the fibrillation is not accompanied by marked distress, though the outlook is unsatisfactory, when cardiac failure occurs, and that is the type in which the heart-rate remains persistently slow during the fibrillation when not under the influence of digitalis. In this type there is usually marked myocardial damage, giving rise to delay in the junctional tissues and therefore partial heart-block. The slow rate, with fibrillation, is for a time an advantage for the heart, but when these cases commence with symptoms of cardiac failure the outlook is very bad—as they respond so unfavourably to treatment with digitalis or strophanthin.

Rest Force and Reserve Force.—In order to get a clear idea how this variability in the symptoms is brought about it is necessary to consider the forces at work in the heart.

Mackenzie[1] divided these into "Rest force," or force necessary to maintain the circulation when the patient is at rest, and the "Reserve force" which is drawn upon when any effort is undertaken, however slight.

In the diagram the normal heart is shown with an enormous "reserve force" to draw upon when any effort is undertaken. If mitral stenosis is present the disability of this valvular lesion curtails somewhat the "reserve force," but if the heart muscle is in good condition this limitation is so slight compared with the size of the "reserve force" that the patient is unaware of it. If the "reserve force" is diminished by a damaged heart muscle, the disability imposed by the mitral stenosis becomes more obvious by limiting the response to effort.

Diagram showing "Rest Force" and "Reserve Force," with Auricular Fibrillation



M. S = Mitral stenosis A F = Auricular fibrillation
N H = Normal heart M G = Muscle good M F = Muscle fair M. P = Muscle poor M. V P = Muscle very poor

The onset of auricular fibrillation imposes an additional load at the expense of the "reserve force," and if this is already curtailed considerably by previous damage in some the response to effort becomes much restricted. The fibrillation may entirely use up the "reserve force," causing the symptoms of heart failure to appear when at rest, and these may be so severe that the patient only survives for a few hours; while in other cases after rest and treatment a certain amount of "reserve force" may be regained. After fibrillation has once been established the outlook depends on a number of factors independent of the abnormal rhythm.

The patient's *response to effort* is important and gives as a rule one of the best indications of the functioning power of the heart. Where the response is considerably curtailed, especially when this limitation is rapidly increasing, the outlook is very grave.

Marked *cardiac enlargement* is another unfavourable factor in prognosis, and indicates a considerable myocardial damage in addition to the fibrillation.

The presence of a considerable degree of *valvular disease* also makes the outlook less favourable, and at the same time renders the attempt to establish the normal rhythm with quinidine more dangerous, especially in mitral stenosis.

In fibrillation it is extremely difficult to give a definite prognosis until one has had the opportunity of observing the patient's *response to treatment*. This consists, as a rule, in attempting to limit the heart-rate with digitalis or strophanthin, or trying to convert the fibrillation back to a normal rhythm with quinidine sulphate.

When the heart, uncontrolled by digitalis, is beating at a rapid rate the distress may be considerable, but it does not indicate per se that the ultimate prognosis is grave, if it responds readily to digitalis. Cases in which nausea and vomiting are readily produced by digialis are unfavourable as a rule, especially if tinct opii added to the digitalis or the substitution of Nativelle's granules fail to overcome it. One has then to depend on the intravenous injection of strophanthin to slow the heart-rate, which is rather a difficult method to keep up for any length of time, or the administration of tinct strophanthi by the mouth, which is generally an unsatisfactory proceeding.

Quinidine sulphate, when it re-establishes the normal rhythm, improves the outlook considerably, and the change may remain permanent, but in the majority unfortunately it tends to revert sooner or later to fibrillation If fibrillation occurs during the course of an acute infective disease, such as pneumonia, the outlook is extremely grave and a fatal termination is almost inevitable—the fibrillation in these acute toxic conditions is very resistant to treatment Fibrillation in Graves's disease is, as a rule, a serious complication, and often an adequate response to treatment is not obtained until partial thyroidectomy has been performed

---

* Based on a paper read before the Liverpool Medical Institution

In giving a prognosis in all cases of auricular fibrillation it must be remembered that ventricular fibrillation is liable to occur at any time with, in consequence, sudden death of the patient

Statistics of Expectation of Life in Auricular Fibrillation

I have attempted in this investigation to collect all the cases of auricular fibrillation which have attended the heart department of the Royal Infirmary, and by means of postcards sent out every three or four months, to obtain the expectation of life, from the time of their attendance in the department, with symptoms of heart failure, until their death, using only those cases in which the exact date of death is known

General Cardiac Mortality (All cases attending the department)		*Cases of Auricular Fibrillation* *General Mortality*	
No of cases	870	No of cases	118
„ deaths	119	„ deaths	27
Mortality	13 7 %	Mortality	23 %

Mortality in fibrillation cases almost double the general cardiac mortality

Comparison of the Two Main Groups of Fibrillation, the Rheumatic Type and the Senile Type

GROUP 1 —*Auricular Fibrillation of Rheumatic Origin.* (20 cases)		GROUP 2 —*Senile Auricular Fibrillation* (6 cases)	
Av E L	3 y 6 m.	Av E L	8 5 m
Males	2 y 1 m	Males	5 5 m
Females	4 y 1 m.	Females (1 case)	1 y 11 m

Av E L =Average expectation of life, Y =years M =months

Expectation of life in rheumatic cases nearly five times as long as senile cases

Comparison of Cases of Mitral Stenosis with and without Fibrillation

GROUP 3 —*Mitral Stenosis, with Auricular Fibrillation* (15 cases)		GROUP 4 —*Mitral Stenosis, with Normal Rhythm* (13 cases)	
Av E L	2 y 8 m	Av E L	1 y 10 m
Males	1 y 6 m	Males	1 y 6 m
Females	3 y 1 m	Females	2 y 6 m

Comparison of Cases of Aortic Regurgitation with and without Fibrillation

GROUP 5 —*Aortic Regurgitation with Auricular Fibrillation* (6 cases)		GROUP 6 *—*Aortic Regurgitation with Normal Rhythm* (20 cases)	
Av E L	4 y 9 m.	Av E L	1 y 9 m.
Males	3 y 5 m.	Males	1 y 2 m
Females (1 case)	11 y 4 m	Females	4 y 1 m

* With Wassermann reaction positive the average duration of life in this group was 1 year 5 months

Expectation about twice as long with auricular fibrillation as without

Comparison of Cases of Fibrillation with and without Marked Cardiac Enlargement

GROUP 7 —*Auricular Fibrillation with Marked Cardiac Enlargement* (11 cases)		GROUP 8 —*Auricular Fibrillation without Marked Cardiac Enlargement* (18 cases)	
Av E.L	2 y	Av E L	3 y 7 m
Males (7)	1 y 4 m	Males (8)	3 y 8 m
Females (4)	3 y 3 m	Females (10)	4 y 4 m

Electrocardiograph Findings

In the electrocardiographic appearances of auricular fibrillation Hewlett and Wilson[2] have drawn attention to the fact that there are two main types, the coarse type and the fine type, depending on the size of the fibrillary waves

I have compared the average expectation of life for typical examples of these two types and find that they are approximately equal

Expectation coarse fibrillation (13)	3 y
„ fine „ (16)	3 y 7 m.

Premature beats, of course, always ventricular in type, often occur with fibrillation

Expectation of life with premature beats (5)	4 y 9 m
„ „ in simple auricular fibrillation (5)	3 y 9 m

There is very little difference between them, but it is slightly in favour of the cases with premature beats Willius[3] has suggested that premature beats in auricular fibrillation are an unfavourable sign, but in this series one of the cases with premature beats lived 11 years and two others five years, so that it cannot be a very lethal condition

Influence of Bizarre Q R S on Auricular Fibrillation

Expectation with bizarre Q R.S including one bundle lesion (6)	1 y 4 m
Expectation with simple auricular fibrillation	3 y 9 m

There is marked shortening in the expectation of life, with a bizarre Q R S.

Cases in which there is an inverted "T" and Auricular Fibrillation—In all cases the patients were under the influence of digitalis

Expectation with "T" inverted	3 y 4 m
„ „ simple auricular fibrillation	3 y 9 m

Practically equal

Interpretation of Results

In the interpretation of these results it must be remembered that auricular fibrillation is always a serious disability to the heart, and the apparent contradiction which occurs in some of the groups, where the expectation of life is longer with fibrillation than with normal rhythm, is due to the fact that the cases in this series were taken from patients suffering from varying degrees of heart failure, all sufficiently advanced to necessitate their attendance at a special department In the fibrillating case it is the onset of the fibrillation which has given rise to the symptoms necessitating the patient's attendance at the clinic, while in the other group, the failure with a normal rhythm, the failure is the result of myocardial inadequacy itself, for which treatment is relatively of little value The fibrillating case, on the other hand, can, as a rule, be controlled by the digitalis group—i e, the cause of the cardiac failure can be met with adequate treatment, and in those patients with relatively good heart muscle the outlook is comparatively good †

Conclusions

These conclusions are based on cases with evidence of cardiac failure (1) Auricular fibrillation is of more serious significance in senile than in rheumatic heart disease, (2) in cases of mitral stenosis the presence of fibrillation makes little difference to the expectation of life, (3) in cases of aortic regurgitation the expectation is better when fibrillation is present than with a normal rhythm, (4) the prognosis is better with aortic regurgitation than with mitral stenosis, (5) with marked cardiac enlargement the outlook is more grave; (6) the expectation of life is longer in females than males; (7) in the electrocardiographic findings the presence of a bizarre Q R S is of most significance in the prognosis

References—1 Sir James Mackenzie Diseases of the Heart 2 A. W Hewlett and F N Wilson Arch Int Med, 1915, xv, 786 3 F A Willius Minn Med, 1920, iii, 365 4 John Parkinson and A E Clark-Kennedy Quart Jour Med., 1926, No 74

---

† In a recent paper published since this communication was read Parkinson and Clark-Kennedy[4] have also drawn attention to this difference in the outlook of fibrillating and non-fibrillating cases, once heart failure has occurred.

CARBOHYDRATE METABOLISM IN DIPHTHERIA

BY FRANCIS J. HECTOR, M D BRISTOL, M R C S ENG,
ASSISTANT RESIDENT MEDICAL OFFICER, HAM GREEN HOSPITAL, BRISTOL

WHILE chronic disorders of carbohydrate metabolism have been very extensively investigated, the causes and consequences of more acute derangements have received much less attention The pathology, both of experimental diphtheria in animals and of diphtheria in man, affords abundant evidence that the diphtheria toxin has a marked effect upon the various tissues which are factors in carbohydrate metabolism—that is, the liver, the pancreas, the kidneys, the thyroid, the pituitary glands, and the chromaffin system In diphtheria we have to consider a metabolic disturbance caused, not by a slow toxæmia or a gradual auto-intoxication of certain gland cells, but by a massive dose of a potent poison such as the diphtheria toxin

Investigations have been carried out upon a number of cases of diphtheria of various degrees of severity and at different stages Cases which bore in their early stages a clinical resemblance to diphtheria but which were afterwards found not to be suffering from this disease were also investigated The following tests were performed.

1 Estimation of blood-sugar (MacLean's method) before and after carbohydrate ingestion

2 Estimation of carbon dioxide in the alveolar air by Fridericia's apparatus

3 Alkali tolerance-test (modification of Sellard's method) All the cases were treated by alkali therapy, receiving per diem, according to age, sodium bicarbonate 4–8 g, potassium bicarbonate 0 6–1 2 g, and calcium carbonate 0 6–1 2 g The reaction of the urine in response to the administration of the alkali was observed

4. Investigation of hepatic metabolic function (Shirokauer's [1] method)

Urinary examinations. (*a*) *Acetone bodies* (*b*) *Acidity* (*c*) Ammonia coefficient

Unfortunately, it was found inexpedient to determine the sodium bicarbonate content of the blood, nor has it always been possible owing to the age or the serious condition of some of the patients examined to carry out the whole of the tests upon the same individual, but this has been done wherever practicable.

Clinical Records of Cases Investigated

CASE 1 —F. C, male, aged 4½ years Admitted Dec 9th, 1924, *on second day of illness He had a thick, fairly extensive* patch of diphtheritic membrane on both tonsils, 30,000 units of diphtheria antitoxin were given. Bacteriological report, positive Up to the time of the test, on the third day of illness, he had vomited once Pulse was 120, first cardiac sound decidedly weak, temperature 98 6°F He was of an ashen colour and there was a fair amount of collapse Diet was 5 oz of milk every four hours, and four hours after last feed blood-sugar was 0 062 per cent, 15 g of glucose were given in 100 c cm. water, and blood was taken at half-hourly intervals for two hours The blood-sugar (Table I) took one hour to reach its apex of 0 181 per cent, and at the end of two hours had only fallen to 0 162 per cent. There was no glycosuria throughout the test. The blood-sugar curve is similar to those obtained in mild early cases of diabetes There is slight delay in absorption, the curve taking one hour to reach its apex (the maximum concentration may have occurred between the taking of the half hour and the one hour specimens) The chief feature, however, is the undue prolongation of the curve, which at the end of two hours is still far above the fasting level This suggests the presence of a definite degree of deficiency in the carbohydrate storage mechanism, although this deficiency is not sufficient to carry the sugar concentration over the renal threshold. This delayed fall is all the more striking when the probable slow rate of absorption is considered Urine contained acetone and aceto-acetic acid Acidity=73 9 (in spite of alkali therapy), ammonia coefficient=1/5

TABLE I II

Time taken	Blood-sugar per cent	
Fasting	0 062	0 081
After 15 g glucose—		
½ hour	0 126	0 175
1 „	0 181	0 143
1½ hours	0 175	0 131
2 „	0 162	0 112

Glycosuria nil

Two days later the child developed slight symptoms of palatal paralysis (which afterwards became very marked) and acute circulatory failure On the tenth day of disease the general condition had greatly improved. Temperature normal, pulse 72 Fasting blood-sugar was now 0 08 per cent and the curve corresponded very closely to the normal (Table II) The storage defect was very small and the rate of absorption normal Urine showed albumin, acetone, and diacetic acid in faint traces Acidity=31 5, ammonia coefficient 1/20

During the time, therefore, that the child was under the influence of the diphtheria toxin there was a definite condition of acidosis, a low fasting blood-sugar, and a definite deficiency of the carbohydrate storage mechanism. Recovery was uneventful and complete

CASE 2 —J G, male, aged 12 years Admitted Jan. 13th, 1925, on second day of illness A fairly severe case of diphtheria with extensive membrane, considerable faucial œdema, greatly enlarged cervical glands, and marked prostration. 40,000 units of diphtheria antitoxin were given. Bacteriological report, positive On the 15th pulse was 120 and temperature 101° F Cardiac sounds of poor quality Fauces still thickly covered with exudate and cervical glands very enlarged Prostration severe The blood-sugar estimations (Table III) showed a marked deficiency of the storage mechanism very similar to that described in Case I There was no glycosuria *Urine contained acetone* and diacetic acid Acidity=41, ammonia coefficient=1/10

TABLE III IV V

Time taken	Blood sugar per cent.		
Fasting	0·075	0·075	0·075
After 30 g —	Glucose	Læval	Glucose
½ hour	0 131	0·075	0 125
1 „	0 187	0·093	0·081
1½ hours	0 175	0 106	0·056
2 „	0 150	0 112	0·056

Glycosuria nil

The following day the symptoms of toxæmia had somewhat abated Temperature 99 5°, pulse 98, 30 g of lævulose were administered, and the blood sugar estimations (Table IV) showed a small increase in the concentration of blood-sugar, which was at its maximum at the end of two hours *Apart from the evidence of storage defect* there is a rise of 37 mg above the first value and, according to Beaumont and Dodds,[2] a rise of 30 mg or more above the original level indicates a degree of hepatic inefficiency

On Jan 29th the general condition was much *improved* Throat clean, cervical glands normal, temperature normal pulse 76 Following 30 g of glucose blood-sugar curve was normal (Table V) Five weeks later patient developed palatal paralysis Recovery uneventful and complete

During the toxæmic stage of the disease Case 2 showed (*a*) acidosis, (*b*) deficient carbohydrate storage, (*c*) slight hepatic inefficiency

CASE 3 —W C, male, aged 24 years Admitted Jan. 31st, 1925, *on third day of illness* with history of sore-throat and vomiting Temperature 100° F, pulse 108 The fauces were very congested and œdematous, with large atypical patches on both tonsils The patient complained of great pain

TABLE VI *VII*

Time taken	Blood sugar per cent.	
Fasting	0 093	*0 093*
After 50 g —	Glucose	Læval
½ hour	0 175	0 118
1 „	0 150	0·086
1½ hours	0 131	0 112
2 „	*0 106*	0 112

Glycosuria nil

Cervical glands were enlarged. *Direct* smear was negative, but the appearance of the throat was so suggestive of a virulent type of diphtheria, *often associated* with considerable œdema, that 28,000 units of diphtheria antitoxin were given Fasting blood-sugar was 0 093 per cent *Following* the administration *of 50 g* of glucose the blood-sugar estimations were practically normal (Table VI.) Urine acetone nil. Diacetic acid, nil. Acidity=38, ammonia coefficient=1/18 On the following day condition was unchanged and lævulose tolerance-test showed a slight interference with hepatic efficiency (Table VII) There was no glycosuria during either test. The bacteriological result of the culture was negative, and as the condition progressed it manifested itself as a case of quinsy and showed no after symptoms of diphtheria. This case was interesting because, although there was considerable intoxication owing to the septic condition of the throat, yet there was no evidence of a disturbance of carbohydrate metabolism such as occurred in the two previous cases

CASE 4 —Of a similar nature to the preceding one was the case of T T, male, aged 28 years Admitted Feb 9th, 1925, on third day of illness Temperature 102° F, pulse 84 Throat congested. Large atypical patch left tonsil Direct smear negative. Diphtheria antitoxin 16,000 units given. The fasting blood-sugar was 0 112 per cent. and the tests showed no departure from normal (Table VIII) The respiratory quotient gave evidence that the carbohydrate was being utilised On the following day the condition had improved somewhat Temperature was 100 5°, pulse 76, 50 g of lævulose were administered This test showed a very definite interference with hepatic function, a slow rate of absorption, and also a degree of storage inefficiency (Table IX) Bacteriological report on culture, negative A typical quinsy afterwards developed

TABLE VIII IX

Time taken.	Blood-sugar per cent	Respiratory quotient.	Blood-sugar per cent.
Fasting	0 112	0 9	0 118
After 50 g —	Glucose		Lævul
½ hour	0 156	1 15	0 131
1 „	0 112	1 2	0 156
1½ hours	0 125	0 9	0 156
2 „	0 106	0 9	0 156

The last two cases would suggest that the tolerance for lævulose is more affected by septic conditions than by the influence of the diphtheria toxin

CASE 5 —R R, female, aged 14 years Admitted Jan. 12th, 1925, on fourth day of illness suffering from severe faucial diphtheria. 40,000 units of diphtheria antitoxin given Marked toxæmia. Bacteriological report, positive On the eleventh day there was palatal paralysis and on the fifteenth day the blood-sugar was estimated before and after 30 g of glucose. The fasting blood-sugar was 0 086 per cent The blood sugar (Table X.) took one and a half hours to reach its maximum and there was a very definite delay in storage The respiratory quotient rose from 0 8 to 1 2 half an hour after the glucose was given, showing that the sugar was being utilised General condition at the time of examination was quite fair, temperature 98 4° F, pulse 96 Urine contained no acetone or diacetic acid Acidity=45, ammonia coefficient 1/14 Four days later the temperature was 98 4° and the pulse 96 Lævulose tolerance-test was carried out and gave no evidence of hepatic inefficiency (Table XI) Fourteen days later blood-sugar following glucose administration was normal and fasting blood-sugar level was raised (Table XII) Subsequent recovery was complete and uneventful.

TABLE X XI XII

Time taken	Blood-sugar per cent	Respiratory quotient	Blood-sugar per cent	
Fasting	0 086	0 8	0 075	0 106
After 30 g —	Glucose		Lævul	Glucose
½ hour	0 150	1 2	0 075	0 175
1 „	0 150	0 9	0 068	0 156
1½ hours	0 168	0 8	0 082	0 118
2 „	0 156	0 9	0·075	0 100

CASE 6 —E B, male, aged 9 years Admitted Feb 10th, 1925, on fifth day of illness with fauces covered with exudate Profuse nasal discharge 30,000 units of diphtheria antitoxin were given. At the time of the glucose tolerance-test (eighth day of disease) patient was in a very toxic condition Temperature 99° F, pulse 100 Urine acetone, and diacetic acid present. Acidity=58, ammonia coefficient=1/7 The blood-sugar tests showed a very marked delay in storage and the respiratory quotient gave no evidence that the sugar was being utilised (Table XIII) The lævulose tolerance was apparently not impaired, but there was again no evidence that the carbohydrate was being oxidised, and the respiratory quotient was distinctly low throughout (Table XIV)

TABLE XIII XIV.

Time taken	Blood-sugar per cent	Respiratory quotient	Blood-sugar per cent	Respiratory quotient
Fasting	0 086	0 7	0 106	0 75
After 30 g —	Glucose		Lævul	
½ hour	0 150	0 7	0 100	0 75
1 „	0 137	0 75	0 106	0 8
1½ hours	0 162	0 8	0 106	0 75
2 „	0 162	0 7	0 106	0 75

CASE 7 —F B, female, aged 11 years Admitted Feb 16th, 1925, on second day of illness Fauces very swollen and covered with exudate Temperature 100 5° F., pulse 100 Ashen colour First cardiac sound weak. 30,000 units of diphtheria antitoxin given Bacteriological report, positive Urine acetone and diacetic acid present Acidity=64 4; ammonia coefficient=1/165

The following day the general condition had slightly improved. Temperature 100 5°, pulse 100 Appearance less toxic Blood-sugar estimations showed a mild interference with storage of carbohydrate (Table XV) The respiratory quotient in this case rose to unity, showing that a certain amount of oxidation of the carbohydrate was proceeding After two hours of the test had elapsed blood was again taken at hourly intervals up to the end of six hours (Table XVI)

TABLE XV XVII.

Time taken	Blood-sugar per cent	Respiratory quotient	Blood-sugar per cent
Fasting	0 086	0 8	0 112
After 30 g —	Glucose		Lævul
½ hour	0 150	0 9	0 131
1 „	0 137	1 0	0 131
1½ hours	0 143	1·0	0 131
2 „	0 112	0 8	0 112

TABLE XVI

Time taken	Blood-sugar per cent	Time taken.	Blood-sugar per cent
Fasting	0·086		
After 30 g glucose—		After 30 g glucose—	
1 hour	0 137	4 hours	0 106
2 hours	0 112	5 „	0·086
3 „	0 112	6 „	0·062

At the end of four hours it had only fallen to 0 106 per cent, and in six hours it had reached 0 062 per cent., which was little short of being a definite hypoglycæmia The lævulose tolerance-test (Table XVII) revealed nothing definite regarding hepatic inefficiency Seven days later palatal paralysis developed Subsequent recovery was complete and uneventful

CASE 8 —D I, female, aged 11 Admitted Feb 21st, 1925, on seventh day of illness in a moribund condition. Temperature 97° F Patient blue and pulseless Fauces completely covered with exudate Profuse sanguineous discharge from mouth and nose 38,000 units of antidiphtheritic serum were given Urine contained acetone and diacetic acid.

TABLE XVIII

Time taken.	Blood sugar per cent
Fasting (10 mins after inj adrenalin m. iv)	0·075
After 30 g glucose—	
1 hour	0 193
2 hours	0 125
3 „	0 118
4 „	0·068
(Inj adrenalin m iv)	
4½ hours after 30 g glucose	0·075

Acidity=48 5 ; ammonia coefficient=1/4 9 Immediately after injection of adrenalin m. iv the blood-sugar was found to be 0 075 per cent , 30 g of glucose were given and blood-sugar estimated at one-hourly intervals for four hours Blood-sugar estimations (Table XVIII) show no interference with absorption, but a very definite storage deficiency The final reading of 0 068 per cent was decidedly low An injection of adrenalin m. iv was then given Twenty minutes later the blood-sugar was 0 075 per cent It was impossible in this case to estimate the CO_2 content of the alveolar air Twelve hours later the patient died

Discussion

The first noticeable feature is the low value of the fasting blood-sugar in cases of severe diphtheria The average reading is 0 075 per cent , and the lowest 0 062 per cent .This value was materially increased after the stage of toxæmia had passed In view of the very prolonged fall, which the curve almost invariably shows, 0 062 per cent is probably nearer the true fasting value. In each case the blood was taken at least three hours after the last feed, which would consist of 4–6 ounces of milk, representing approximately 5 5–8 5 g of lactose Table XIX shows the effect of 5 ounces of milk on the blood-sugar in a fairly severe case of diphtheria It is seen that at the end of four hours the blood-sugar is still 6 mg above the original level On account of the condition of the patients it was not deemed advisable to withhold nourishment for more than four hours on each occasion when the tests were performed, nor was this necessary as long as it was recognised that the fasting blood-sugar value thus obtained was probably a little higher than the true one

TABLE XIX

Time taken	Blood sugar per cent
Fasting	0 062
After 5 oz milk—	
1 hour	0 125
2 hours	0 100
3 ,,	0 086
4 ,,	0 068

In none of the cases described was there persistent vomiting, which might be held to account for the low concentration of blood-sugar Case 1 vomited once and the fasting blood-sugar was 0 062 per cent In Case 3 (not a case of diphtheria) there was vomiting on four occasions on the day of the test, and the blood-sugar was 0 093 per cent Defects in the glycogenolytic function of the tissues, particularly the liver, might be the cause of the low blood-sugar, especially when the frequency of hepatic lesions is borne in mind The lævulose tolerance-test for hepatic metabolic efficiency has, on the whole, been negative, but it has given conflicting results with other observers and may be of little practical value It would appear that no really reliable and at the same time harmless test of hepatic metabolic function is at present available Jaundice in human diphtheria is very rare and no records of such a complication exist in this hospital In diphtheria in dogs there is a special tendency to jaundice, however, but there are no observations on the state of carbohydrate metabolism Judging by the lævulose tolerance-test only, the metabolic functions of the liver would appear to be more affected in septic conditions of the throat than by diphtheritic toxæmia

Both in animals and in man the diphtheria toxin leaves many and varied post-mortem traces of damage to the suprarenal glands, and interference with their function may, therefore, be expected Case 8 shows the effect of adrenalin in bringing about an increase in the blood-sugar and suggests adrenal insufficiency as a very likely cause for the low blood-sugar value This is quite in agreement with the extreme asthenia, anæmia, and feeble pulse associated with the stage of diphtheritic intoxication In this regard, it is of interest to note that hypoglycæmia, Addison's disease, and the toxic stage of diphtheria, have some common features In cases of severe collapse in diphtheria, epinephrin, when injected, often causes a marked temporary improvement in the condition It is possible that this improvement may be more directly due, in such cases, to its action on the liver in converting glycogen into glucose, than to its powers as a cardiac stimulant, the latter rôle being filled by the glucose as it is evolved

There is not a great deal of evidence concerning injury to the thyroid gland in diphtheria, but any interference with its function would constitute an additional hindrance to glycogen mobilisation if, as Griffith [3] suggests, this gland acts directly through the suprarenal gland The influence of a possible disturbance of pituitary function must also be considered, since impairment of function of this gland results in a subnormal percentage of sugar in the blood

One of the most constant and definite departures from the normal found in these investigations has been the production following the ingestion of glucose of a blood-sugar curve with an abnormally slow decline, and sometimes a late apex When the latter does occur the assumption that there is some delay in absorption offers a reasonable explanation, and one which is quite compatible with the condition of the patient The prolonged fall, like the low fasting blood-sugar concentration, only occurs during the toxic stage of the disease The reasons for attributing the prolonged fall of a curve to a defect in the carbohydrate storage mechanism receive, on the whole, general acceptance There is, however, another factor to be considered—namely, the condition of acidosis which obtains in these cases The existence of this condition is shown by the carbon dioxide tension of the alveolar air (Tables XIII and XIV), the presence of acetone and diacetic acid in the urine, the high urinary acidity, and the high ammonia coefficient (in spite of alkali therapy) The average time taken to render the urine alkaline by the doses of alkalis previously mentioned was 12 days Peters [4] has shown how profound this condition of acidosis can be in severe cases of diphtheria, persistent vomiting often occurring in the absence of suitable treatment Cammidge [5] and other observers have pointed out the effects on the sugar content of the blood of changes in the acid base equilibrium of the systemic circulation These effects are stated to result in hyperglycæmia and glycosuria, and are not pronounced unless there are associated defects of carbohydrate metabolism Therefore, although the increase in the fixed acids, relative to the bases, of the blood may introduce a disturbing element into the control over the concentration of the blood-sugar, the slow decline of the curve is probably mainly due to a defect in the carbohydrate storage mechanism The importance of the regulating and storage function of the liver and the frequency with which hepatic lesions are found in death from uncomplicated diphtheria would suggest that the liver is chiefly at fault concerning this defect But the effect of the diphtheria toxin is widespread among the endocrine system, and the nervous system is also affected In the present state of endocrinology it is not possible definitely to state what would be the effect on carbohydrate metabolism of diphtheritic lesions of these very intricate systems It certainly would appear that an investigation into the effects of the diphtheria toxin upon the functions of the endocrine system in particular would afford a very interesting and profitable field for research

In Case 6, during the time when there was marked toxæmia and acidosis, the respiratory quotient, besides being low, showed no tendency to advance towards unity after the ingestion of carbohydrate In Case 7 the rise was very small, although unity was obtained, but in this case the condition of acidosis was not so marked In Case 4 and Case 5, where there were no symptoms of acidosis at the time, the respiratory quotient reached 1 2 a half to one hour after the carbohydrate was given These variations in the respiratory quotient are not so marked as some reported by other investigators, but their entire absence in Case 6 and the very slight rise in Case 7 would suggest that the oxidation of carbohydrates is at fault This imperfection in carbohydrate metabolism would, of course, lead to the presence in the blood of those acids which are intermediate products in fat katabolism The vomiting which may follow this ketosis completes a vicious circle, the vomiting causing starvation, and the lack of nourishment further aggravating the ketosis In the ketosis of toxæmia of pregnancy and of post-operative "acidosis," if ample carbohydrate can be administered by the rectum subcutaneously or intravenously, the ketosis may be checked, the vomiting cease, and feeding by mouth may be resumed It would appear as if the failure of the power to utilise the blood-sugar initiated the ketosis and that a vicious circle supervened, causing the symptom-complex to persist This cycle may be broken by controlling the vomiting so that food may be given and retained, but the ideal treatment would be the administration of glucose in such a way that it could be utilised. Since there appears to be, in diphtheritic toxæmia, a difficulty, or even inability, on the part of the tissues to utilise glucose, the suggestion of Thalhimer[6] seems of great value Thalhimer suggests that the injection of insulin following the introduction into the blood of a sufficient amount of glucose would overcome this metabolic inefficiency. It is proposed in this hospital to treat experimentally by this method a series of suitable cases of diphtheria as they present themselves If by this treatment the tissues can be provided with the means to utilise glucose, which is the ideal substance for counteracting any tendency to acidosis, then the danger of the toxic stage of diphtheria would be very materially lessened Singularly, few observations are available concerning lesions of the pancreas in death from uncomplicated diphtheria, but the evidence of the respiratory quotient suggests that pancreatic function may be impaired Even in diabetic necrosis the pancreas is often quite normal macroscopically, and careful microscopic examination frequently fails to reveal any histological changes

The hypoglycæmic symptoms which follow an overdose of insulin show how sensitive is the nervous system to a grave metabolic disturbance, and it will be of prime interest to notice whether an attempt to assist or stabilise carbohydrate metabolism in diphtheria will have any good result on the paralytic sequelæ which are so characteristic of this disease

Conclusions

1 That in cases of severe diphtheria, during the stage of toxæmia and acidosis, carbohydrate metabolism is disturbed and unstabilised (*a*) The concentration of the fasting blood-sugar is abnormally low (*b*) There is a marked defect in the storage mechanism (*c*) The ability of the tissues to utilise glucose is diminished

2 That this disorganisation of carbohydrate metabolism passes away with the stage of diphtheritic intoxication

3 The cause of the metabolic disorder is probably to be found in interference with the functions of the liver, the endocrine glands, and the nervous system through the action of the diphtheria toxin

My thanks are due to Dr. B A. Peters, senior medical officer, Ham Green Hospital, Bristol for permission to investigate these cases and to publish the results

Bibliography

1 Shirokauer, H Zeit f klin. Med, 1913, lxxviii, 462
2 Beaumont, G E, and Dodds E C Recent Advances in Medicine, London, 1924, p 119
3 Griffith F R., jun Amer Jour Physiol 1923, lxvi, 659
4 Peters B A Brit Med Jour, 1918, i 10
5 Cammidge, P J Insulin Treatment of Diabetes Mellitus London 1924, p 115
6 Thalhimer W Jour Amer Med Assoc, 1923, lxxxi, 383, 1924, lxxxii, 696

A NOTE ON

DOSAGE IN PHOTOTHERAPY.

BY ALBERT EIDINOW, M B, B S LOND

(*From the National Institute for Medical Research*)

EXPERIMENTS carried out recently indicate that the normal skin is sensitive to sources of light which emit ultra-violet rays shorter than 3100 A U.[1] The skin exposed to any such source of light responds after a latent period of time by an erythema, on which may follow desquamation and pigmentation It has been shown that the degree of erythema produced depends upon · (1) the distance of the skin from the source of light; (2) the temperature of the skin; (3) the kilowatt energy of the source of light and intensity of ultra-violet rays shorter than 3100 A.U. emitted, (4) the individual sensitiveness of the skin to light

From a series of observations on the effects of "ultra-violet radiation" of the skin,[2] it was shown that doses of light which produced erythema increase the non-specific bactericidal power of the whole blood for a period varying from 1–4 hours after the exposure to light There is some evidence[3] of a preliminary stage of depression of the hæmobactericidal power half an hour after exposure The following table gives an indication of the results obtained .—

	Average percentage hæmobactericidal power before and after exposure of skin to mercury-vapour lamp	
	Before	After
Rabbit	35	100
Pig	66	93
Dog	58	91
Man	83	100

From observations on about 180 consecutive patients who were undergoing light treatment, it was shown that the exposure of the skin of the chest and back to the mercury-vapour lamp or arc, which subsequently resulted in erythema, often increased the bactericidal power of the blood An attempt was made to determine the minimal erythema dose of light by previously testing the sensitiveness of the skin[4] In all these cases, and also in the animal experiments, the total surface area of skin irradiated was chosen in an arbitrary manner It has been shown that excessive exposure of the skin to light is a harmful procedure Colebrook[5] found that such exposures may diminish the bactericidal power of the blood But in all these observations stress has been placed upon the ultra-violet or light dosage and not on the area of skin exposed The experiments described in this paper have been carried out to determine the importance in phototherapy of the surface area of skin irradiated.

General Procedure

The skin of a number of rabbits was exposed to the mercury-vapour lamp (M V L.) and the bactericidal power of the blood was determined before and after irradiation The animals were all carefully weighed before the experiment, and the surface area of skin which was exposed to the source of light was controlled and measured At each experiment the dosage of light was estimated by measuring the intensity of ultra-violet rays emitted according to the lethal action on infusoria[6] By these means it was possible to calculate the smallest area of skin per kilogramme of weight of the animal, which after exposure to the M V L produced a definite increase in the bactericidal power of the blood By carrying out a similar series of experiments the importance of the surface area of skin exposed to dosage—i e , length of time of exposure—was observed

---

[1] L. Hill British Journal of Radiology, January 1926

[2] Colebrook, Eidinow, and Hill British Jour Expt. Path. 1924 v, 24

[3] Bannermann Med. Research Council Report 1924–25

[4] Eidinow THE LANCET April 15th, 1925

[5] THE LANCET, July, 1924

[6] Eidinow and Hill Practitioner, August, 1925

A Typical Experiment

The abdomen of six rabbits was shaved by means of soap and a razor The animals were carefully weighed A sterile blood specimen was collected from each animal (by bleeding from the left ear vein), and the blood was defibrinated with a sterile glass rod The animals each in turn were fastened and irradiated, after being covered by a large piece of cardboard having a central perforation in it corresponding to the surface area of skin chosen for irradiation The source of ultra-violet rays was either a water-cooled M V L (2 5 amps +200 volts), applied locally to the skin, or a M V L (2 5 amps +110 volts between electrodes), 3 in distance from the skin The lethal time for infusoria, or I K units, under these conditions was 3 minutes, so each 3 minutes' exposure corresponded to one I K unit The following plan of procedure was adopted in this experiment

A second sterile blood specimen was collected two hours after the irradiation of the skin and was defibrinated as before The bactericidal power of each sample of blood collected was determined by the method described by A E Wright, L Colebrook, and E J Storer [7]

TABLE I —*Summary of Results*

Rabbit No	Wt in grammes	Area of skin exposed to M V L	Area of skin exposed per kilogm wt	Time of exposure	I K units	Average percentage hæmobact Before radiation.	Two hours after radiation	Increase
		sq cm	sq cm	mins				
19	3050	12 6	4 0	30	10	47	56	+9
20	2450	49 0	20 0	6	2	37	77	+40
21	3110	49 0	16 0	12	4	64	91	+27
22	2900	49 0	17 0	24	12	34	90	+56
23	1610	49 0	30 4	60	20	65	90	+33
24	2480	49 0	19 8	6	2	75	93	+18

Conclusions —1 A definite erythema was seen over all the skin areas irradiated, and a marked œdema of the skin of rabbits Nos 19 22, and 23 was seen the following day These three animals later showed desquamation, and a scab formed at the site irradiated 2. In animal No 19 the small skin area irradiated did not produce a decided increase in the bactericidal power, in spite of the massive dosage

Method of Recording and Classifying the Experimental Results Obtained

By these means a series of experiments were carried out in which the surface area of skin exposed to the source of light and the length of time of exposure was controlled In the first series of experiments a very small surface area of skin was exposed For this purpose the water-cooled M V L (K B B) of the Kromayer type was employed, and the light was applied locally to the skin The diameter of the circular patch exposed was 4 0 cm and the surface area was therefore approximately 12 6 sq cm The length of time of exposure was varied from 5 to 30 minutes (2–6 infusoria killing units) In no case could any definite change in the bactericidal power of the blood be observed in this series of experiments Following this, other experiments were carried out in which a gradual increase in the area of skin irradiated and variation in the length of time of exposure were made In all about 120 animal experiments were performed The results of these experiments were grouped together and classified according to the surface area of skin irradiated per kilogramme weight of the animal Each of these series was again classified into similar series according to the time of exposure, expressed in terms of I K units An average of the results of each similar group of experiments was recorded as the final average result obtained The initial bactericidal power of the rabbit's blood, tested against staphylococci, has been found to vary from 30 to 60 per cent , the extent of the increase in the killing power of the blood subsequent to exposure of the skin to ultra-violet light would, therefore, depend upon the initial value of the blood In these experiments the increase in the hæmobactericidal power was expressed in the following terms —

$$\frac{a^2—a^1}{a^1} = \text{Increase in killing power of blood}$$

when a^2 = bactericidal power two hours after radiation
a^1 = bactericidal power before radiation

TABLE II —*Exposure to Light = 2 I K Units* (*Minimal Erythema Dose*)

(A) —No of experiments observed.

(B) —Average of area of skin exposed to M.V L per kg of weight of animal

(C) —Average per cent hæmobactericidal power before exposure to M V L a^1

(D) —Average per cent hæmobactericidal power two hours after exposure to M.V L a^2

(E) —Average increase $\frac{a^2—a^1}{a^1}$

(A)	(B)	(C)	(D)	(E)	
	sq cm				
7	3 83	52 5	53 8	+ 1 3	0 025
6	6 5	51 0	70 0	+19 0	0 37
9	12 5	42 2	61 2	+18 8	0 45
7	17 6	50 0	83 7	+33 7	0 67
6	24 0	34 5	67 0	+32 5	0 94
3	50 4	36 6	69 6	+33 0	0 9
8	83 7	48 5	51 2	+ 2 7	0 056

TABLE III —*Exposure to Light = 4 10 I K Units* (*Maximal Erythema Dose*)

(A) —No of experiments observed

(A1) —I K units

(B) (C) (D) (E) as Table II

(A)	(A1)	(B)	(C)	(D)	(E)	
3	4	4 13	46 6	55 0	+ 3 4	0·072
3	6	4 5	54 3	57 0	+ 2 7	0 05
1	4	8 0	36 0	54 0	+18·0	0 5
3	6	8 1	37 0	62·0	+25 0	0 7
2	4	10 5	42 0	63 0	+21 0	0 5
5	6	12 6	42 6	75 2	+32 6	0 76
3	4	26 7	41 6	72 0	+30 4	0 73
3	8	46 1	31 0	73 0	+42 0	1 35
2	4	60 0	48 0	59 0	+11 0	0 3
4	10	101 7	41 2	42 7	+ 1 5	0·036

Conclusions from Experiments

From this series of experiments the following observations have been recorded —

1 An "erythema" dose of light is necessary to obtain an increase in the bactericidal power of the blood after radiation of the skin

2 In all the experiments in which the minimal erythema dose of light was employed—i e , 2 I K units (*a*) The smallest areas of skin from 1–5 sq cm per kg of weight were subminimal and failed to give a "bactericidal" response (*b*) Areas of skin from 5–10 sq cm per kg were the minimal area which had to be irradiated, to show a definite increase in the bactericidal power of the blood (*c*) Areas of skin from 15–20 sq cm per kg showed a more decided improvement in the bactericidal power of the blood after irradiation (*d*) The areas of skin from 20–50 sq cm per kilogm wt showed the optimal response. (*e*) Areas of skin over and above 50–100 sq cm per kilogm. wt of the animal did not give any bactericidal response and appear to be too large a surface area irradiated

3 When the length of time of exposure is increased so as to produce a greater degree of erythema and œdema of the skin (*a*) On the whole, provided an erythema dose was maintained, no very striking changes other than those already mentioned was observed (*b*) The subminimal areas exposed showed no change (*c*) A slight improvement was seen in the minimal areas—i e , 5/10 and 10/20 sq cm. per kilogm wt (*d*) No rise was seen in the experiments in which large area and intense dosage were employed In some cases a decided fall in the bactericidal power was recorded

4. There therefore appear to be two great factors which control the bactericidal response of the blood to irradiation of the skin (*a*) The surface area of skin irradiated per kilogm wt of the animal. (*b*) The intensity of the erythema produced—i e , the length of time of exposure, &c

In all these experiments the surface area of skin irradiated per kilogm wt of the animal appeared to be the more important factor than the time of exposure or the intensity of ultra-violet rays, provided the erythema dose was maintained Some observers maintain that the biological action of light is in part due to the production of a photo-chemical substance, derived from either the tissue cells or the blood cells, but no definite experimental proof supports this view It is conceivable that an excess of such a substance would inhibit the efficiency of the leucocytes. In many cases of severe sunburn, and also with burns caused from heat and other causes, the surface area of skin irradiated plays an important role in the sequelæ which may follow. It is possible to produce "sunstroke" by irradiating the head with an intense focused beam of visible light, but this effect is due to the penetration to, and the heat effect on, the brain of the visible rays Conversely, it is difficult to seriously damage small animals which have been made "light sensitive" by means of eosin or hæmatoporpyhrin unless a large area of skin is exposed to the source of light

---

[7] THE LANCET, 1923, i , 417, 473

Observations on Human Cases.

It is of interest to correlate the surface area of skin exposed per kilogm wt of the animal to that of the human body. In the case of a person weighing 10 st this roughly gives the following results :—

	Area Sq cm per kilogm wt		Sq in		In. (approx.)
Subminimal area	1–5	=	56	or	7 × 8
	5–10	=	112	,,	11 × 10
Minimal area	15	=	168	,,	12 × 14
	25	=	280	,,	17 × 17
Optimum area	40	=	448	,,	21 × 21
	50	=	560	,,	26 × 26
Maximal optimal area	80	=	896	,,	30 × 30
	100	=	1120	,,	33 × 33

The subminimal area would therefore be 56 sq. in, the optimum area from 280 to 560 sq in, and the maximal optimal area over 896 sq in.

Since these experiments have been carried out, the effect of radiation of the skin on the bactericidal power of the blood has been investigated in over 30 patients who were having light treatment In all these cases the skin of the back extending to the level of the last rib (or 1–2 in below) was exposed to the M V or to the arc lamp In the great majority of cases an increase in the killing power of the blood was observed with a minimal erythema dose of light These results compared favourably to those obtained previously when the skin of the chest and back was irradiated It is beyond the scope of practical clinical methods to carefully weigh patients and measure areas of skin: but exposure of small areas of skin, such as the back or chest, have shown good results In the present method of treatment the skin of the body is roughly divided into four areas: (1) the back, (2) the chest, (3) the front of the legs, (4) the back of the legs One of each of the areas is exposed to the source of light every alternate day. The dose of light employed is always the minimal erythema dose The aim of each treatment consists in the production of a mild erythema which disappears within 48 hours and may be followed by desquamation The patient has three treatments per week, so that an interval of rest of at least nine to ten days elapses between the exposure of any one of the four areas of skin This interval of time allows for the skin to completely recover from the previous dose of light. In this way the skin will be found to remain sensitive and react to small doses of light and an erythema can be usually maintained with 2–3 I K units As a usual routine treatment is started with the mercury-vapour lamp With the onset of a slight perceptible pigmentation (this is often seen after the second exposure of each area) the dosage with the M V.L is increased, or treatment is started with the arc lamp In those cases where failure to develop a definite erythema occurs the dose of light is repeated over the same area of skin and increased In no case is any area of skin irradiated which shows signs of desquamation, the skin is always rested until it appears to be normal. By means of this technique the area of skin exposed to the source of light is proportional to the body-weight of the patient Rollier and Gauvain adopt a technique in treatment by heliotherapy, by which the body is gradually exposed to the sun and sky until the whole surface area of skin is irradiated. At the Light Institute at Copenhagen and at many other places the whole body is exposed to the source of light according to a routine schedule No importance is attached to the biological response of the skin after radiation The exposure to light is systematically carried out until patients are exposed for two hours By the technique which has been described, during the whole course of treatment exposure to the source of light is controlled by the erythema reaction of the skin The object of each treatment is to produce a minimal erythema over an area of skin considerably less than one-quarter of the surface area of the body A great advantage of this technique is that the length of time of exposure is considerably shortened Any type of lamp which readily emits erythema-producing rays is suitable. With the M V L and arc lamps which were employed in these observations treatment started by exposures from 2½–5 minutes (1½–2 I K), and even after 30–40 treatments an erythema could be easily obtained by exposure of an area of skin for 10 minutes (4–8 I.K). By resting each area of skin for 10–14 days between each exposure the skin is continually maintained in a light sensitive state

Immunity of the Skin to Light

The skin rapidly develops a mechanism of immunity to light directly after exposure to ultra-violet rays and before the onset of erythema and pigmentation L Hill has shown that when a small area of skin is irradiated so as to produce a maximal erythema, a second dose of light given over one-half of an area of skin 10 minutes after the first exposure does not further notably increase subsequent inflammation and soreness in this half of the irradiated area. Perthes found that irradiation of the erythematous skin does not result in any further reaction beyond the maximal erythema reaction When the skin is desquamating the desquamating layer absorbs the whole of the ultra-violet rays, and no penetration of ultra-violet rays occurs through this On the other hand, directly after desquamation the new skin layer is exposed and is very sensitive to irradiation Erythema can then be produced with a minimal dose of light, which again renders the skin immune to light until erythema and peeling have passed away Pigmentation lessens the sensitivity to ultra-violet rays, but, as Perthes points out, it is possible to produce erythema in the pigmented skin The dose may, however have to be increased Pigmentation protects the blood from the visible rays and by converting the radiant energy into heat excites the cutaneous nerves and provokes sweating, which in its turn protects the body from being over-heated by the absorption of radiant energy

From these observations it is apparent that immunity and protection to ultra-violet radiation is produced (1) by changes occurring in the skin directly after radiation; (2) by the desquamation of the skin; (3) later to a lesser extent by pigmentation

The skin is a very active tissue and is constantly undergoing regenerative and proliferative changes The skin responds to ultra-violet radiation only when these rays can penetrate to the layers of skin beyond the horny cells of the stratum corneum. The depth of pigmentation and the penetration of light depends upon the intensity of the wave-lengths of ultra-violet rays emitted from the source of light. When the reaction to irradiation has extended deeply into the layers of the skin, this immunity persists for a longer period of time, as a larger mass of skin and tissue cells have been irradiated.

The skin of young children differs markedly from the adult skin in its behaviour to light The child's skin does not appear to be as sensitive as the adult's to ultra-violet radiation, and the erythema reactions produced are usually less intense Although the child's skin appears to possess a natural immunity to ultra-violet rays, its absence of pigment renders it very sensitive to the heating effects produced by the penetration of visible rays

In the "Copenhagen technique" the massive exposure of large areas of skin to arc lamps renders the skin rapidly light-tolerant and immune As a result the dosage has to be increased for long periods of time The work which has been described in this paper does not support this method of treatment Although the clinical results obtained by A Reyn and his colleagues are very good, it is claimed that equally good results can be obtained by this simpler and quicker technique, which it would be interesting to try also in heliotherapy It may be necessary to somewhat increase the time of exposure towards the end of the treatment, but the careful control of dosage during the preliminary stages of treatment, and the observation of the skin reactions with each dose of light, give place to a simple systematic technique for phototherapy.

The experiments described in this paper were carried out at the National Institute for Medical Research, Hampstead, N W I wish to express my gratitude and thanks for the help given me by Dr. Leonard Hill and Captain S R Douglas while the work was progressing

SPINAL ANÆSTHESIA IN INTUSSUSCEPTION OF INFANTS.

BY HAMILTON BAILEY, F R C S ENG,
GILLSON SCHOLAR SOCIETY OF APOTHECARIES, SURGEON,
DUDLEY ROAD HOSPITAL, BIRMINGHAM

THE advantages of spinal anæsthesia in acute intestinal obstruction are now widely appreciated, for it is recognised that one of the greatest contra-indications in all modern emergency surgery is an anæsthetic via the respiratory passages to a patient in the throes of fæcal vomiting Again, the picture of an unhappy surgeon engaged in a sisyphean task of approximating the peritoneum over a sea of distended and unruly intestinal coils has, by virtue of intrathecal anæsthesia, passed, and given place to quiet and orderly suture of the abdominal wall Whatever objections may be raised against intrathecal anæsthesia, few will deny that it has at least played a part in improving the results of the treatment of acute intestinal obstruction

The object of this paper is to set forth some advantages of extending spinal anæsthesia to intestinal obstruction during infancy, and is based upon observations made upon a short series of cases of intussusception so treated

Technique and Dosage

Stovaine in saline (May and Baker) was used in all cases A word of warning is here necessary It is essential that it be stovaine *in saline*, for should the older preparation, stovaine in glucose (which is still used by some operators), be injected, disastrous results would most certainly follow the instructions outlined here So great is the danger, in emergency, of confounding the phials of these two preparations of stovaine—whose application in theory and practice involve entirely dissimilar principles—that it should be compulsory for all manufacturers to issue stovaine in saline in a capsule of a conventional colour

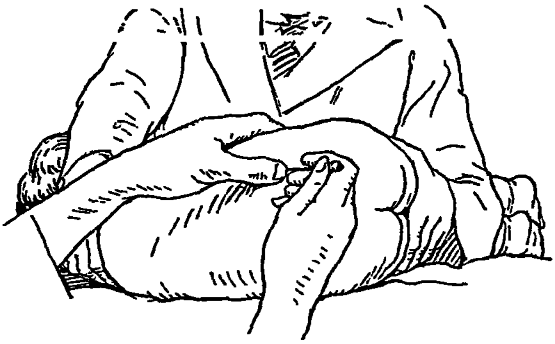
Dosage—0 2 c cm of stovaine in saline was the standard dose used, but this must vary with the weight of the baby

The lateral position of the patient is adopted for spinal puncture, this position is maintained by an assistant on the left-hand side of the table By passing one arm round the baby's neck, and the other under its knees, the assistant can steady the patient and maintain flexion of the vertebral column (Fig 1) The operator will find it convenient to be seated Barker's needles, so generally used for spinal puncture, are much too large, and are quite unsuitable for infants A smaller needle should be substituted The needle is introduced between the second and third lumbar vertebræ

Observations lead one to believe that in these cases the reduction of intracranial pressure consequent upon the removal of cerebro-spinal fluid increases shock considerably The cerebro-spinal fluid should therefore not be allowed to escape There is no need to mix the stovaine intimately with the cerebro-spinal fluid by repeatedly withdrawing and inserting the piston of the syringe I have reason to believe that this is a dangerous practice, and sometimes disseminates the anæsthetic to the higher segments of the cord

The anæsthetic having been introduced, the puncture wound is sealed by collodion in the usual way ½ c cm of pituitrin is injected subcutaneously to counteract a fall in blood pressure, and the operating table may be tilted by the head 20° with the same object in view I usually ask the nurse to place the corner of a piece of gauze soaked in glycerol in the patient's mouth, and as often as not the child sucks the gauze quite happily during the operation.

FIG 1



Position for spinal puncture

Advantages

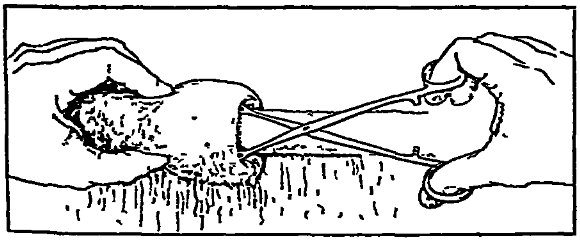
The stovaine effectually blocks the painful impulses passing from the intestines to the spino-thalamic tract, and frequently, a few moments after the injection, a child howling with pain becomes quite peaceful

The aphorism of Jacobson that the prognosis in intussusception varies inversely with the time that the infant is on the operating table applies to reduction under general anæsthesia Within reasonable limits, when spinal anæsthesia is being used, there is no particular necessity for speed Refinements of technique, such as clipping towels to the cut edge of the skin and displacing the rectus laterally (instead of splitting that muscle) are permissible in the majority of cases Owing to the absolute muscular relaxation, the mass which constitutes the intussusception can usually be delivered through the wound into hot, saline-soaked gauze This is always possible as soon as the splenic flexure has been passed Extra-abdominal reduction, combined in stubborn cases with Daw's method of stretching the intus suscipiens (Fig 2), has considerably minimised the necessity for resection and its concomitant risks

Under general anæsthesia, and especially when gas and oxygen are being used, there is at least some difficulty in closing the abdominal wall in layers Not infrequently the difficulty is insurmountable, and the only possible means of dealing rapidly and efficiently with the situation is to have recourse to through-and-through interrupted suture Whilst the results of this somewhat crude but effective method of closing the abdomen are astonishingly good, it must be admitted that complications occasionally directly result from its use For instance, "burst abdomen" is a well-known complication after reduction of intussusception under general anæsthesia. So far it has not occurred after spinal anæsthesia, and it is highly improbable that it will.

Again, when the peritoneum is not accurately approximated, coils of intestine are very likely to become adherent to the wound. A case of acute on chronic intestinal obstruction in a child of 3 was recently seen at necropsy. The cause of the obstruction was found to be adherent coils of ileum to a laparotomy scar. An intussusception had been reduced two years previously. Lastly, it is obvious that an abdominal wall closed hastily and with difficulty is more likely to predispose to a ventral hernia than one which has been accurately sewn in layers.

Fig. 2



Daw's method of stretching the intussuscipiens.

It will be noticed that there was one death in this series. The child had been ill 68 hours before it was submitted to operation. Nevertheless, though very shocked, it was not more collapsed than several others of the series. As the operation was about to commence the child stopped breathing. The heart continued to beat for some seven minutes after the cessation of respiration; but in spite of every effort at resuscitation for half an hour death occurred. The necropsy revealed a small gangrenous ileocolic intussusception. I believe this death was due to stovaine poisoning. On reconsidering the case, I remembered that the syringe which was being used was indistinctly marked. Further, seven hours before this operation I had pricked my finger in the course of a laparotomy upon a patient with a virulent streptococcal peritonitis, and a long illness had already commenced. It seems probable that an overdose of stovaine was given and it behoves one to make quite certain that the syringe which is being used is marked very clearly in tenths of a cubic centimetre.

In spite of this failure I have every confidence in the method. The greatest advantage that spinal anæsthesia has to offer is an absolutely relaxed abdomen, which facilitates the work of the surgeon, and prevents many insults to the plexuses of Auerbach and Meissner.

After-treatment.—The patient is returned to bed and anti-shock treatment continued. The foot of the bed is raised, and continuous rectal saline administered by means of a Souttar's apparatus. Nepenthe, ♏ 1, is given by mouth every three hours.

Records and Results.

Age in months.	Hours since onset.	Dose of stovaine admin.	Result.	Age in months.	Hours since onset.	Dose of stovaine admin.	Result.
		c.cm.				c.cm.	
5	36	0.2	R.	9	15	0.2	R.
8	11	„	R.	8	22	,	R.
9	80	„	R.	11	48	„	R.
7	60	„	R.	30	14	0.3	R.
7*	30	„	R.	5	5	0.18	R.
9	15	,	R.	5	9½	0.18	R.
7	68	possibly 0.4	D.	7	23	0.2	R.

Type of Intussusception.—Ileocolic in each case except where marked with an asterisk; in this instance the intussusception was ileocæcal.

I desire to record my thanks to Mr. H. S. Souttar, of the London Hospital, who first demonstrated to me the possibilities of intrathecal anæsthesia in infants.

References.—Rowlands and Jacobson's Operations of Surgery, 1915, ii., p. 341. Daw, S. W.: The Lancet, 1918, i., 803.

Clinical and Laboratory Notes.

A CASE OF

SIX FACETED CALCULI FOUND IN THE SUBSTANCE OF THE SUBMAXILLARY GLAND.

By W. Ingledew Daggett, M.B. Camb., M.R.C.S.,
HOUSE SURGEON, KING'S COLLEGE HOSPITAL.

Calculi in Wharton's duct and in the substance of the submaxillary gland are not uncommon; the following case, however, presents unique features:—

An adult male, aged 36, recently attended at the hospital complaining of a large swelling on the left side of the neck immediately below the lower jaw. The swelling had first been noticed about 18 years previously, when no larger than a marble. No inconvenience had been caused, and there had never been any pain or increase in size during meal times. Five years ago the patient had a bad cold, and a marked increase in the swelling became evident, with associated pain and throbbing until a sudden and offensive discharge into the mouth relieved the condition, decrease in size following almost immediately. Several similar attacks occurred during the last five years, all associated in onset with a cold in the head, and relieved by an offensive intrabuccal discharge. On each occasion the swelling had subsequently decreased in size, yet each exacerbation had left it larger than formerly. The patient was often conscious of something hard pressing upon and limiting the movements of the left side of his tongue; several times, when pressing upon the swelling, he had felt a distinct click which he described as "something hard hitting against the lower jaw."

When this patient first presented himself for examination he was in what he termed "one of his attacks." He looked ill and his temperature was 100.2° F. There was a swelling the size of a hen's egg in the left submaxillary triangle; this was exquisitely tender on palpation; the overlying skin was red, hot, and attached to the mass. Oral examination demonstrated that the orifice of Wharton's duct was red and prominent, pus could be expressed by gentle pressure. With one finger in the mouth and the other hand just below the horizontal ramus of the mandible, a marked degree of fixity was noted; despite the limited lateral mobility, pressure outwards imparted to the examining fingers the uncanny "click" alluded to by the patient.

The diagnosis of calculus in the submaxillary gland was easy; the presence of pus flowing into the mouth pointed to secondary infection, whilst the size and fixity of the gland were certainly due to previous attacks of inflammation, which had caused fibrous thickening of the gland stroma and adhesions to surrounding structures. The fact that pain and increase in size associated with taking food had not been noticed showed that the duct had never been obstructed; this was confirmed by the easy passage of a fine probe along the duct.

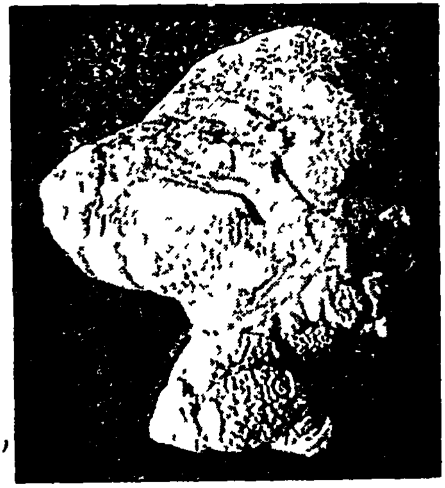
From an X ray photograph the deduction was made that a single large branched calculus was present in the substance of the submaxillary gland. The obvious procedure was to remove the whole gland from the outside, owing to the size of the swelling and periglandular fibrosis, and the patient was admitted to the ward. The teeth were very septic and received attention. Frequent mouth washes of chloramine-T ½ per cent. were used until the inflammation had subsided.

Operation.—Access to the gland was effected through a curved incision, with its convexity downwards, extending from a point just behind the symphysis to the angle of the mandible. The gland was dissected out piecemeal, the firm adhesions causing great difficulty. The facial artery was cut and secured, whilst subsequent weakness of the left side of the mouth showed that the buccal branch of the facial nerve had been damaged. A corrugated rubber drain was inserted and the wound closed. On opening the gland no less than six separate calculi were found, all faceted and fitting into one another so closely that the appearance of a single calculus in the X ray photograph was not surprising. The accompanying photograph shows the branched appearance and rough nodular surface of the composite mass; the separate calculi have been fitted together by plasticine in order to show their disposition before separation. The total weight was 16 g., the largest of the six weighed 6.5 g.

Discussion.

The question as to how the facets arose is interesting. It is possible that the calculi were formed separately in a pre-existing cystic space in the gland,

and that mutual pressure, as in the case of gall-stones, was in part responsible for the condition Retention cysts in the submaxillary gland have been described, but they are not common Assuming the presence of such a cyst, some low-grade infection would give rise to retention of minute plugs of mucus, desquamated epithelium, and bacteria, around which phosphates and carbonates of lime would be deposited The stones would become larger until they filled the cyst, further deposit of salts would then only be possible on the surfaces not actually in contact with one another, and so faceting would result Pericystic deposition of fibrous tissue, due to irritation, would explain the fixity of the calculi in the gland substance.



The composite mass of six faceted calculi fitted together with plasticine as they lay in Wharton's duct × 2

In my opinion the condition did not arise in this way, but the several component parts were formed in separate but adjacent parts of the gland, such a condition has been described before, but radical treatment has been instituted before facets have had time to form In the case in question, I assume the presence of six separate calculi close together but separated from each other by a small amount of glandular tissue; as growth continued this intervening glandular tissue, through compression, would atrophy and finally disappear When this stage had been reached only time was necessary for the development of facets, for lime salts could only be deposited on the free surface of the composite mass The fact that between the smallest calculus and the one into which it fitted I found a process of fibrosed glandular tissue continuous with that surrounding the main mass is in support of this view It is very rare for such a condition to be allowed 18 years in which to develop

In conclusion, I wish to express my gratitude to Mr. Cecil P G. Wakeley for allowing me to operate upon and publish this case

---

A CASE OF

SIMULTANEOUS ABDOMINAL AND TUBAL PREGNANCY

By M Sourasky, M D Leeds, F R C S Edin ,
SURGICAL REGISTRAR, LONDON JEWISH HOSPITAL

Cases of twin ectopic pregnancies are sufficiently rare to be worth recording

Mrs I L , aged 32, was admitted to the Mansfield Hospital, Nottingham, on Nov 23rd, 1021, suffering from abdominal pain, vomiting, and a large abdominal tumour I did not see the patient at the time, but I understand it was diagnosed ? hydatidiform mole She remained in the hospital for five weeks, and as all her symptoms abated she was discharged and lost sight of

On March 8th, 1024, after a period of over two years, she was readmitted with exactly the same swelling, pain, and fæculent vomiting She stated that she had been in fairly good health since leaving the hospital except for rather severe constipation and occasional attacks of vomiting and abdominal pain Menstruation was irregular and scanty

Condition on Examination —On abdominal examination a large mid-line swelling from xiphisternum to pelvis was found It was smooth and slightly movable from side to side, but not vertically The umbilicus was everted The whole abdomen was tender, rigid, and distended, so that on palpation one could make out nothing beyond a large tumour Vaginal examination revealed nothing except a slightly patent os The breasts were prominent and no colostrum could be expressed

Her general condition was alarming The temperature rose to 103–104° F , the pulse was rapid and thready, and the vomiting frequent and fæculent It was evident that the case was one of general peritonitis superimposed upon an abdominal tumour of nearly three years' standing, the nature of which was not known

Mr A. Hunnard, under whose care the patient was readmitted, and to whom I am indebted for permission to publish this case, asked me to operate on her

Operation —Under general anæsthesia in the lithotomy position I found the uterus enlarged to about 5 in , the os patent, admitting with great ease Hegar's dilators, and the uterine cavity empty I therefore decided to perform laparotomy, at which Mr A R Tweedie kindly assisted me

On opening the abdomen a large sac, through which a fœtus was palpated, was seen. This sac was intimately adherent to the abdominal viscera, and on tracing it downwards we found it originating at the right pole of the fundus of the uterus, the base of its attachment measuring 1 in. by ½ in There was also a pendulous mass hanging from the right side of the uterus at the site of the right Fallopian tube and ovary The left tube and ovary were normal The uterus was enlarged, and, with the exception of the sac originating at its right upper pole, and the pendulous mass at the right side, looked quite normal The peritoneal cavity was filled with a serous exudate and multiple friable adhesions

In view of the patient's serious condition, and the multiple dense attachments to the various viscera, the removal of the sac en masse was considered inadvisable Hence an incision into the sac was made and a slightly macerated fœtus of about eight months was extracted The placenta and the inner surface of the sac were gangrenous, and the sac was full of dark, highly offensive fluid After removing the gangrenous tissue and carefully mopping out the purulent fluid, we closed the abdomen, draining the sac and the peritoneal cavity Though the wound drained well, and though all measures to improve her general condition were undertaken, the patient died five days after the operation

Post-mortem Examination —No communication was found between the sac and the uterus It was impossible to detach the sac from the viscera The pendulous mass on the right side of the uterus contained another fœtus of over three months, as the sex could be determined The uterus, the sac, and its attached viscera were carefully removed for microscopic examination and museum purposes Unfortunately the specimen was destroyed

Commentary

One is faced with the problem as to how the abdominal pregnancy originated There are three possibilities 1 It began as a twin pregnancy in the right Fallopian tube, one ovum gaining entry into the peritoneal cavity and eventually becoming attached to the right upper pole of the uterus, either by being extruded through the abdominal ostium or by rupturing through the wall of the tube 2 It began as a primary abdominal and a tubal pregnancy 3 It began with one pregnancy in a rudimentary horn of a uterus unicornis, and another in the right Fallopian tube

The first hypothesis is not feasible, because the patient's history is too colourless to suggest a ruptured tubal gestation or an extrusion of a fœtus through the abdominal end of the Fallopian tube The second hypothesis is possible but highly improbable. One could hardly conceive an abdominal pregnancy attaching itself to the upper pole of the uterus by a narrow peduncle, as was found in this case; and some authorities deny the existence of primary abdominal pregnancy per se Therefore I am inclined to think that the pregnancy began in a rudimentary horn, which lost its communication with the uterine cavity during the three years of the fœtus's existence

It is difficult to come to a definite conclusion as to when the tubal pregnancy started—whether it was a case of superfœtation or simultaneous ectopic pregnancies Apparently, when the patient was admitted the first time, she had gone to full term, and a spurious labour had occurred with severe abdominal pain and vomiting. The fœtus must have died during that process.

Summary.

The interest in this case lies in the following facts

1 The woman lived fairly comfortably for nearly two and a half years with two dead fœtuses in her abdomen (*a*) One about eight months old lying in a special sac which was tightly adherent to the viscera, and apparently originating from the upper pole of the uterus from a rudimentary horn ; (*b*) the other in the right Fallopian tube over three months old, which had been there for an undetermined time

2 The placenta of the large fœtus was gangrenous, and the fœtus itself was just beginning to undergo decomposition

3 A rare combination of abdominal and tubal pregnancies

MENTAL DISEASE AND DEFICIENCY

WORK OF THE BOARD OF CONTROL IN 1925

THE twelfth annual report [1] of the Board of Control, on which we made some general comment last week, records that there were 133,883 certified persons under care at the beginning of 1926 This was an increase of over 2000 on the previous year, but the Commissioners consider that it is parallel with the increase in population and does not afford evidence of any increase in the incidence of insanity The sex percentage among the private patients was 34 8 males and 65 2 females, but if service and ex-service patients are included the relative figures are altered to 59 and 41 Among rate-aided patients the sex distribution showed a slightly higher figure for males 41 7 per cent, or 44 3 per cent when the service cases are included The recovery-rate for the whole country, calculated as usual on the direct admissions, was 31 8 per cent, and the death-rate 7 6 per cent.—the lowest ever recorded.

Accommodation

The question of available accommodation is rapidly becoming serious, and the Board called a conference in April, 1925, to consider it Methods of relieving pressure that were recommended include · (1) Arrangements with boards of guardians to transfer harmless senile patients to Poor-law institutions, (2) extended use of boarding-out, discharge to relatives, and discharge on trial of all suitable patients, (3) building on to existing mental hospitals separate admission and convalescent villas and homes for the nurses As circumstances may differ in different areas, the Board is collecting information with a view to calling regional conferences Regions have been mapped out in such a way that each group of mental hospitals is collected around a teaching centre, and it is hoped that the scientific progress of psychiatry may be furthered by contact between the institutions and the universities

Scientific Equipment

The report states that "every public mental hospital should possess a laboratory" and urges every institution to appoint a properly trained pathological officer and laboratory assistant without delay Possibly the grouping of the hospitals around the universities may further the encouragement and coordination of research by the appointment of one of the university pathologists as visiting pathologist to the mental hospitals in his area The Commissioners urge the speedy installation of an X ray apparatus and the appointment of a visiting radiologist; it is particularly important when dealing with mental patients to be able to locate fractures and foreign bodies precisely, and also to be able to apply X ray treatment clinically where indicated While it cannot yet be stated with any assurance that ultra-violet radiation has any specific action on psychotic states, five county and one registered hospital have installed the apparatus for the treatment of such conditions as malnutrition, autotoxæmia, and tuberculosis The Commissioners feel that patients cannot be adequately treated without a clinical room attached to each ward where they can speak privately with the medical officer and where he can carry out the simple everyday tests of clinical medicine A complaint of increasing frequency is the lack of opportunity the patients have for talking with the medical officer, and although this is no doubt partly due to the very large numbers accommodated in some of the institutions, yet the Commissioners feel that the difficulty might be largely met by the routine use of these clinical rooms

Amenities of Life

In conformity with their general policy of treating inmates of mental hospitals as nearly as possible like those of other hospitals, the Board urge the greatest possible freedom in correspondence and visits, and have issued a circular in which they ask all superintendents to see that the patients are fully informed of their rights in the matter of visits, letters, and parcels

The scheme of dietary drawn up by the Board has been followed in most of the hospitals, and there is no doubt that the food supplied has, on the whole, improved very markedly in recent years Rigid weekly scales have been abolished, and kitchen equipment has been improved The provision of a really good diet necessitates capital outlay on the equipment, but economy is effected in the end The average weekly cost of maintenance was 23*s*

Infectious Disease

Three institutions had outbreaks of mild small-pox, but there were no deaths, and the energetic action of the medical staffs quickly confined the epidemics within narrow limits Influenza seems to have been more prevalent in 1925 than in 1924, but of a milder type The problem of intestinal disease in mental hospitals was dealt with in a recent issue of THE LANCET (August 21st, pp 377–391) While the measures taken to prevent and combat these conditions are very much more efficient than they used to be, the report urges on all institutions the great importance of making their water- and milk-supply, sewage disposal, and laundry work above reproach It is also suggested that the flushing system in w c.'s should be worked by a floor pedal to avoid contact with hands that may be contaminated Typhoid and para-typhoid continue to show a slow but disquieting annual increase 147 cases being notified during 1925 Curiously, nearly 80 per cent. of these cases are in women, whereas in the population outside male cases predominate Early diagnosis and organised search for carriers ought to combat these diseases successfully Dysentery has shown a steady decrease in incidence, while tuberculosis has remained at the low figure it reached last year, less than 12 per 1000 The distribution of the last-named disease suggests to the Commissioners that there are still some unrecognised predisposing factors in certain hospitals. The figures of mortality from phthisis show a very gratifying improvement from 17 per cent of all deaths in mental hospitals in 1909–14, to 11 4 per cent. in 1925 The improvement in dietary is probably the chief responsible factor, others being open-air nursing, better ventilation, and vacuum cleaning

---

[1] H.M. Stationery Office 12*s* 6*d*

Staffs and Out-patient Treatment.

Some half dozen superintendents resigned during the year, and it is interesting to note that the first appointment of a woman superintendent was made in the summer of 1925, when Dr. Jean Shortt was placed in charge of The Lawn, Lincoln The problem of mental nurses was made the subject of a special conference in April, 1925, and the Board subsequently issued a circular setting out their suggestions on what should be done to ensure a good service The circular presses for uniform action throughout the country to attract the best type of nurse by providing adequate remuneration, suitable quarters, and club rooms Those superintendents who have tried the experiment of using women nurses for male patients are practically unanimous in its favour

The report devotes a special section to the importance of providing out-patient treatment in connexion with mental hospitals, and particularly emphasises the value of cooperation with general hospitals A score of hospitals throughout the country now have out-patient clinics, where patients are seen by a member of the staff of a mental hospital; but very much remains still to be done, and the necessity of providing beds and social workers for these clinics is not yet adequately appreciated

General Paralysis and Encephalitis Lethargica.

Induced malaria was used at 42 institutions on some 444 general paralytics in 1925 13 7 per cent of these have been sent home greatly improved and no harm has resulted from the treatment The Board admits the point of view of those who maintain that the apparent recoveries should be classed with the remissions which so often occur without treatment, but feels that the figures are too striking to be deprecated and continues to encourage this therapeutic experiment There are now in mental institutions about 320 patients suffering from the after-effects of encephalitis lethargica These young people need occupational training and facilities for special grouping, and the Board is glad to record that the local authorities for London and Lancashire have collected their cases together and that 30 beds have been specially put aside at West Park, Epsom, for research and treatment; 25 beds have also been set aside at Winchmore Hill, and the results of patient work there have been gratifying

Research Work in Mental Hospitals

The report includes, as usual, abstracts of the research carried out in the various mental hospitals The amount of research done, in addition to routine pathological work, is steadily increasing This year's reports record a number of interesting and valuable pieces of work on many subjects, including intestinal infections, malarial treatment of general paralysis, basal metabolism, biochemistry of the blood, reaction of the cerebro-spinal fluid, pellagra, laboratory aids to diagnosis, and ultra-violet light and radiant heat in treatment

Mental Deficiency

A large section of the report is taken up with the very serious problem of the mental defectives As we pointed out in our comment on last year's report (THE LANCET, 1925, ii , p 655), the lack of accommodation is acute, and the last 12 months have seen no improvement " The failure of local authorities," says the report, " to fulfil their duties is hampering the beneficent objects of the Mental Deficiency Act Every day brings to our notice urgent and often most pitiable cases for whom no accommodation can be found Mere figures can never reveal the urgent need for continuous care for defectives There are human aspects of this social evil which cannot be found in statistics " Three typical cases are given in full as illustration of the lamentable state of affairs

Discussing the marriage and procreation of defectives, the report weighs the methods of sterilisation and segregation, and in view of the terrible results, both social and personal, of the present free propagation of deficients, suggests that the two measures might profitably be worked together Sterilisation alone will certainly not solve the problem, nor affect the immediate need for institutional accommodation, but since this is so grossly inadequate it might, the Board feels, be both humane and expedient to try sterilisation followed by return to some form of community life on licence.

While ascertainment is undoubtedly improving, a large number of defectives have not yet been found The reports of local authorities make it clear that a specially trained officer should be appointed or else that the local voluntary association should be used A circular has been sent to local authorities and 115 out of 124 have replied , the report gives a summary of their answers Twenty-one occupation centres are now at work and producing good results, in spite of the lack of proper facilities in many places An increasing number of boards of guardians are employing skilled occupational trainers The appointment of special medical officers is proceeding slowly and the Board doubts whether the Act will be properly worked until each district has such an officer, with special knowledge and experience, whose principal work is mental deficiency There is considerable difficulty in obtaining doctors with adequate training; only 108 out of the 333 so far appointed have had any special experience On Jan 1st there were 21,082 defectives under care and 55,480 " ascertained " The death-rate among those in institutions was 2 per cent. ; 31 per cent. of these being due to tuberculosis, 20 per cent to pneumonia, and 11 per cent to epilepsy.

MENTAL HOSPITAL REPORTS

PRIVATE HOSPITALS

Barnwood House Hospital, Gloucester, has 142 patients, 14 of whom are on a voluntary basis There was a good deal of influenza in the spring but no other illness , the death-rate was 9 15 per cent The recovery-rate was 48 per cent , and the Visiting Commissioners note with satisfaction the amount of individual and intensive treatment The staff of visiting specialists is increasing; the hospital now has a consultant physician, surgeon, and pathologist, and a dentist is to be appointed One general paralytic treated by induced malaria was discharged recovered and is keeping well The patients had the advantage of a seaside house at Weston-super-Mare for the summer and many of them have full parole Verandahs and a dental room were added during the year and new arrangements at the cowsheds have resulted in a milk-supply of high purity Forty-one per cent of the nursing staff hold their M P.A. certificate

The Retreat at York publishes a report illustrated with delightful pencil drawings of the estate There were 206 patients in residence at the beginning of 1926 The number of admissions during 1925 reached a record figure and over 56 per cent of them were voluntary The death-rate was 7 per cent , and the recovery-rate 28 per cent The hospital was free from epidemic disease Malarial treatment of general paralysis has been continued with varying but on the whole encouraging results, and the use of gland extracts is being pursued Many of the patients had the benefit of a " summer holiday " in the house rented at Cloughton The male side has been satisfactorily reorganised and the Gentlemen's Admission Hospital is described as " a model of what such a department should be " A new nurses' home is practically complete Fifteen patients have full parole and 48 more walk out attended Twelve nurses obtained the M P A. certificate during the year and a number more passed the preliminary examination A most important development is the inauguration of a clinic at the County Hospital for mental out-patients, which is to be run with the cooperation of the five mental hospitals in the district

A PAMPHLET ON VENEREAL DISEASES

A REPRINT of the chapter on Venereal Diseases from the annual report for 1925 of the Scottish Board of Health has been issued for separate circulation. The pamphlet[1] is intended to impress on the public the importance of early and sustained treatment of venereal disease, also to enable the practitioner to realise the extent to which the public health depends on the thoroughness of his methods of diagnosis and treatment, and to indicate when he ought, in the interest of his patient, to have recourse to the public services provided. We have already[2] drawn attention to this section of the report as a summary of the pathology, sociology, symptoms, and successful modern treatment of these diseases, which is more informative than many large text-books on the subject. In a covering letter the Scottish Board of Health suggest that local authorities should purchase copies of the pamphlet and supply them to their members and officers, and also to all practitioners working in their areas. In the introduction the pamphlet is said to be "a descriptive summary of the methods employed" which "represents the actual practice" of the 45 centres now established in Scotland. Those who are led to expect an account of the actual methods employed at the Scottish centres in diagnosis and treatment—if, indeed, they all adopt the same routine—and to find material for comparison with methods adopted in England will be disappointed. While details are omitted, very properly in a pamphlet designed for lay as well as medical readers, enough information is given to indicate that the practice does not differ essentially from that adopted elsewhere in the United Kingdom.

Syphilis

Of the 16 paragraphs, filling six pages, devoted to syphilis, the first is concerned with a historical account of the discoveries of the last 20 years; the second to an estimate of the wide diffusion and manifestation of the disease. The third brings to notice the extreme viability of the spirochæte; transmission of infection, manifestations, innocent infection, other modes of acquiring syphilis, the initial lesion, and subsequent stages of syphilis are then discussed in turn. Paragraphs follow on the curability of the disease and on the importance of early and persistent treatment which must be "commenced with promptitude, pushed with vigour, and continued for long." This section is completed by brief notes on the use of mercury, bismuth, and other drugs, neosalvarsan, treatment and infectivity, standard of cure, early diagnosis, and the interpretation of the Wassermann test. The standard of cure accepted is a persistently negative Wassermann reaction in the blood over a period of two years.

Gonorrhœa.

To gonorrhœa is allotted a little more space, well divided into 22 paragraphs. Diffusion and ravages, the organism of gonorrhœa, mode of transmission, manifestations, and general course are first described. A list of complications and sequelæ follows, also warnings as to the dangers of a definite prognosis. The general principles of treatment at all stages are next dealt with. It is stated categorically that chronic gonorrhœa in the male cannot be effectively treated without the routine use of the urethroscope and the advantages of irrigation by means of a can and nozzle over urethral injections with a syringe are emphasised. The standard of cure adopted is as follows:—

Standard of Cure in Gonorrhœa.—A patient who has had gonorrhœa should not be regarded as cured (nor should one who believes that he may have contracted gonorrhœa be assured that he has not) until—

(a) there is either no discharge from the urethra or only an occasional clear mucoid drop which on repeated examination is found to be devoid of gonococci;

(b) the urine shows an absence of pus or gonococci, the latter on repeated examination if threads be present;

(c) the prostate is healthy—that is to say, there is absence of pus and of gonococci on repeated examination of the expressed secretion;

(d) examination by the urethroscope shows no indication of lesion; or, alternatively, no lesions are palpable by means of an exploratory bougie;

(e) the administration of provocative vaccines gives a negative result—namely, no exacerbation (however slight) of symptoms;

(f) complement-fixation test gives a negative result. (Always bearing in mind that a previous administration of vaccine will produce a positive result.)

No standard of cure is suggested for gonorrhœa in women, and this in itself is a sign of the chronic and intractable nature of the disease when it affects the female genital tract. As to its treatment, careful preliminary swabbing, irrigation of the urethra, douching and swabbing of the vagina, local applications to the cervical canal and special treatment, by cautery, incision, or otherwise, of infected glands and their orifices—any or all of these may be necessary.

Notes on rheumatism and ophthalmia, on gonorrhœa in children, and on untreated cases conclude this section. Brief accounts of soft chancres and of balanitis and warts are included in the pamphlet, where a list of V.D. centres in Scotland and certain local statistics also find a place. We quote in full a paragraph which is more controversial than most, entitled

The Treatment of Venereal Disease by the General Practitioner.

During the last 20 years the diagnosis and treatment of syphilis and gonorrhœa have made such rapid progress and have indeed been so radically altered that it has been hard, if not impossible, for the general practitioner to keep abreast of the most recent knowledge and the most approved procedure. To a certain extent the specialist in his consulting-room or in the venereal diseases clinic, of which 45 have now been established in Scotland, has been able to meet the difficulty and supply the lack; but it is certain that he has not been able to reach more than a substantial proportion of all those affected. Adequate treatment will only be meted out to those suffering from venereal disease—whether man, woman, or child, whether infected by contact or congenitally, innocently, or otherwise—when the *general practitioner* is in a position to supply that need. That will come about gradually. Indeed, it has already commenced, and will become more general as graduates pass out from the medical schools after a training in which clinical study of the venereal diseases is an essential part. At present, in the transition stage, it is important for each general practitioner to know what is feasible for him and what not. Guided, if need be but not necessarily, by the specialist, he can supply the whole treatment of syphilis, provided only that he has sufficient skill for intravenous injection or, alternatively, uses one of the drugs prepared for intramuscular use, and that he has access to a laboratory for the performance of the Wassermann test. With regard to gonorrhœa it is different. The acquisition of skill in the use of the urethroscope, of bougie, sound, and dilator, and in the examination of the prostate, is at least in most cases beyond the reach of the busy general practitioner. In the case of gonorrhœa in the female the treatment is, or at least may be, so intricate and so protracted that it is practically a matter for the specialist alone. Even in the case of syphilis the ideal is for the patient's medical adviser to be guided, and if need be aided by a specialist from time to time.

Practitioners may not agree with all the statements in the paragraph quoted. The idea that they may properly undertake the treatment of syphilis, whereas that of chronic gonorrhœa in men or women should be left to the specialist, is the reverse of what would have been recommended ten years ago, but it is a point of view that has much in its favour. We quoted last week (p. 618) a list of services which, in the opinion of certain local medical and insurance committees in England and Wales, could properly be undertaken by a general practitioner of ordinary professional competence and skill. "The treatment of gonorrhœa by irrigation and medicine" was included among these, whereas "removal by dissection of Bartholin's gland" and "intravenous administration of novarsenobillon" were among those considered to belong to another category. This and other suggestions in the pamphlet make it worthy of study by the practitioner as well as by the members of the lay public for whom it has been in part compiled.

---

[1] H.M. Stationery Office. 1926. Pp. 24. 2d.

[2] THE LANCET, July 17th, p. 134.

Reviews and Notices of Books.

ALLERGIC DISEASES

Allergic Diseases Diagnosis and Treatment of Bronchial Asthma, Hay-fever, and other Allergic Diseases By W STORM VAN LEEUWEN, M D, Director of the Pharmaco-Therapeutic Institute, Leiden, Holland London J. B Lippincott Company 1926. Pp 142 18s

THOSE who have read Dr Van Leeuwen's papers will be glad to have an account of his researches and present views in book form To others who are not acquainted with his work this book can be recommended as presenting probably the soundest and most up-to-date account in this language of allergic diseases and of asthma in particular Attention may be directed particularly to his account of the alteration of purin metabolism in asthmatics and to his discussion as to whether allergy, or hypersensitiveness to foreign substances as it is more commonly called in this country, is or is not an anaphylactic phenomenon In previous papers Dr Van Leeuwen has followed Coca in arguing that there is very little connexion between the two subjects, but as the result of a careful review of recent work he now inclines to the belief that anaphylaxis may explain most cases of hypersensitiveness, although those cases of asthma which have followed immediately on a first contact of a child with a specific allergen cannot be due to this cause He describes the importance of skin tests, and in particular of his human dandruff test, as a means of diagnosing the condition of allergy in a patient rather than of indicating what is the specific cause of the patient's attacks His theory of allergic diseases is that in the first place the allergen—not necessarily a protein, in some cases a drug—must gain entrance to the blood either through the skin or mucous membrane This implies increased permeability, since ordinarily the organism does not allow such poisonous substances to enter This increased permeability may be due to diseases of the skin or mucous membranes, such as eczema, coryza, bronchitis, &c, or it may be due to the fact that the allergen is combined with an irritating substance that injures the epithelium and allows it to enter. When the protein substance has obtained entrance to the blood stream immunity may be gained, or, if continued doses of the allergic substance are received, anaphylaxis may result

The treatment of asthma is admirably discussed Dr Van Leeuwen believes that the majority of cases are due to substances in the atmosphere, or miasms as he calls them, which may be present in one locality and not in another, he has treated one case by keeping the patient in a miasm-proof chamber by filtering the air admitted He has had successful results in other cases, and claims that the method has been modified so that it is not unreasonably expensive Further details as to the procedure would have been welcome

Asthma Its Radical Treatment Second edition By JAMES ADAM, M A, M D, C M, F R F P S Glasg, Hon Surgeon, Diseases of the Ear, Nose and Throat, Glasgow Royal Infirmary London Henry Kimpton 1926 Pp 224 12s 6d

IN our present state of knowledge of the pathology of asthma its treatment is bound to be largely empirical, and it is the various suggestions of the author on the subject of treatment, and in particular his elaborate dietary given in the first appendix, that are the most valuable parts of the book. For the rest, the author originally started out, as is clear from the introductory chapter, from the thesis that asthma is primarily a toxæmia which occurs partly in the bowel and partly in the tissues from the absorption of nitrogenous poisons or from an error in nitrogenous metabolism, the result of imperfect oxidation This was evidently his view at the time of the first edition of the book, and he seems reluctant to depart from it, though it is clear from later chapters that he now admits the importance of allergy, at any rate in some cases

There is something very baffling in the subject of asthma, for the views expressed not only as to its ætiology but as to its treatment, differ so widely For instance, Mr Adam states that nasal polypi are often present in asthma, and that it is in such cases that nasal operations are most hopeful, whereas another well-known writer maintains that the removal of polypi in certain cases makes the asthma worse The clinical part of the book is well written, but when the author discusses theory he often becomes too hypothetical, as when he suggests that the large number of eosinophil cells are present in asthma in order to absorb acid, and so preserve the alkalinity of the blood It is a pity that he has not given a fuller account of his figures for the analysis of blood and urine, as averages are apt not to be very convincing to the critical reader, and the same is true when the latter reads about the results of analysis in "typical" normal and "typical" asthmatic subjects Such data could quite well be put in extenso in an appendix without burdening the text with too much detail

The book is written almost entirely from one point of view Non-specific therapy is mentioned, but there are no directions as to how it can be carried out.

Hay-fever and Asthma By RAY M BALZEAT, A M, M D, Instructor in Medicine, University of Oklahoma Medical School, Consulting Physician to St Anthony Hospital Philadelphia F A Davis Company. 1926 Pp 198 $2

THIS book is said in its sub-title to be "a practical handbook for hay-fever and asthma patients" It contains a vast amount of information of a popular type concerning the various proteins to which such patients may be sensitive, but though the author mentions the known facts concerning the inborn tendencies of these diseases, he fails to bring out the importance in treatment He does not convince us that the intensive education of such nervous persons in the possible causation of their symptoms may not be mischievous rather than helpful

PROTOZOOLOGY

By C M WENYON, C M G, C B E, M B, B S, B Sc Lond, Director-in-Chief of the Wellcome Bureau of Scientific Research, formerly Protozoologist to the London School of Tropical Medicine. London Baillière, Tindall and Cox 1926 In two volumes Pp 1563 84s.

THE science of protozoology, on the scale exemplified in this work, is of comparatively recent growth The impetus to its development was given by the historic researches of the pioneers in tropical medicine a quarter of a century ago, but systematic study of these lowly organisms has been a matter of gradual evolution and has sadly lagged behind the sister subject of bacteriology Even at the present day protozoology, owing possibly to the absence of a reliable comprehensive treatise, is little but a name to many medical graduates, so that the appearance of Wenyon's work is timely It is an authoritative survey by one who has devoted much of his life to the study of this rapidly expanding science and sees it in admirable perspective We are not surprised to learn that more than six years have been consumed in its completion

The first volume of some 778 pages concerns itself with a complete description of the protozoa and with an inclusive exposition of the general life-history, physiology, and morphology of these organisms This section has undoubted importance from the point of view of systematic zoology Classification is always a vexatious subject, but it seems probable that the one adopted here may be accepted as a basis for further work A minute description of the various protozoa follows, special attention being given, as is their due, to parasitic and coprozoic forms Free-living forms are not, however, neglected The student of tropical medicine will read with especial interest the sections devoted to entamœbæ and the summary of our present knowledge of the trypanosomes of man and the lower animals The second volume contains descriptions of the coccidia which are parasitic to many forms of life, and the blood protozoa which are also included in the class sporozoa; the peculiar and pleomorphic malaria-like parasites of man, bats, birds, and the higher apes form an attractive subject for consideration The valuable summary on malaria, and the detailed information upon the anopheline carriers of this disease, deserve mention Part III. in the second volume deals with the spirochætes which are here boldly included with the protozoa, and, interlopers though they may be, they receive generous attention, which, in the lack of a standard account of the group, is opportune. Special features throughout the work are the quality of plates and the space given to technique by a proficient in the methods of investigation and culture of the protozoa A list of hosts, vertebrate and invertebrate, is included, and the accounts of the historic discoveries in protozoology appear to be accurate and complete, and even the somewhat hackneyed story of the life-cycle of the malaria parasite is readable The text is elucidated by 565 illustrations, mostly original and good, while of the 20 coloured plates those on the blood protozoa merit special praise There is a profuse bibliography

Oto-Rhino-Laryngology.

Handbuch der Hals- Nasen- Ohren-Heilkunde Edited by A Denker and O Kahler Sixth volume: Disease of the Ear, I. Berlin: Julius Springer; Munich J. F Bergmann 1926. Pp 1274 M 96

This is the first of the three volumes on diseases of the ear, which form part of Denker and Kahler's large text-book in nine volumes The first two volumes of the five devoted to the mouth and upper air passages have already appeared. The present issue maintains the high standard which characterised each of them.

The book opens with an account of the comparative anatomy of the ear, beginning with the static organs of invertebrates, and going on to describe the hearing apparatus of the vertebrates from cyclostomes and fishes upwards, and of the middle ear from amphibia to mammals Embryology is next discussed and is followed by a chapter on malformations of the human ear, and this in turn by a useful article on applied anatomy and a full description of the histology of all parts of the ear, and of the technique of the examination of these parts The second section of the book is concerned with the physiology of the ear; the mechanism of conduction of sound by air and by bone to the inner ear is discussed, together with the mode of action of the drum and ossicles Helmholtz's "resonance" theory of sound-perception is expounded in detail and Wilkinson's experiments with a working model are mentioned; other theories, such as Wrightson's, are not described The experimental investigation of the functions of the vestibules and semicircular canals is dealt with at some length

The rest of the volume comes under the heading of "Pathology and Therapy, General Section" In the chapter on ætiology the authors discuss the relationship of ear disease to the body in general the affections of the ear depending on disease of other organs and also the effects of syphilis, mumps, and the infectious diseases in general Chapters follow on general pathology, symptomatology and bacteriology Some of the subjects here mentioned would be more usefully treated under the descriptions of the particular diseases concerned, and the same criticism applies to the final chapter on general therapy The articles on clinical methods of examination are excellent. they include the methods of testing the vestibular apparatus and a full account of nystagmus Chapters on X ray examination, on serological methods, and a very useful one on lumbar puncture, which gives a full account of the various pathological changes in the cerebro-spinal fluid, complete this volume which, as a general survey, prepares the ground admirably for the other two volumes which will deal with the special diseases of the ear.

Handbuch der Neurologie des Ohres. Edited by Prof Dr. G Alexander and Prof Dr. O Marburg. Revised by Dr. H Brunner. Vol III. Berlin and Vienna: Urban and Schwarzenberg. 1926 Pp 825. M 60

This manual on the neurology of the ear is a large work produced by the collaboration of no less than 40 writers In this, the third, volume widely differing subjects are dealt with, which will have a varying degree of interest for the surgeon, the oculist, the aurist, the neurologist, and the general physician, all having as a common factor some connexion with the ear. In the first 150 pages Prof Marburg describes those tumours of the brain which come into relationship with the cochlear and vestibular apparatus—tumours, that is, especially of the cerebellum, cerebello-pontine angle, medulla and corpora quadrigemina These tumours are of great interest to the otologist as well as to the neurologist, and their characters and symptomatology are well and fully discussed Prof. Wolfgang Denk follows with a lucid account of the operative treatment of tumours of the brain, and Dr. M. Sgalitzer with a short description of the X ray treatment of diseases of the ear and cerebral tumours. The difficult subject of muscle tonus and dyskinesia is dealt with by Dr E. Pollak Other matters discussed in this volume include neurotic and hysterical affections of the cochlear and vestibular apparatus (in which it could be wished that more attention had been paid to the practical treatment of tinnitus and vertigo), traumatic neuroses of the ear, miners' nystagmus, sea-sickness, and spasmus nutans Nerve action and nerve disturbances in flying men are dealt with by Dr van Wulfften-Palthe and there is an interesting account by Dr E A Spiegel of experiments on the reflex effect of labyrinthine stimulation on the pupil, the vascular system, the heart respiratory system, and the alimentary tract Final chapters are on the influence of myxœdema and cretinism, and of other diseases of internal secretion, on the ear

From this short abstract of the contents of one of the three volumes, of which this work is composed, it will be seen that a great number of conditions come under consideration in dealing with the neurology of the ear The book is well produced, well illustrated where illustrations are needed notably in the article on tumours. and the authority of the subject matter is sufficiently attested by the names of the writers There is a full table of contents, an index, and an alphabetical list of the authorities quoted

Surgery of the Colon

By F W Rankin M D F.A.C S London and New York D. Appleton and Company 1926. Pp 366 21s

In this monograph the author deals exhaustively with the surgical conditions of the colon Whilst basing his statements upon the writings of others rather than upon his own personal experience he has succeeded in presenting clearly the views generally held by surgeons who have made this field a special study. The most valuable section of the book is that devoted to carcinoma and especially to the technical details of its surgical treatment. The last are thoroughly up to date and include several of the most modern methods of aseptic resection Illustrations here reach a high level Each section is accompanied by full statistics and bibliography, and the volume presents in a convenient form a vast amount of information on its subject

IMPERIAL SOCIAL HYGIENE CONGRESS.

Published by the British Social Hygiene Council, Inc, Carteret House, Carteret-street, London, S W. 1926 Pp. 300 4s

THE proceedings at the Imperial Social Hygiene Congress, held at the British Empire Exhibition in October of last year, have now been published by the British Social Hygiene Council, and the volume contains a collection of facts and experiences presented by doctors, administrators, and social workers from all parts of the Empire in connexion with the various problems of venereal disease and social hygiene as they arise at home and overseas The Congress gave an excellent opportunity, as could be gathered from the reports published at the time, for the interchange of opinion on many poignant matters, and Mr Amery, with whose opening address to the Congress the volume starts, deals with the imperial aspect of social hygiene, will find all medical men in agreement with his pronouncement that the administration of the empire as a whole, as well as the administration of this country, must be based on a sound health policy The addresses of delegates from the Crown Colonies, the Irish Free State, South Africa, New Zealand, Newfoundland, and India echo the same message, and prove that on fundamental questions of sanitation and prevention of disease our Colonial Office will have the various populations under their charge as supporters of hygienic reform

The volume contains important contributions, written out of practical experience, upon the position of the Army and Navy and mercantile marine with regard to venereal diseases, and upon the vast and various difficulties incurred in the treatment of venereal disease in India The problems in the Colonies, Protectorates, and Mandated Territories are mentioned cursorily, but many of the notes here, while they make terrible reading, prove that not only is the public conscience awakened all over the world, but that many sinister foci of disease have been detected and dealt with Sir Kingsley Wood, Parliamentary Secretary to the Ministry of Health, reviews the position with regard to venereal disease in Great Britain as well as in the self-governing Dominions, and is excellently supplemented in an exposition from Colonel L W. Harrison of what has been done in England and Wales during the nine years which have elapsed since the V D scheme was set up The effect of recent activities on the condition of affairs as disclosed by the report of the Royal Commission is remarkable, and no less remarkable are the lessons to be learnt from a study of the working of the scheme All medical men should read the debate on the position of venereal disease in Great Britain and the self-governing Dominions, when Sir Kingsley Wood was able to argue that between 1920 and 1924 there had been a fall of nearly 50 per cent of new cases of syphilis and of some 22 per cent. of new cases of gonorrhœa Colonel Harrison showed that the cost of the venereal disease scheme amounted to about 2½d per head of the population.

TROPICAL EQUIPMENT.

Hints on Equipment and Health for Intending Residents in the Tropics By J BALFOUR KIRK, M B, Ch B Edin, D.P H Oxf, D T M & H Eng London: Baillière, Tindall and Cox. 1926 Pp 120. 3s 6d

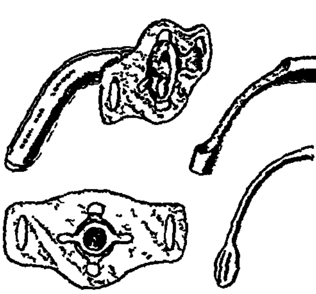
IN the form of a series of letters, written in colloquial style to fictitious characters of differing age and sex who contemplate visiting the tropics, Dr Balfour Kirk has effectively outlined the chief dangers to health that may be encountered. The modest volume contains sound advice, and its 18 chapters are worthy of detailed study. The subject matter covers the necessity of the preliminary medical examination and inoculations, the details of outfit, head covering, underwear, and special items of clothing to protect against mosquito infection Personal hygiene, dietary, and the abuse of alcoholic liquors are discussed, as

are also the best means
regular exercise, rest, and
a comparatively cool hous
on the prevention of mala
termed the filth diseases—n
and the enterica—includes
to combat the vectors,
ants, cockroaches, and o
disposal of excreta T
tropical parasites might
amplified, and in a futur
the experience of the
individual who should
dence in the tropics
physicians still advise
culosis to visit or live in
the advice, the subje
regions is one which me
This little book cont
points not always con
works.

New Inv

A NEW TRACHE

IN THE LANCET of Sept
tracheotomy tube devised o
by Rushton Parker, but wit
with a view to (a) facilitating
breathing during introductio
(c) ensuring the retention of t
patients with fat necks. I fo
were still one or two points
improvement, and I have therefo
as shown in the illustration
been made to overcome the d



being in the way while the tube is
incision in the trachea, and also
experienced of getting the dressing
With the new tube the dressing can
tube when it is in situ, and the sh
fastened on to the tube by a quarter
tied round the neck The inner tu
catch to hold it, but has a small
which, catching into a hole in the
it being coughed out The pilot is
as in the original model—i e, made
can breathe through the tube while
a clip has been added which positi
This clip can be released by depre
the clip It has been found, as a
experience with tracheotomy tu
frequent use the pilots become
have the tendency to drop off
but the addition of the clip
prevent this trouble The
designed in such a way as to b
and to be easily kept clean.
intended entirely to replace t
I think, recommend itself to t
these instruments in frequent
The manufacturers are Me
21 and 23, St Thomas's-stre

A. CUBLEY, M.
North-Eastern Hospital, Totte

'lyglandin'
BRAND
ndular Extract of Thyroid,
itary, Ovary and Testis,
de by Allen & Hanburys Ltd.
ist of proved value in
f the sympathetic ner-
, sex neuroses, senility
conditions generally.
ised that the functions of
organ are plural rather
that the functions of the
rgans are interdependent
that normal metabolism
hormone balance being
atment by pluriglandular
general secretory activity.
pparently monoglandular
more by this treatment
ministration of the extract
gland 'Polyglandin' is a
ract of proved efficacy.
lar, mental and nervous
e elimination of toxins
ulant to the cardio-
system
itions
d drachm is equivalent
glands (including
land)
16 oz. bottles.
Each capsule is equiva
mixed glands (including
oid Gland.
15 mins. is equivalent to
nds (including 1 grain
Gland)
urther particulars
t on request
D.,
E.C.3
York City

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 25, 1926.

THE PHYSIOLOGY OF POSTURE.

THE Cameron Prize Lectures delivered at the University of Edinburgh this year by Prof. RUDOLPH MAGNUS, of Utrecht, and published in the two last issues of THE LANCET, embody much that has already been made familiar to physiologists and clinicians in the pages of his fine volume, "Körperstellung." So complex are the physiological mechanisms implicated in the adoption and maintenance of body posture, so manifold and varied the reactions and inter-reactions of reflex arcs and somatic segments and parts of segments, that it is difficult for the newcomer to the subject to grasp the main principles amid a multiplicity of instances. In the Cameron Lectures Prof. MAGNUS has succeeded in the arduous task of concise yet sufficient exposition, avoiding the extremes alike of needless detail and of unsatisfying generalisation. If he does not in so many words draw conclusions which can be understood by all it is at the same time impossible to read these lucidly expressed lectures without gaining some knowledge of the general schemes whereby posture is regulated. Perhaps the student should first of all impress himself with the significance of the fact that in all of the experimental animals, of varying race and species, utilised for the purpose of posture investigation, the cerebral cortex is excluded—that is to say, the lecturer has obtained postural reactions of every conceivable kind in animals in which, according to all physiological evidence, volitional activity is literally nil. The highest type of experimental animal, the so-called "thalamus animal" (cerebral cortex, pyramidal tracts, and corpora striata being out of action) presents little, if any, recognisable differences from the intact animal when at rest; it appears quite at its ease, its attitudes and movements are not stiff or caricatured; but none the less it is no more than a physiological preparation, in the sense that its reactions are inevitable and systematised, and cannot be modified by volition. In such "thalamus animals," as well, of course, as in others where a greater degree of physiological severance has been effected, attitudes and postures can be elicited and sustained which have all the outward appearance of being smoothly produced—of being, so to say, normally developed—yet they are genuinely reflex, involuntary, automatic. These postures are just such as the intact animal exhibits and Prof. MAGNUS says it is interesting and instructive to observe their development and adoption in "ordinary" animals, the inference being that a large part of the motor activities of the latter is volitional only in appearance and is as a fact determined in a purely reflex fashion.

It would serve no useful purpose to attempt to summarise the long series of postural reactions discovered by Prof. MAGNUS and his collaborators, but some general considerations may be alluded to. When an animal is standing its position is maintained by no expenditure of voluntary effort but is reflexly brought about by the effect of stimuli from internal structures, mainly the muscles concerned (proprioceptive stimuli), and from external structures—e.g., the pads of the feet (exteroceptive stimuli). By means of what are called myotatic or stretching reflexes one muscle group so influences its neighbours and opposing groups that a limb is transformed from a mobile unit to a fixed muscular pillar for the purpose of sustaining body-weight; all is performed reflexly and automatically, and there can be little doubt that in man, analogously, the fixation of a limb, as in skating on the outside edge, follows reflex lines and does not entail the application of a stream of volitional impulses to the muscular groups concerned. When, again, an animal's equilibrium is upset it "rights" itself, a phenomenon that can readily be demonstrated in respect of the head only, or of the body, or of both of these, and this faculty of "righting" is proved to be of the nature of a purely reflex thing. The sensory end-organs concerned and the afferent paths and centres in the neuraxis are known. Thus when an animal is put on its side it will bring its head into the normal position: when the position of its head is altered movements of the body and limbs ensue, and so forth. No less than five sets of reflexes have been distinguished and separately studied, each one of which contributes its quota to the elaboration of the "righting" act. It is a fascinating study, this physiological dissection of the functions of the eyes, labyrinths, otoliths, neck tissues, and lateral end-organs of the body, in regard to the specific contribution each makes to the re-attaining of normal postures when such are disturbed. Prof. MAGNUS has begun by investigation of the reflexes of the spinal animal, then of the mid-brain animal, then of the thalamus animal, and by comparison of the additional reflex reactions obtainable in each of these successively more elaborate preparations he has been enabled to localise the neural centres, and, indeed, the exact anatomical units, for many of the postural activities involved. It would be almost impertinent to praise the infinite attention to detail, amounting to genius, which has resulted in this vast gain in precision and exactitude as far as our knowledge of the function of long familiar anatomical structures is concerned.

The lecturer does not, perhaps, take his reader far along the path toward the logical conclusion of these innumerable experiments, although an adumbration of the end to which they lead is clearly in his mind. We are told that 20 years have been devoted with success to research on the phenomena provided by the decerebrate animal (mid-brain level), and that the task of the immediate future is to investigate those of the thalamus animal with similar care. The result of the former has been to demonstrate beyond cavil that attitudinal as well as "righting" reactions are purely involuntary; in other words, much of what has hitherto seemed to be deliberate and volitional in respect of the animal's motor activity is shown to have another basis, and there is no sufficient reason to hesitate to apply the same conclusion to that of man. Subcortical mechanisms furnish for each new cortical action, without previous voluntary effort, "normal starting positions," says Prof. MAGNUS. If this is true in respect of the unrolling of potentialities of the mesencephalic animal how much more that is commonly thought to be voluntary may not in the event be shown to be a property of the thalamus animal whose cerebral cortex is out of action but which is in many ways seemingly "normal"? We must, naturally, be content with present progress, and not allow speculation to outrun the patient acquisition of data, but it is permissible to suppose, from what Prof. MAGNUS has already established, that volition may be eventually driven to the highest transcortical levels and that a part at least of cortical activity may be shown to be of an involuntary character. To this conclusion certain lines of evidence, derived from the study of human cases, most certainly point.

MATERNAL MORTALITY IN THE UNITED STATES.

In an article which we publish at the *front of this* issue, Dr G. W Theobald, who now occupies *the* Chair of Obstetrics in the Siamese capital, gives a disquieting account of the practice of midwifery in England and Wales as he saw it We at home may take what consolation we can, after admitting the shrewdness of his criticisms, *from the* knowledge that the same problems, producing similar conditions, are being faced abroad This will be gathered *from* a valuable report on maternal mortality and morbidity recently issued by the Children's Bureau of the Federal Government of the United States[1] This report is the work of Mr R M Woodbury, Ph D, formerly director of statistical research in the Bureau Regulations as to licensing of both doctors and midwives vary greatly in different parts of the country, and apart from the large centres of population there appears to be little supervision of the midwives' work, in one New England State midwives are not recognised by law. The great value of Dr Woodbury's report is that it puts before the Federal Government, the Governments of the 48 States, and the American people, the immensity of the problem with which they have to deal The report does not contain definite recommendations for legislation, probably because in the United States there are always two Governments to be considered—the Federal Government and the Government of each of the 48 States *In 1921* the registration area of the U S A covered 38 of these States, and included 82 2 per cent of the total population Dr Woodbury shows that even in the States included in this area there is a want of completeness in the registration of births and deaths, and there is little information forthcoming about midwives and their work Maternal mortality from childbirth in the United States, he affirms, is the highest in the civilised world In the table given in the report Chili comes second, New Zealand third, and Belgium fourth, the countries with the lowest mortalities being Denmark, the Netherlands, and Norway There is nothing encouraging in the figures which show the trend of the mortality during the present century, for although there is a considerable decline in the death-rate from puerperal septicæmia, this is almost balanced by an increase in the death-rate from other puerperal causes Analysis of the maternal deaths during the period shows that two-fifths were due to sepsis and about one-quarter to toxæmias Dr Woodbury believes that with a rigorously aseptic technique almost all deaths from sepsis could be prevented, and that with adequate antenatal care deaths from toxæmia might be practically eliminated Such antenatal care as is given is provided largely through hospitals in the large centres of population From the point of view of public health work, he considers, the problem of preventing puerperal mortality involves not only such general control over the licensing of doctors and midwives as shall ensure that they are properly trained, but also the provision of facilities for giving skilled medical attention and care to every woman who needs it This medical attention must be available during the antenatal, the natal, and the postnatal periods, and the mothers must be educated to demand competent medical supervision during pregnancy The Government, whether Federal or State, has four duties to perform in order that motherhood shall be protected (1) regulation of obstetrical practice, (2) licensing and inspection of public and private hospitals and *maternity* hospitals, (3) social hygiene legislation and the control of venereal diseases, and (4) notification of puerperal septicæmia These matters are dealt with in different ways by the various States, but the Federal Government is in a position to grant subsidies for the promotion of maternity and child welfare to any State which will accept the Sheppard-Towner Act This Act, which has now been accepted by 43 of the States, provides that no part of the Federal subsidies may be used for the purchase, rental, or maintenance of hospitals or other buildings, or for the payment of maternity allowances The intention of the Act is therefore especially to stimulate the appropriate State agencies to undertake educational work One of the noteworthy differences between the problem as it presents itself in the United States and in Great Britain is *the small part* as yet played in America by the midwives, in a large number of States the physicians attend 80 or 90 per cent of the registered births The question of colour and nationality of the mother is considered in the report, and it is pointed out, for example, that the Italian mothers usually prefer midwives, and that the coloured women have a heavier puerperal mortality, probably because they receive poorer medical and midwifery service Where a distinction is made between the attendance on white or coloured population in the various States there is a marked difference Thus in North Carolina 82 2 per cent of the white mothers were attended by a doctor and only 26 5 of the coloured Again, in Washington State only 1 4 per cent of white mothers were not attended by physicians as compared with 73 7 per cent of Japanese, 43 5 of Indians, and 14 9 of the other coloured women As is pointed out, however, the attendance of a physician does not necessarily ensure the best care, nor does that of a midwife necessarily mean the poorest, much depends on the qualifications and training of the particular physician or midwife A table dealing with the maternal mortality in 22 States in the birth registration area during 1919 gives the adjusted rate for the whole area as 7 7 per 1000 births, while the State rates vary from 11 7, 10 4, 9 9, and 9 5 in South Carolina, North Carolina, Oregon, and the district of Columbia, to 6 9, 6 7, 6 1, and 4 8 in Pennsylvania, Connecticut, Kentucky, and Wisconsin Dr. Woodbury estimates that the problem concerns the deaths of 20,000 mothers in the United States annually, and also affects the occurrence of 100,000 still-births and of 100,000 deaths of infants under the age of 1 month

◆

STREPTOCOCCAL TOXIN.

It is generally admitted that the results of the treatment of streptococcal infections by means of such antisera as are now available is as a *rule* very disappointing Why this should be so has until recently remained something of a mystery The explanation seems to have been provided by the work of the Dicks in America upon the streptococcus associated with scarlet fever Whether or *not* the streptococcus isolated by these workers is the *original* and only begetter of the disease still awaits conclusive proof, but quite apart from *this the researches* of the Dicks resulted in the disclosure *of one fact* of supreme importance *They* were *able to* obtain the toxin of their organisms in such a *state* that by the injection of it into animals they could produce a powerful antistreptococcal serum. Of the efficacy of the antiserum produced by the Dicks there can be no doubt. Its capacity for neutralising doses of toxin injected into the human skin, of blanching the scarlatinal rash and finally the results following its use in clinical scarlet fever all demonstrate that it is an agent of the same class as diphtheria antitoxin. The point of importance about this serum is that it is actually antitoxic and not anticoccal—that is to say, it is of the same nature as all the successful sera of which those used against diphtheria tetanus, and gas gangrene are the best examples

---

[1] Maternal Mortality By R. M. Woodbury, Ph D. Publication No 158 Issued by Children's Bureau of U S Department of Labour, from which single copies may be had free of charge

It has long been recognised that the streptococci produce a powerful toxin Thus it is an old observation that the serum obtained from the area of œdema around a cellulitis is sterile. None the less, the invasive power of the streptococcus has to some extent obscured its action as a toxin producer The preparation of a powerful antitoxin for therapeutic use has up to the present been successful only in the case of those organisms such as the *C diphtheriæ* and the *B tetani* whose invasive powers are so limited that in practice it is possible almost to ignore the focus of infection and to concentrate upon combating the generalised toxæmia. The invasive power of the streptococcus is great, but it is probable that extensive invasion only occurs when the way is prepared by the action of the toxin. The work of the Dicks, and much which has followed upon it, seem to indicate that the greater part of the tissue damage done by streptococcal infections is wrought by the toxin and does not follow upon the invasive power of the organism Given an efficient antitoxin it may be possible by neutralisation to prevent this toxic damage and by so doing actually to limit the spread of the organism. Up to the present the only definitely antitoxic streptococcal serum that has been produced is that against the *S. scarlatinæ* of the Dicks It is still doubtful how far this may be active against other strains of streptococci. In other words, the antigenic grouping of the streptococci is still more or less unknown. Many workers are engaged upon this problem at the moment, but from its complexity and the elaborate nature of the researches involved progress must necessarily be slow.

A valuable contribution to the subject is made by Sir Frederick Andrewes in the September number of *St. Bartholomew's Hospital Journal* Messrs. Burroughs and Wellcome produced for Prof. Andrewes toxins from two strains of hæmolytic streptococci, one obtained from a severe but not fatal infection in a nurse, the other being the organism responsible for the death of the late Dr Swann, which was one of the recent calamitous series following upon post-mortem infections among pathological workers in this country. Using these two toxins and a third American strain isolated from a case of erysipelas by Dr. K E. Birkhaug, Prof. Andrewes endeavoured to ascertain by their action upon the skins of normal persons whether or not they all fell into the same group Did they all fall into the same group it is obvious that their actions upon the skins of normal persons should all be the same This was found not to be the case. Some persons responded to one, some to another some to two out of three only, some to none, and so forth Of 48 persons tested only 26 gave the same reaction with all three toxins. This would seem to indicate that the toxins of the hæmolytic streptococci differ in their antigenic quality This must obviously complicate the problem of the preparation of an efficient antiserum; the next step and it may be a very long and difficult one, is to identify the commonly infecting strains of the hæmolytic streptococci. Once this has been achieved the preparation of an efficient antiserum should not prove a difficult matter. The whole of this work is of surpassing interest and importance. The toll which the streptococcus levels upon society is only too well recognised by the public, lay and medical alike There are few laymen who have not in their own experience known of some cases of severe possibly fatal "blood poisoning" following upon apparently trivial injury, and a monument in Westminster Abbey commemorates the lady-in-waiting to Queen Elizabeth who died after pricking her finger with her needle. Among doctors there can be few who have not frequently but vainly longed for some potent weapon against the streptococcus. That weapon is not yet to hand, but it seems that it is in the forging

Annotations.

"Ne quid nimis."

RHEUMATIC DISEASE IN CHILDHOOD

During the past year several investigations into the environment of cases of rheumatic heart disease in children have been carried out by members of the school medical service in different parts of the country. From his study of conditions in Bristol Dr. J. Morrison concludes that rheumatic heart disease in its origin is essentially a disease of the elementary school-child and although he finds no absolute connexion between rheumatic heart disease and poverty—the poorest of the poor are not the class most affected—the disease thrives where social and environmental conditions are worst. Most of the cases he investigated showed a family predisposition to rheumatism Chronic damp also appears to be of moment probably in the direction of lowering the resistance of the body in general to disease. When the situation of heart cases is plotted out on a map of Bristol they are seen to cluster around the many waters, opened and covered in, with which the centre of the city is inter-penetrated. But a little further consideration shows that these areas are, from developmental and economic reasons also the areas where the population is most dense and housing conditions least satisfactory. In London, too, children suffering from rheumatic heart disease are not distributed uniformly over the county area, but as Dr. Jean Shrubsall found many years ago, there are definite aggregations of cases along the lines of alluvial valleys marking the ancient courses of rivers such as the Hole Bourne or Fleet, the West Bourne, the Bridge Creek (Notting Dale), the Wandle, and the Effra. This inquiry has been repeated during the past year by Dr. F. C Shrubsall, whose diagram largely confirms the previous findings. The majority of rheumatic cases are found in the lower-lying districts near the Thames, where there is a densely populated area, particularly in the neighbourhood of the Neckinger in Bermondsey and Rotherhithe. Dr R. H. Vercoe's analysis of ætiological factors in Chelmsford is of special value because he has used controls in each case. His report appears substantially on p 669 of our present issue. Dr. Vercoe finds heredity to be the most important factor, with dampness following closely on it. Malnutrition as judged by height and weight and poor home conditions showed no definite relation to rheumatism. The same applied to septic teeth and enlarged tonsils. These conclusions differ somewhat from those of other investigators, and the explanation may be partly due to inclusion of many less severe cases In the *Birmingham Medical Review* last month Dr. A. P. Thomson gives an interesting spot-map of the distribution of cases in Birmingham, which closely resembles that seen in

MATERNAL MORTALITY IN THE UNITED STATES.

IN an article which we publish at the front of this issue, Dr G. W THEOBALD, who now occupies the Chair of Obstetrics in the Siamese capital, gives a disquieting account of the practice of midwifery in England and Wales as he saw it We at home may take what consolation we can, after admitting the shrewdness of his criticisms, from the knowledge that the same problems, producing similar conditions, are being faced abroad This will be gathered from a valuable report on maternal mortality and morbidity recently issued by the Children's Bureau of the Federal Government of the United States[1] This report is the work of Mr R M WOODBURY, Ph D, formerly director of statistical research in the Bureau Regulations as to licensing of both doctors and midwives vary greatly in different parts of the country, and apart from the large centres of population there appears to be little supervision of the midwives' work, in one New England State midwives are not recognised by law The great value of Dr WOODBURY's report is that it puts before the Federal Government, the Governments of the 48 States, and the American people, the immensity of the problem with which they have to deal The report does not contain definite recommendations for legislation, probably because in the United States there are always two Governments to be considered—the Federal Government and the Government of each of the 48 States In 1921 the registration area of the U S A covered 38 of these States, and included 82 2 per cent of the total population Dr WOODBURY shows that even in the States included in this area there is a want of completeness in the registration of births and deaths, and there is little information forthcoming about midwives and their work Maternal mortality from childbirth in the United States, he affirms, is the highest in the civilised world In the table given in the report Chili comes second, New Zealand third, and Belgium fourth, the countries with the lowest mortalities being Denmark, the Netherlands, and Norway There is nothing encouraging in the figures which show the trend of the mortality during the present century, for although there is a considerable decline in the death-rate from puerperal septicæmia, this is almost balanced by an increase in the death-rate from other puerperal causes Analysis of the maternal deaths during the period shows that two-fifths were due to sepsis and about one-quarter to toxæmias Dr WOODBURY believes that with a rigorously aseptic technique almost all deaths from sepsis could be prevented, and that with adequate antenatal care deaths from toxæmia might be practically eliminated Such antenatal care as is given is provided largely through hospitals in the large centres of population From the point of view of public health work, he considers, the problem of preventing puerperal mortality involves not only such general control over the licensing of doctors and midwives as shall ensure that they are properly trained, but also the provision of facilities for giving skilled medical attention and care to every woman who needs it This medical attention must be available during the antenatal, the natal, and the postnatal periods, and the mothers must be educated to demand competent medical supervision during pregnancy The Government, whether Federal or State, has four duties to perform in order that motherhood shall be protected (1) regulation of obstetrical practice, (2) licensing and inspection of public and private hospitals and maternity hospitals; (3) social hygiene legislation and the control of venereal diseases, and (4) notification of puerperal septicæmia These matters are dealt with in different ways by the various States, but the Federal Government is in a position to grant subsidies for the promotion of maternity and child welfare to any State which will accept the Sheppard-Towner Act This Act, which has now been accepted by 43 of the States, provides that no part of the Federal subsidies may be used for the purchase, rental, or maintenance of hospitals or other buildings, or for the payment of maternity allowances The intention of the Act is therefore especially to stimulate the appropriate State agencies to undertake educational work One of the noteworthy differences between the problem as it presents itself in the United States and in Great Britain is the small part as yet played in America by the midwives, in a large number of States the physicians attend 80 or 90 per cent of the registered births The question of colour and nationality of the mother is considered in the report, and it is pointed out, for example, that the Italian mothers usually prefer midwives, and that the coloured women have a heavier puerperal mortality, probably because they receive poorer medical and midwifery service Where a distinction is made between the attendance on white or coloured population in the various States there is a marked difference Thus in North Carolina 82 2 per cent of the white mothers were attended by a doctor and only 26 5 of the coloured Again, in Washington State only 1 4 per cent of white mothers were not attended by physicians as compared with 73 7 per cent of Japanese, 43 5 of Indians, and 14 9 of the other coloured women As is pointed out, however, the attendance of a physician does not necessarily ensure the best care, nor does that of a midwife necessarily mean the poorest, much depends on the qualifications and training of the particular physician or midwife A table dealing with the maternal mortality in 22 States in the birth-registration area during 1919 gives the adjusted rate for the whole area as 7 7 per 1000 births, while the State rates vary from 11 7, 10 4, 9 9, and 9 5 in South Carolina, North Carolina, Oregon, and the district of Columbia, to 6 9, 6 7, 6 1, and 4 8 in Pennsylvania, Connecticut, Kentucky, and Wisconsin Dr WOODBURY estimates that the problem concerns the deaths of 20,000 mothers in the United States annually, and also affects the occurrence of 100,000 still-births and of 100,000 deaths of infants under the age of 1 month

◆

STREPTOCOCCAL TOXIN

IT is generally admitted that the results of the treatment of streptococcal infections by means of such antisera as are now available is as a rule very disappointing Why this should be so has until recently remained something of a mystery The explanation seems to have been provided by the work of the DICKS in America upon the streptococcus associated with scarlet fever Whether or not the streptococcus isolated by these workers is the original and only begetter of the disease still awaits conclusive proof, but quite apart from this the researches of the DICKS resulted in the disclosure of one fact of supreme importance They were able to obtain the toxin of their organisms in such a state that by the injection of it into animals they could produce to tinker, perhaps even then without safeguarding the future This Memorandum, though necessarily suggestive and tentative rather than axiomatic, contains abundant material for forming a judgment upon what should be done in a particular case It shows the importance of such matters as situation, aspect, area, accessibility, the nature of the soil, and other considerations which were often airily disregarded by the old hospital builders The danger of being hemmed in or of the creation of factories in the immediate vicinity has to be guarded against The buildings must be so disposed that the wards and service departments will obtain every possible ray of sunshine The comfort and convenience of the staff, from the medical officers to the scullery maids, are, in their way, not less important than the most effective disposition of the wards The saving of time and trouble are of cardinal moment in a hospital Without pretending to be detailed or exhaustive the Memorandum is sufficiently specific upon important practical points, such as the size and height of wards, the nature of walls and floors, and the width of stairs, as to afford an almost indispensable guide to those who are responsible for the plans of new hospital buildings The Commission's hints, suggestions, and recommendations embody the fruits of recent experience in a simple and accessible form, and among those recommendations will be noticed a decided preference for the pavilion form and for buildings of not more than three storeys These are matters in which English and American practice differ and in which there is no positive right or wrong Circumstances must everywhere be the governing factor

---

[1] Maternal Mortality By R M. Woodbury, Ph D Publication No 158 Issued by Children's Bureau of U S Department of Labour, from which single copies may be had free of charge

THE ARNETH COUNT

THE number of lobes of the polymorphonuclear leucocyte is subject to considerable variation, upon which fact Arneth based the technique by means of which he claimed to be able to derive some information as to the course of chronic infections Arneth in devising his technique proceeded upon the principle of Heidenhain, according to which the older a cell grows the smaller and the more convoluted becomes its nucleus He believed that the more adult cells that were present in the blood the better the powers of resistance would be Other workers elaborating Arneth's idea satisfied themselves that they had demonstrated that the multilobed and therefore older and more experienced polymorphs were better phagocytes than the single-lobed novices Much paper has flowed through the presses since Arneth published his technique, but although many and diverse workers have applied it to many and diverse conditions with equally manifold and diverse results, it is only lately that the technique has received a thorough critical investigation from the physiological standpoint This has been carried out by E Ponder and others working in the Department of Physiology of the University of Edinburgh, and the results appear in the *Quarterly Journal of Experimental Physiology* (vol. xvi, No 3) Ponder and his associates readily confirmed the almost universally held belief that the youngest form of the polymorph is that possessing an unlobed or two-lobed nucleus Taking advantage of the effect of injections of thyroid extract in causing polymorphs to be thrown out from the bone-marrow of the rabbit into the blood stream, they were also able to establish that it is in this single or two-lobed form that the vast majority of the polymorphs first make their appearance in the circulation They were further able to demonstrate that development into the four- or five-lobed forms takes place in the blood stream, and that it is as the four- or five-lobed forms that the bulk of the polymorphs make their disappearance from the circulation Up to this point the results of the investigation are in accordance with the principles of Heidenhain and the views of Arneth When, however, it came to the investigation of the comparative nuclear area of old and young cells it became apparent that the assumption that as the cells grow older and their nuclei become indented the nuclei also become smaller was incorrect No significant difference in size could be detected between young cells having a single-lobed nucleus and old cells with nuclei of many lobes Similarly, investigation of the comparative phagocytic activity of old and young cells failed to reveal any differences in their power of dealing with micro-organisms It was found that the Arneth count for healthy persons is remarkably constant for the individual, showing little variation over a term of years Pathological alterations did not come within the scope of the investigations, but it is evident that variations under conditions of ill-health in such an otherwise constant system may be of considerable clinical importance in conditions other than those to which Arneth first applied his technique

POISONING CASES IMMEDIATE TREATMENT AT HOSPITALS

UNDER this heading we commented last week upon an inquest, during the course of which Dr Edwin Smith, the coroner for North-East London, criticised the action of the house surgeon at the German Hospital, who had declined to treat a woman brought to the hospital suffering from lysol poisoning The evidence of the house surgeon was to the effect that the woman could not be admitted because no bed was available, and to the coroner's representation that first-aid should have been rendered—it may be added that the patient died shortly afterwards at the Metropolitan Hospital—the house surgeon replied that it would have taken some time to administer treatment, his institution not being duly equipped for such emergencies We were surprised at this statement, and are glad to be informed by the secretary to the German Hospital of the action taken by his Committee in view of the reports in the public press The Committee affirm, in a letter to the coroner, that their institution "is and always has been fully equipped for any emergency, including, of course, cases of poisoning Stomach pumps, antidotes, and emetics are not only in every consulting-room but also in every ward" As a consequence of the house surgeon's misleading evidence we learn that his services have been dispensed with There is, we understand, no suggestion that the life of the unfortunate woman would have been saved if she had been treated at once, but the Committee could do no other than call for the resident's resignation

INJECTION TREATMENT OF VARICOSE VEINS.

VARICOSE dilatation of the veins of the lower extremity is a common affection which exhibits great variation in the degree of disability to which it gives rise Frequently but little complaint is made, so that the patient is well advised to avoid direct treatment Often an elastic support will bring relief Surgical removal does not always free the patient from his symptoms, whilst distension of other veins sometimes occurs after it The direct surgical attack may be unfeasible, because of the complex network of dilated vessels widely spread over almost the whole limb below the knee There are, however, cases where obliteration of the internal saphenous vein is desirable and almost necessary When Trendelenburg's test demonstrates a column of blood unbroken by valves to extend from the heart to the region below the knee, it is, at any rate, a wise precaution to advise ligation and section of the internal saphenous vein at its upper extremity A few weeks ago we published a paper [1] by Sir Sidney Alexander, in which attention was called to an ambulatory method of treating varicose veins The obliteration of veins by the injection of a chemical substance is really a revival of an old procedure The history of the method has recently been told by Dr V Meisen, surgeon-in-chief to the Polyclinic at Copenhagen, who gives an

---

[1] THE LANCET, July 24th, p 176

London. He also states that rheumatism is not closely related to slum conditions. He is an advocate of tonsillectomy, done under ideal conditions, believing that this operation reduces the severity of rheumatism and limits the heart involvement. Dr Reginald Miller, on the other hand, in his report to the Science Committee of the British Medical Association, regards the effect of tonsillectomy as the removal of one factor predisposing to rheumatism and its routine performance as premature. His statement that in London rheumatism is a disease of hospital rather than of private practice—far more so than, for instance, pulmonary tuberculosis—deserves very close thought. For if we can ascertain why the infection is so common in the elementary schools and so rare in the preparatory and public schools, we should have gained a key position in our fight against the disease. In the same report Dr. Carey Coombs and Dr F J Poynton claim that there is no rival to the streptococcic theory of acute rheumatism, although there are certain difficulties which call urgently for a more extended inquiry by experienced bacteriologists. It is abundantly clear that the need of rheumatic children for prolonged care is as yet imperfectly realised in this country. Rheumatism, with its trail of death, maimed lives, and economic loss, is an insidious scourge which demands a concerted effort for its removal.

MENDELIAN VARIATION IN BACTERIA

IN two papers in the current number of the *Journal of Hygiene* (vol xxv, pp 237, 333) Dr F H Stewart, working at the Staffordshire Asylum at Cheddleton, returns to the study of the variations in the power to ferment sugars which may be observed to arise, and may be deliberately induced, in various members of the colon-typhoid group of bacteria. The brand of *Bacillus neapolitanus* which is known as *colon mutabile* does not ordinarily ferment lactose, and if it is plated out on neutral red agar containing lactose the colonies are white. Usually, however, after a while little red papillæ form in the centres of the colonies, and if these papillæ are plated out on to the same agar some colonies come up red and some white. The red colonies breed true and in the same environment always produce red colonies; the white colonies continue to produce red papillæ, which yield a mixture of red and white colonies. The corresponding phenomena are also seen if dulcite or cane sugar is substituted for lactose. And in general terms it is true, as Twort showed many years ago, that a bacillus can acquire the capacity of demonstrably fermenting a sugar by being grown in the presence of that sugar for a longer or shorter time, some organisms do it much more readily than others; some organisms apparently do not do it at all. The facts are obviously of great interest, both for the epidemiologist and the general biologist. Their interpretation is difficult and they have been discussed as examples of mutations, adaptive variations, acquired heritable characters, or possibly simple selection. Dr Stewart gives another explanation which we believe no one has had the courage to put forward seriously before, though many workers must have thought of the possibility and wondered if it was capable of demonstration. The changes in fermentative power which occur occasionally and casually (as in the paracolon race of *B neapolitanus*) he regards as mutations in De Vries's sense. But where, as in the *mutabile* race, the change takes place regularly and uniformly, he takes it to be a straightforward segregation of Mendelian factors. Mutabile is heterozygous, non-fermentation of lactose—i e, white colonies—being dominant; it has the formula IiFF, where F is the factor for the fermentation of lactose, I a factor which inhibits F, and i the absence of I. On ordinary media this goes on without change, in media containing lactose some of the descendants lose I and with a formula iiFF are able to ferment lactose and grow as red colonies; others continue as IiFF, while the pure dominant homozygotes IIFF fail to grow in competition with the other forms. Dr Stewart explains in the same way the appearance of other variations in fermentation and of the capsulated forms which often are more virulent than normal, and in his second paper draws an analogy between the inhibiting factor and an internal secretion.

There are many difficulties in accepting his view of the facts. We do not know whether bacteria have a sexual cycle or not, and we cannot (or do not) trace the descendants of individuals. The further knowledge of reproduction in the higher fungi progresses, the more likely does it seem that bacteria will ultimately be found to have some method of reproduction equivalent to a sexual process, and that the products of such a process may exhibit segregation of characters. But at present nothing certain can be based on any such expectations. And while Dr Stewart's explanation will, as he says, fit his facts fairly well, it is equally true that any set of genetical facts can be explained by a sufficient number of assumptions in respect of environmental inhibiting and lethal factors and variable dominance. These assumptions he makes very freely. For each of them there are established analogies, but the theory as a whole rests on a slender basis. It postulates somatic segregation (as in the derivation of the nectarine from the peach), the production of recessive mutations by environment (as in Harrison's melanic moths) of a kind which are adapted to the environment and non-viable dominants (as in yellow mice), it is also necessary to assume non-viable recessives (for which there are many analogies) if *mutabile* on ordinary media is really a heterozygote. On such terms it is possible to explain almost anything. Technically, such experiments ought to begin with a single cell isolated with all the certainty which is available. Dr Stewart seems to have taken no particular precautions about the purity of his cultures.

THE CONSTRUCTION OF HOSPITALS

So many hospitals are being rebuilt, enlarged, or remodelled, and so many new ones are projected, that the Memorandum on the Construction of Voluntary Hospitals which has just been issued by the Voluntary Hospitals Commission (H M Stationery Office, 2*d*) will serve an exceedingly useful purpose. Hospital architecture, like most other things connected with hospitals, is in a difficult stage of transition. Most human affairs generally are in this stage, though mankind is often unwilling to recognise that the law of its being is opposed to the static condition. How little likelihood there is of standing still where hospitals are concerned is brought home to us, almost alarmingly, by the Voluntary Hospitals Commission's definition of a permanent hospital as "a building expected to be required for 25 or 30 years." When we regard the age of a very large proportion of hospital buildings, the phrase suggests either that the Commission is a very advanced and enlightened body or that the country is very backward in its theories and practice. The latter is, undoubtedly, the real situation, though it must be remembered that what we may call the true hospital creed is not much more than ten or a dozen years old. The Great War, and all that flowed from it, the rapidity of the growth of the hospital idea, the astonishing progress in the scientific study of disease, and especially in the means and methods of preventing it, have combined radically to alter the public conception of the place of the hospital in modern life. The consequence is not only that most hospitals have become too small for the demands upon them, but that many are so constructed, arranged, and equipped that they are incapable of meeting requirements that are constantly growing more numerous and more complex. During the next decade or two, therefore, there must necessarily be vigorous activity in the erection of new buildings and the costly improvement of old ones. It will often be relatively as cheap, when all aspects of the subject are considered, to build afresh and on a new site as to tinker, perhaps even then without safeguarding the future This Memorandum, though necessarily suggestive and tentative rather than axiomatic, contains abundant material for forming a judgment upon what should be done in a particular case It shows the importance of such matters as situation, aspect, area, accessibility, the nature of the soil, and other considerations which were often airily disregarded by the old hospital builders The danger of being hemmed in or of the creation of factories in the immediate vicinity has to be guarded against The buildings must be so disposed that the wards and service departments will obtain every possible ray of sunshine The comfort and convenience of the staff, from the medical officers to the scullery maids, are, in their way not less important than the most effective disposition of the wards The saving of time and trouble are of cardinal moment in a hospital Without pretending to be detailed or exhaustive the Memorandum is sufficiently specific upon important practical points, such as the size and height of wards, the nature of walls and floors, and the width of stairs, as to afford an almost indispensable guide to those who are responsible for the plans of new hospital buildings The Commission's hints, suggestions, and recommendations embody the fruits of recent experience in a simple and accessible form, and among those recommendations will be noticed a decided preference for the pavilion form and for buildings of not more than three storeys These are matters in which English and American practice differ and in which there is no positive right or wrong Circumstances must everywhere be the governing factor

THE ARNETH COUNT

THE number of lobes of the polymorphonuclear leucocyte is subject to considerable variation, upon which fact Arneth based the technique by means of which he claimed to be able to derive some information as to the course of chronic infections Arneth in devising his technique proceeded upon the principle of Heidenhain, according to which the older a cell grows the smaller and the more convoluted becomes its nucleus He believed that the more adult cells that were present in the blood the better the powers of resistance would be Other workers elaborating Arneth's idea satisfied themselves that they had demonstrated that the multilobed and therefore older and more experienced polymorphs were better phagocytes than the single-lobed novices Much paper has flowed through the presses since Arneth published his technique, but although many and diverse workers have applied it to many and diverse conditions with equally manifold and diverse results, it is only lately that the technique has received a thorough critical investigation from the physiological standpoint This has been carried out by E Ponder and others working in the Department of Physiology of the University of Edinburgh, and the results appear in the *Quarterly Journal of Experimental Physiology* (vol xvi , No 3) Ponder and his associates readily confirmed the almost universally held belief that the youngest form of the polymorph is that possessing an unlobed or two-lobed nucleus Taking advantage of the effect of injections of thyroid extract in causing polymorphs to be thrown out from the bone-marrow of the rabbit into the blood stream, they were also able to establish that it is in this single or two-lobed form that the vast majority of the polymorphs first make their appearance in the circulation They were further able to demonstrate that development into the four- or five-lobed forms takes place in the blood stream, and that it is as the four- or five-lobed forms that the bulk of the polymorphs make their disappearance from the circulation Up to this point the results of the investigation are in accordance with the principles of Heidenhain and the views of Arneth When, however, it came to the investigation of the comparative nuclear area of old and young cells it became apparent that the assumption that as the cells grow older and their nuclei become indented the nuclei also become smaller was incorrect No significant difference in size could be detected between young cells having a single-lobed nucleus and old cells with nuclei of many lobes Similarly, investigation of the comparative phagocytic activity of old and young cells failed to reveal any differences in their power of dealing with micro-organisms It was found that the Arneth count for healthy persons is remarkably constant for the individual, showing little variation over a term of years Pathological alterations did not come within the scope of the investigations, but it is evident that variations under conditions of ill-health in such an otherwise constant system may be of considerable clinical importance in conditions other than those to which Arneth first applied his technique

POISONING CASES IMMEDIATE TREATMENT AT HOSPITALS

UNDER this heading we commented last week upon an inquest, during the course of which Dr Edwin Smith, the coroner for North-East London, criticised the action of the house surgeon at the German Hospital, who had declined to treat a woman brought to the hospital suffering from lysol poisoning. The evidence of the house surgeon was to the effect that the woman could not be admitted because no bed was available and to the coroner's representation that first-aid should have been rendered—it may be added that the patient died shortly afterwards at the Metropolitan Hospital—the house surgeon replied that it would have taken some time to administer treatment, his institution not being duly equipped for such emergencies We were surprised at this statement, and are glad to be informed by the secretary to the German Hospital of the action taken by his Committee in view of the reports in the public press The Committee affirm in a letter to the coroner that their institution " is and always has been fully equipped for any emergency, including, of course, cases of poisoning Stomach pumps, antidotes, and emetics are not only in every consulting-room but also in every ward " As a consequence of the house surgeon's misleading evidence we learn that his services have been dispensed with There is, we understand, no suggestion that the life of the unfortunate woman would have been saved if she had been treated at once, but the Committee could do no other than call for the resident's resignation.

INJECTION TREATMENT OF VARICOSE VEINS

VARICOSE dilatation of the veins of the lower extremity is a common affection which exhibits great variation in the degree of disability to which it gives rise Frequently but little complaint is made, so that the patient is well advised to avoid direct treatment Often an elastic support will bring relief Surgical removal does not always free the patient from his symptoms, whilst distension of other veins sometimes occurs after it The direct surgical attack may be unfeasible, because of the complex network of dilated vessels widely spread over almost the whole limb below the knee There are, however, cases where obliteration of the internal saphenous vein is desirable and almost necessary When Trendelenburg s test demonstrates a column of blood unbroken by valves to extend from the heart to the region below the knee. it is, at any rate, a wise precaution to advise ligation and section of the internal saphenous vein at its upper extremity A few weeks ago we published a paper [1] by Sir Sidney Alexander, in which attention was called to an ambulatory method of treating varicose veins The obliteration of veins by the injection of a chemical substance is really a revival of an old procedure The history of the method has recently been told by Dr V Meisen, surgeon-in-chief to the Polyclinic at Copenhagen, who gives an

---

[1] THE LANCET, July 24th, p. 176

London. He also states that rheumatism is not closely related to slum conditions. He is an advocate of tonsillectomy, done under ideal conditions, believing that this operation reduces the severity of rheumatism and limits the heart involvement. Dr. Reginald Miller, on the other hand, in his report to the Science Committee of the British Medical Association, regards the effect of tonsillectomy as the removal of one factor predisposing to rheumatism and its routine performance as premature. His statement that in London rheumatism is a disease of hospital rather than of private practice—far more so than, for instance, pulmonary tuberculosis—deserves very close thought. For if we can ascertain why the infection is so common in the elementary schools and so rare in the preparatory and public schools, we should have gained a key position in our fight against the disease. In the same report Dr. Carey Coombs and Dr. F. J. Poynton claim that there is no rival to the streptococcic theory of acute rheumatism, although there are certain difficulties which call urgently for a more extended inquiry by experienced bacteriologists. It is abundantly clear that the need of rheumatic children for prolonged care is as yet imperfectly realised in this country. Rheumatism, with its trail of death, maimed lives, and economic loss, is an insidious scourge which demands a concerted effort for its removal.

MENDELIAN VARIATION IN BACTERIA

IN two papers in the current number of the *Journal of Hygiene* (vol. xxv., pp. 237, 333) Dr. F. H. Stewart, working at the Staffordshire Asylum at Cheddleton, returns to the study of the variations in the power to ferment sugars which may be observed to arise, and may be deliberately induced, in various members of the colon-typhoid group of bacteria. The brand of *Bacillus neapolitanus* which is known as *colon mutabile* does not ordinarily ferment lactose, and if it is plated out on neutral red agar containing lactose the colonies are white. Usually, however, after a while little red papillæ form in the centres of the colonies, and if these papillæ are plated out on to the same agar some colonies come up red and some white. The red colonies breed true and in the same environment always produce red colonies, the white colonies continue to produce red papillæ, which yield a mixture of red and white colonies. The corresponding phenomena are also seen if dulcite or cane sugar is substituted for lactose. And in general terms it is true, as Twort showed many years ago, that a bacillus can acquire the capacity of demonstrably fermenting a sugar by being grown in the presence of that sugar for a longer or shorter time; some organisms do it much more readily than others, some organisms apparently do not do it at all. The facts are obviously of great interest, both for the epidemiologist and the general biologist. Their interpretation is difficult and they have been discussed as examples of mutations, adaptive variations, acquired heritable characters, or possibly simple selection. Dr. Stewart gives another explanation which we believe no one has had the courage to put forward seriously before, though many workers must have thought of the possibility and wondered if it was capable of demonstration. The changes in fermentative power which occur occasionally and casually (as in the paracolon race of *B. neapolitanus*) he regards as mutations in De Vries's sense. But where, as in the *mutabile* race, the change takes place regularly and uniformly, he takes it to be a straightforward segregation of Mendelian factors. Mutabile is heterozygous, non-fermentation of lactose—i.e., white colonies—being dominant; it has the formula IiFF, where F is the factor for the fermentation of lactose, I a factor which inhibits F, and i the absence of I. On ordinary media this goes on without change; in media containing lactose some of the descendants lose I and with a formula iiFF are able to ferment lactose and grow as red colonies; others continue as IiFF, while the pure dominant homozygotes IIFF fail to grow in competition with the other forms. Dr. Stewart explains in the same way the appearance of other variations in fermentation and of the capsulated forms which often are more virulent than normal, and in his second paper draws an analogy between the inhibiting factor and an internal secretion.

There are many difficulties in accepting his view of the facts. We do not know whether bacteria have a sexual cycle or not, and we cannot (or do not) trace the descendants of individuals. The further knowledge of reproduction in the higher fungi progresses, the more likely does it seem that bacteria will ultimately be found to have some method of reproduction equivalent to a sexual process, and that the products of such a process may exhibit segregation of characters. But at present nothing certain can be based on any such expectations. And while Dr. Stewart's explanation will, as he says, fit his facts fairly well, it is equally true that any set of genetical facts can be explained by a sufficient number of assumptions in respect of environmental inhibiting and lethal factors and variable dominance. These assumptions he makes very freely. For each of them there are established analogies, but the theory as a whole rests on a slender basis. It postulates somatic segregation (as in the derivation of the nectarine from the peach), the production of recessive mutations by environment (as in Harrison's melanic moths) of a kind which are adapted to the environment and non-viable dominants (as in yellow mice); it is also necessary to assume non-viable recessives (for which there are many analogies) if *mutabile* on ordinary media is really a heterozygote. On such terms it is possible to explain almost anything. Technically, such experiments ought to begin with a single cell isolated with all the certainty which is available. Dr. Stewart seems to have taken no particular precautions about the purity of his cultures.

THE CONSTRUCTION OF HOSPITALS

So many hospitals are being rebuilt, enlarged, or remodelled, and so many new ones are projected, that the Memorandum on the Construction of Voluntary Hospitals which has just been issued by the Voluntary Hospitals Commission (H.M. Stationery Office, 2*d.*) will serve an exceedingly useful purpose. Hospital architecture, like most other things connected with hospitals, is in a difficult stage of transition. Most human affairs generally are in this stage, though mankind is often unwilling to recognise that the law of its being is opposed to the static condition. How little likelihood there is of standing still where hospitals are concerned is brought home to us, almost alarmingly, by the Voluntary Hospitals Commission's definition of a permanent hospital as "a building expected to be required for 25 or 30 years." When we regard the age of a very large proportion of hospital buildings, the phrase suggests either that the Commission is a very advanced and enlightened body or that the country is very backward in its theories and practice. The latter is, undoubtedly, the real situation, though it must be remembered that what we may call the true hospital creed is not much more than ten or a dozen years old. The Great War, and all that flowed from it, the rapidity of the growth of the scientific hospital idea, the astonishing progress in the means and study of disease, and especially in the methods of preventing it, have combined radically to alter the public conception of the place of the hospital in modern life. The consequence is not only that most hospitals have become too small for the demands upon them, but that many are so constructed, arranged, and equipped that they are incapable of meeting requirements that are constantly growing more numerous and more complex. During the next decade or two, therefore, there must necessarily be vigorous activity in the erection of new buildings and the costly improvement of old ones. It will often be relatively as cheap, when all aspects of the subject are considered, to build afresh and on a new site as industrial conditions much accentuated lately by trade depression and the shortage of suitable investigators available. Attention is called to the many openings which will arise in future for those with scientific training to take up work of this kind.

NATIONAL INSTITUTE FOR THE DEAF.

AT the second annual meeting of the Council of the National Institute for the Deaf (formerly the National Bureau for Promoting the General Welfare of the Deaf) certain resolutions were passed,[1] and the Committee of the Institute have now prepared and circularised for consideration and criticism a memorandum dealing with the present position and the possible promotion of means to give the deaf population better opportunities of becoming self-supporting The Committee points to the weakness of existing organisation with the following statement .—

> (a) The incidence of societies is markedly uneven and accidental. Large parts of the country are not provided for, while in some cases there is overlapping
>
> (b) There is no equality of welfare effort. The efficiency of the service varies in different areas and even in different parts of the same area.
>
> (c) There is a general insufficiency in the staffs available for the work.
>
> (d) The funds available for the service are generally insufficient
>
> (e) There are no general training facilities for the welfare worker There is no coördination between the 50 existing societies no regular or efficient means of conference and no provision for recording general experience and statistics. The result is that there is an absence of national ideals and a serious lack of corporate action to advance the general cause of the deaf.

It will be seen at once that if the funds, whose absence is noted, were forthcoming, the other defects would soon disappear under the energy now being displayed by the Institute. The existing welfare agencies have cognisance probably of less than half the 40,000 deaf-born persons in the country, while in great areas there is a total lack of provision for dealing with the problems We have received the last annual report of the Institute, from which it is clear that to maintain the important work already done and doing and to extend its usefulness much more money is required For this purpose an appeal is about to be launched, and it is worthy of medical support, for, apart from those medical men who are specially interested in the welfare of the deaf, all practitioners in the course of their work have come across deaf subjects, not necessarily patients whose future is a great source of anxiety In some of these cases the mental condition should be properly estimated ; in others arrangement is needed for their education : yet again in others organisation is required to assist them to obtain posts which despite their physical drawbacks they could fill satisfactorily. We hope, in this last connexion, that the full returns of the inquiry into the industrial conditions of the deaf, which is now in progress, will shortly be available

THE MEDICAL DEFENCE UNION

THOSE who read the annual report for 1925 of the Medical Defence Union must be struck by the value of the work it records, and must wonder again at the temerity of medical men who do not join any protective society It is a tradition amongst money-lenders that doctors are easily deceived and undoubtedly there are many of them who believe that as long as they do their duty the law will never let them down Unfortunately, this is far from true Every practitioner runs a constant risk at the hands of cantankerous or misguided patients, and a good defence may not save him from financial loss Last year for instance a charge of negligence was brought against a medical man by a patient who was earning but a few pounds a week. The costs of defending the action amounted to over £500 and although the doctor won the case, he could never have recovered a penny of his £500, and would have been that amount to the bad if he had not been a member of the Medical Defence Union which bore the whole cost for him. Innocence, even nowadays, may be as expensive as guilt and members of a vulnerable profession ought to protect themselves when it can be done so cheaply by joining the Medical Defence Union or a kindred society. By so doing they gain skilful advice and unlimited indemnity in cases which the Union can defend, and they need never be forced, by lack of funds into making settlements out of court—a necessity which may adversely affect other doctors, by encouraging litigious or unscrupulous people to similar efforts The affairs of the Union are in a very satisfactory state and the membership had risen to 12,976 by the end of last year The annual report is worth reading because it discusses a number of questions which may at any moment become acutely important to practitioners The responsibility of doctors for the acts of their locum tenents and assistants is again considered and the recommendation renewed that such representatives should be persuaded themselves to join a protective society Time-worn but ever necessary advice is given about the need for radiography in every case of injury where bones or joints may be involved, and the usual warning against taking action before consulting the Union is reiterated Referring to appeals to the Ministry of Health against decisions by insurance committees, the Union's solicitors make the following reassuring comment .—

> "We have frequently heard members of the profession criticise the appellate provisions contained in the Insurance Acts and the nature of the tribunal to which the appeal is made, but in justice, we feel that we ought to say that, in our experience appeals are conducted with the utmost fairness, and that the facilities now provided under the Insurance Acts ensure a full and impartial inquiry by skilled and trained officers The only criticism we have to make is with regard to the amount awarded in point of costs, as, even where costs are awarded to a successful party these are seldom anything like sufficient to defray the expenses involved and frequently prove to be irrecoverable."

Besides defending its own members the Union aims at protecting the interests of the profession as a whole and also of the public To this end it takes action against irregular practice, where this can be brought within the limited scope of the penal sections of the Medical Acts and it brings suitable cases to the notice of the General Medical Council The solicitors find it a matter of surprise how little the functions of the Council are understood by the ordinary practitioner and their report endeavours to clear up some of these misunderstandings. The Union has always done its best to discourage litigation or disputes between members of the profession and is always prepared to lend its aid to the settlement of disputes between practitioners Arbitrators have been from time to time appointed in order to prevent cases going into court and this arrangement can be of great service to the profession

HISTORY OF THE ROYAL SANITARY INSTITUTE.

DR Louis C Parkes Vice-President of the Royal Sanitary Institute, has written a worthy account[1] of a body doing very valuable work The Institute had its origin in a discussion at the meeting of the Social Science Congress in 1876 after which Dr. Lory Marsh caused an advertisement to be inserted in THE LANCET and *The Sanitary Record* setting forth suggestions for its establishment The objects proposed were as follows · To provide a central place account[2] of his own experimental and clinical observations He has discarded the use of mercurial solutions, carbolic acid, or acetone, finding that he gets the best results with a 20–30 per cent solution of sodium salicylate Experimentally he finds in the horse that such injections cause almost instantaneous clotting and the thrombus is very firmly attached to the wall of the vein Inflammatory changes occur in the vessel wall and organisation of the clot soon takes place In the treatment of varicose veins Meisen deprecates confinement to bed during the injections The whole duration of the treatment may extend over a number of weeks, as multiple injections at intervals of 3–4 days may be necessary His results in 43 cases have been ultimately satisfactory There are difficulties and drawbacks to the method In five patients an ascending chemical phlebitis was set up, causing a little anxiety, but in all of them the trouble promptly subsided with rest The incidence and course of this complication are obviously important factors to be considered in appraising the value of the method Injections above the lower third of the thigh are not recommended In one patient high temperature and rigors followed injection in the presence of eczema and were probably septic in origin Intractable ulcers have been made to heal by injecting the neighbouring dilated veins An unpleasant complication is the formation of a slough at the site of the puncture, owing to escape of some of the hypertonic solution into the subcutaneous tissue. To avoid it the tissues in the neighbourhood of the injected vein are infiltrated, after the salicylate has been used, with normal saline solution Ulcers which occur in this way are to be avoided as they take months to heal On the whole the very detailed and careful work at Copenhagen is favourable to the method, but it would certainly appear advisable to proceed with caution before recommending its general adoption as a routine, for it seems that in other hands less familiar with the technique complications have been more frequent than after the usual surgical ligature and excision operation.

---

[1] THE LANCET, 1926, i 1223

[1] A History of the Royal Sanitary Institute with Special Articles on the Progress of Sanitation during the Last Fifty Years London Offices of the Institute 90 Buckingham Palace-road. 1926 Pp 11[illegible] 2s 6d

PROLONGED NARCOSIS IN PSYCHIATRY.

READERS of medical literature are familiar with certain forms of treatment which produce good results, though the modus operandi is obscure Examples of such empirical methods are the use of malaria in paresis, or the injection of bodies which produce a leucocytosis, accompanied with more or less severe local and general reactions Recently assault upon established psychoses has been attempted by producing a prolonged state of drowsiness, or even sleep Some promising results have been published, and it is possible that something is to be hoped from this method of treatment Numerous drugs have been used for producing the prolonged sleep—morphine, hyoscine, bromides, and other established hypnotics among them In this country little use has been made of somnifen, which is a mixture of the di-ethylamine salt of di-ethyl-barbituric acid and allyl-iso-propyl-barbituric acid prepared in a Swiss laboratory, but the drug has been extensively tested in Switzerland by Hediger and some of his pupils, who report encouraging results Major O A R Berkeley-Hill, of the Indian Medical Service, in a series of three cases, did not find the results particularly successful The technique is not easy The drug is given intravenously or intramuscularly, and produces a deep sleep which lasts for a number of hours When consciousness partly returns the patient is given another dose, which ensures a further period of sleep Care must be taken to see that the bowels and urine are attended to, in many cases artificial feeding, catheterisation, and enemata being required. The period of sleep is prolonged for several days, the Swiss physicians continue it for ten days or more But the longer the treatment the more definite the risk, and since fatalities have occurred it is the wiser plan to try a period of five or six days at first, when if improvement follows a second period of narcosis can be induced Careful nursing is essential, during the treatment the temperature must be watched and the injections discontinued if a sharp rise takes place The type of case which benefits has not as yet been clearly defined, although the schizophrenoid group, confusional states, and anxiety conditions seem suitable for trial Schizophrenoid cases wake clearer and freer from hallucinations but tend to relapse under stress of ordinary life The chronic course of mental disease renders any avenue of treatment which offers a reasonable prospect of success worthy of careful exploration

INDUSTRIAL FATIGUE

THE sixth annual report[1] of the Industrial Fatigue Research Board, which makes its appearance as we are going to press, covers the period up to Dec 31st, 1925, and includes an admirable summary of work already published Further investigation into problems of wide industrial importance showed that a spell of work broken by a short rest is more effective than an unbroken spell of the same length, while rest pauses not only reduce monotony and increase contentment, but result in a genuine increase in the rate of output Inquiry into the causation of accident led to belief in the ultimate possibility of indicating in advance persons having a special susceptibility to accident The speed with which skill can be acquired in different types of occupation has been systematically studied, but the inquiry has come up against the great difficulty of obtaining reliable data under actual factory conditions, and it is to be continued in the laboratory A study in vocational guidance, published in collaboration with the National Institute of Industrial Psychology, has established the greater stability of employment and greater contentment with conditions of work in a group of children placed in occupations which the tests indicated as suitable for them Problems submitted by Government departments to the Board have included an analysis of sickness in cotton-weaving sheds and the determination of the actual load that can be lifted or carried by women or young workers without injury or discomfort Laboratory work carried out at University College, London, suggests that lactic acid may be regarded as a governor of oxidation in the body during muscular work and that carbohydrate is the primary fuel of muscle A remarkable investigation into violent athletic effort revealed an oxygen requirement of about ten times the normal during a short sprint At Guy's Hospital the tests for physical fitness have been continued, especially in relation to the disability of cardiac cases At Cambridge attention has been given to the efficiency of instruction in regard to the type of mental imagery of the taught, the result varying according to whether the given person is a visualiser or an audile Work continued at Glasgow has afforded no evidence that healthy women are rendered physiologically ineffective during the menstrual period At Manchester the psycho-galvanic reflex has been further studied In view of the results obtained by many groups of investigators up to the present time Mr William Graham, chairman of the Board, remarks that the time is fast approaching when the scientific study of the human factor in industry will no longer be regarded as a praiseworthy attempt to benefit a few individual workers, but will be accepted as the beginning of a movement with limitless possibilities in which industry itself must participate The Board has no longer any doubt that the well-being of the worker and his productive efficiency can be definitely increased by finding and adopting the most favourable conditions and methods of work Immediate obstacles to the work of the Board are the unexpected variations in

---

[2] Ugeskrift for Laeger, Oct 22nd, 1925

[1] Medical Research Council H M. Stationery Office 1926 3s

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation on the Treatment of Medical and Surgical Conditions

CXC—THE TREATMENT OF HALLUX VALGUS AND HALLUX RIGIDUS

Nature and Causation of Hallux Valgus

Hallux valgus consists essentially of a lateral deviation of the big toe towards the middle line of the foot at the metatarsophalangeal joint A deviation of the terminal joint of the big toe in the same direction is not unusual and should not be termed a hallux valgus, as it does not give rise to the same symptoms or disability. Sooner or later a hallux valgus deformity gives rise to the following secondary conditions to which the actual symptoms are due

1 The articular surface of the phalanx ceases to articulate with the whole of the metatarsal, leaving an uncovered boss of bone projecting on the inner side of the foot. The articular surface of the head of the metatarsal becomes grooved its outer part continuing to form part of the joint, its inner part forming a prominence, often called an exostosis This projecting bone gradually becomes enlarged and thickened as the result of chronic inflammatory change and gives rise to the next train of symptoms

2 Over the bony prominence a pad and bursa develop On dissection it will often be found that this bursa communicates with the joint, and that there is also a large amount of new fibrous tissue attached to the head of the metatarsal. The skin over this pad and bursa develops callosities and sometimes a true corn. Much of the pain of hallux valgus is due to friction or local pressure upon a bursa and upon the callosity overlying it.

3. Recurring attacks of inflammation in the bursa and in the skin overlying it may eventually result in suppuration of the bursa, which may subside after incision and drainage, but often leaves an intractable sinus.

4. Apart altogether from suppuration a secondary arthritis with production of new bone around the head of the metatarsal and stiffening of the joint is not uncommon in an old-standing hallux valgus.

5 Owing to the lateral deviation of the big toe the second toe may be lifted completely off the ground and lie on the top of the phalanges of the big toe. Often, however, there is a coexisting hammer-toe, which lies in between the proximal phalanges of the big toe and the third and which is compressed and rendered more deformed by the increasing deviation of the big toe.

6 Nearly always the feet become widened across the region of the metatarsal heads, the transverse arch is lost, and the head of the second metatarsal comes heavily on the ground and takes more weight than does the head of the first. A callosity, which may be very painful develops in this situation and may, in fact, constitute the patient's chief complaint. Clawing up of the other toes with complete loss of the transverse arch of the foot is quite common.

Ætiological Factors

Among the ætiological factors of hallux valgus must be included a congenital tendency, since the condition is found occasionally in childhood. usually associated with a hammer (second) toe. Pressure by boots and shoes is however, the most important cause Severe degrees of hallux valgus are far more common in women than in men, and this must be ascribed to the type of shoe worn.

Tight shoes which exert a lateral pressure upon the toes beyond the metatarsal heads are an important factor; in these shoes the upper is often much wider than the sole, so that the region of the metatarsal heads can bulge at the sides over the sole, the toes being tightly compressed. The shoe is also brought to a point underneath its middle, so that the inner border is not nearly straight, but convex inwards. Another important factor in the shape of the shoe is the pitch of the heel, the surface of which should be approximately parallel with the ground. In many shoes with heels of 1½ in. or more in height, the heel slopes downwards and forwards, so that the foot tends to slide forwards into the toe of the shoe, and even when the shoe is apparently quite large the toes tend to get compressed. This compression not only acts mechanically in causing a deviation of the big toe but also interferes with the use of the intrinsic muscles of the foot and, by throwing the abductor hallucis out of action, prevents the natural effort to correct the hallux valgus The fit along the inner border of the shoe is a further factor in increasing the deformity. In most women's shoes it will be found that the leather is not close up to the foot behind the head of the first metatarsal The result is local pressure upon the prominent joint without corresponding support behind it, and this local pressure increases the development of new bone and causes continuous irritation.

In many cases of hallux valgus the longitudinal arch of the foot is flattened and the foot is in a valgus position, the patient walking on the inner border. This additional pressure against the inner side of the big toe tends to increase the deformity.

Nature and Causation of Hallux Rigidus

Hallus rigidus consists of a chronic arthritis of the metatarsophalangeal joint of the big toe with the production of much new bone. mainly around the head of the metatarsal but also to a less extent around the base of the phalanx.

The head of the metatarsal is altered in shape, becoming squared off at the corners instead of rounded. In most cases there is a collar of new bone at the margin of the articular surface right round the dorsal surface. Sometimes with or without this collar, definite large exostoses are formed, and occasionally these are attached by a narrow pedicle. The synovial membrane of the joint is thickened and sometimes becomes villous, sometimes there is cystic degeneration, so that around the joint a swelling may form looking like a ganglion and containing glairy synovial fluid. Very occasionally a loose body may be found in the joint.

In the early stages extension of the joint becomes limited, and later it is gradually abolished. In very severe cases the toe may become permanently flexed and incapable of extension even to the straight line position Pain is sometimes due to actual pressure upon the exostosis, over which a bursa may develop: very often it is due to the fact that the forcing of extension, which occurs at every step, is painful. The presence of any considerable mass of new bone on the outer side of the head of the first metatarsal in proximity to the second metatarsal is almost certain to be associated with severe pain.

Hallux rigidus often comes on in adolescence. although the more severe effects may only be evident many years later In unilateral cases there is often a history of injury to the toe, such as stubbing the toe severely, or tripping and forcing extension or flexion violently. Bilateral cases and cases in which there is no injury are common, and it is difficult to find a causative factor. Probably the wearing of shoes that have become too short, so that the toe is continuously pressed backwards, is an important cause, and any slight injuries to the toes during the period of growth are also important The teaching of toe dancing to children without suitable preparation is undoubtedly a factor in some cases.

Non-Operative Treatment.

In early cases of hallux valgus an effort should be made to prevent the progress of the deformity and to avoid the need for operative treatment. The longitudinal and transverse arches should be adequately supported. the former by thickening the inner side of the sole of the shoe slightly, the latter by strapping the foot circularly behind the heads of the metatarsals for a period of two or three months at a time. If the longitudinal arch is really flat, it may be necessary to lift it by inserting a pad in the shoe. but this should seldom be required if shoes are acurately fitted and the waist strengthened so that it does not give way. Defects in shoes such as those mentioned above should be avoided. Great care should be taken that shoes do not press upon the head of the metatarsal bone and cause additional inflammation. In young people much can be done by massage. first getting the big and second toes thoroughly mobile and then trying to re-educate in use the small muscles of the foot. Voluntary abduction of the big toe should be taught, also flexion of all the toes at the metatarsophalangeal joints, and the exercise of raising the transverse arch of the foot by pressing the toes against the ground should be practised.

in London where members could meet and where sanitary appliances could be submitted for inspection and experiment, to watch all measures introduced to Parliament relating to public health and to take action thereon if necessary, and to obtain a Charter for the purpose of examining and granting certificates of qualification to surveyors of sanitary districts and inspectors of nuisances The next step was taken at a public meeting in St James's Hall under the presidency of the sixth Duke of Northumberland, the Institute came into being and the Duke became its first President At the beginning, as usual, there were financial difficulties, for the new-born Institute had no backing from the Government or from existing institutions, but by 1877, in which year its first congress was held at Leamington under the presidency of Dr B W Richardson, the treasurer was able to show a credit balance of £32 10*s* 3*d* Dr. Richardson was a great asset to the Institute on account of his paper entitled Hygeia, the Ideal City of Health, read at the Social Science Congress at Brighton in 1875, which had established him in the eyes of the public as a leading medical light on the new science of preventive medicine, the subject aroused interest not only in England but also in France, owing to the brilliant sketch of the paper given by Jules Verne in his romance, "The Begum's Fortune" Dr Parkes supplies interesting biographical notes of the pioneers associated with the early days of the Institute, beginning with Edward Alexander Parkes, originator of the Parkes Museum of Hygiene, who was chief begetter of the Institute although he died before it came into being He gives a full description of the work of the Institute during the 50 years of its existence, ending his book with a series of admirable special articles on sanitary progress during the period under review

CAMBRIDGE MEDICAL SOCIETY IN AMERICA

SEVENTY-EIGHT members of the Cambridge University Medical Society have been visiting the United States and Canada during the past month and have returned full of enthusiasm at their reception All but two of the party were students or had lately qualified, and their object was to get an idea of the methods and ideals of American education by visiting universities and hospitals Nothing quite like this has been done before, and it is satisfactory that the experiment was a complete success Only 23 days were spent ashore, but an incredible amount was seen and done, thanks to the careful planning of details and the unfailing kindness of the Society's American hosts in every city The following places were visited Montreal (McGill University, Royal Victoria and General Hospitals), Kingston University; Toronto (University, Children's and General Hospitals, and the Insulin Building), Niagara, Washington (Hygienic Laboratory, Surgeon-General's Library, Walter Reed and Naval Hospitals), Baltimore (Johns Hopkins Hospital), Philadelphia (University of Pennsylvania Hospital), New York (Columbia University and new medical building, Rockefeller Foundation, Bellevue Hospital, and Cornell Medical School), New Haven (Yale University and General Hospital), and Boston (Harvard University, Peter Bent Brigham, Boston Lying-in, Children's, Psychopathic, City, and Massachusetts General Hospitals) Various methods of demonstration were adopted Sometimes special emphasis was laid on equipment and organisation; in New York it was possible to see a sky-scraper hospital and medical school actually in course of construction In other cases series of short clinical lectures, demonstrations, or surgical operations were utilised to illustrate the work being done in the hospitals or the method of teaching adopted It was always feasible for those specially interested in any particular branch of medicine to follow their own bent, and for the whole party to meet members of the faculties, who put themselves at their service—as one of the visitors expresses it—in a way that would have honoured far more distinguished guests Time was also found for sight-seeing, and there were social occasions described as peculiarly delightful Some appreciation of American and Canadian outlook and ideals must have been gained by everyone, and the experience will be of great value to each member of the party as an individual Since all of them are, or soon will be, spread about in hospitals and medical schools all over the country this experience may well have far-reaching effects At any rate, members of the Society have come home full of gratitude for the kindness and hospitality they have received and anxious to do anything they can for American and Canadian students, and especially for medical students visiting this country.

The Services.

ROYAL NAVAL MEDICAL SERVICE

Surg Comdr M J Laffan is placed on Retd List with the rank of Surg Capt

Surg Lt-Comdr P N Button to be Surg Comdr

The following appointments are notified —Surg Comdrs (D) J R Palmer to *Vivid* for R N Barracks, Devonport (on relief), and W C Murray to *Victory* for R N Barracks, Portsmouth (on relief) Surg Lt-Comdrs (D) W E A Sampson to *Vivid* for R N Hospital, Plymouth, and M F Hopson to *Pembroke* for R M Infirmary, Deal

ROYAL ARMY MEDICAL CORPS

Col C W Mainprise, late R A M C, to be Maj-Gen, vice Maj-Gen D J Collins, late R A M C, who retires on retd pay

Maj G E Cathcart to be Lt-Col, vice Lt-Col and Bt-Col H C R Hime (promoted)

The undermentioned are secd for service under the Foreign Office Maj and Bt Lt-Col H M J Perry and Capt H J Bensted Capt G S McConkey to be Maj (Prov)

The undermentioned Lts to be Capts F C H Sergeant and W L S Cox

J W de W G Thornton to be temp Lt

ARMY DENTAL CORPS

Temp Capt J McCurdy, Dental Surg, Gen List, to be Capt

ARMY RESERVE OF OFFICERS

The undermentioned having attained the age limit of liability to recall, cease to belong to the Res of Off Lt-Gen Sir C H Burtchaell and Col A G T Cusins

Maj L T Challenor, late R A M C, T A, to be Maj

TERRITORIAL ARMY

A A Allison to be Lt

ROYAL AIR FORCE

Flying Officer A Harvey is granted a permanent commission

J Hutchieson is granted a short service commission as a Flying Officer for three years on the active list

Flying Officer F P Schofield is promoted to the rank of Flight Lt

Flying Officer C J MacQuillan is transferred to the Reserve, Class D 2

It is officially announced that the King has approved of the appointment of Lt-Gen Sir Matthew H G Fell, K C B, C M G, late R A M C, to be Honorary Physician to his Majesty, with effect from June 3rd, vice Lt-Gen Sir William B Leishman, K C B, K C M G, F R S, late R A M C, deceased

ST BARTHOLOMEW'S HOSPITAL —In connexion with the Fleet-street Week for Bart.'s, an Empire concert is to be given in aid of the hospital, on Tuesday, Oct 12th, at 8 15 P M, at the Kingsway Hall, London Tickets may be had from the organisers at 3, Red Lion-court, Fleet-street, E C 4

FIG. I.

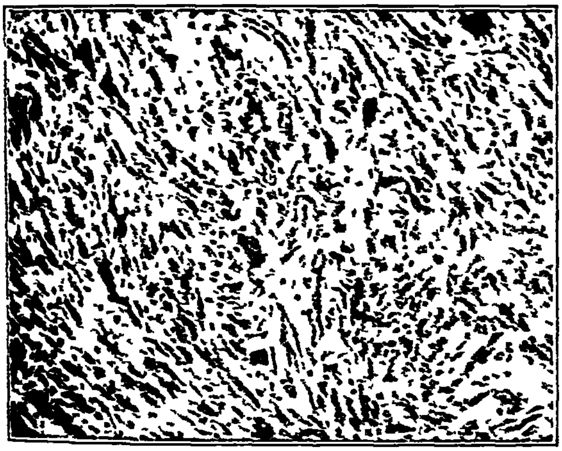


FIG IV.

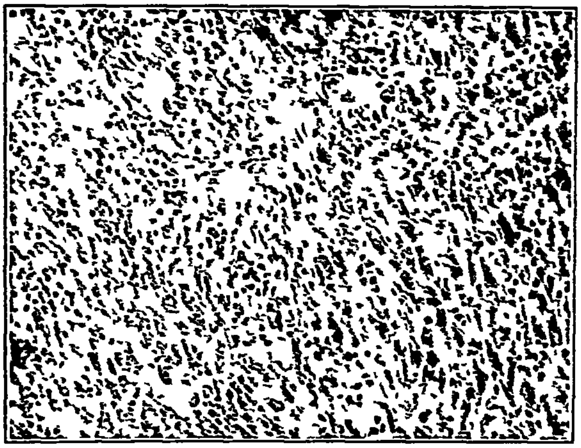


FIG II

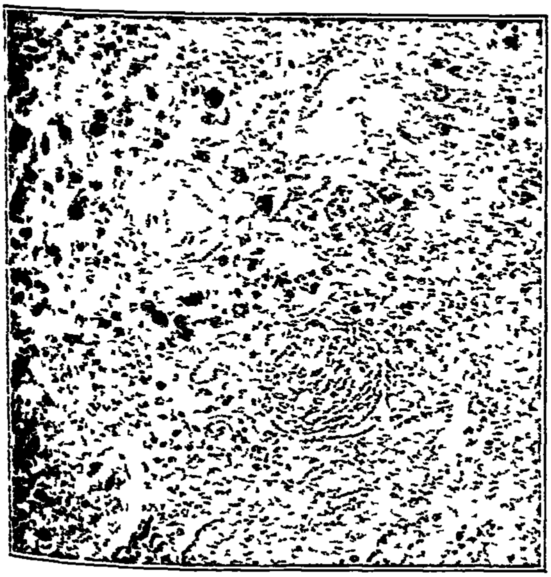


FIG V

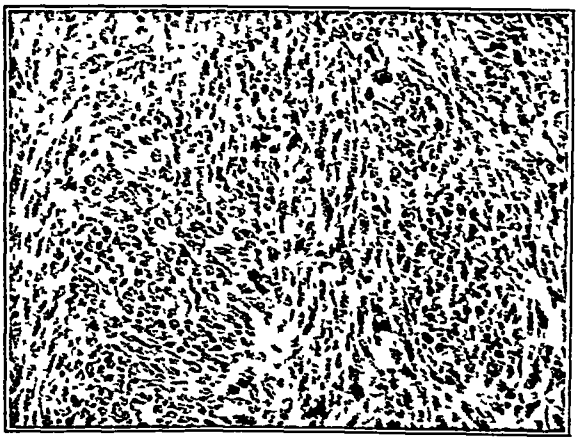


FIG III

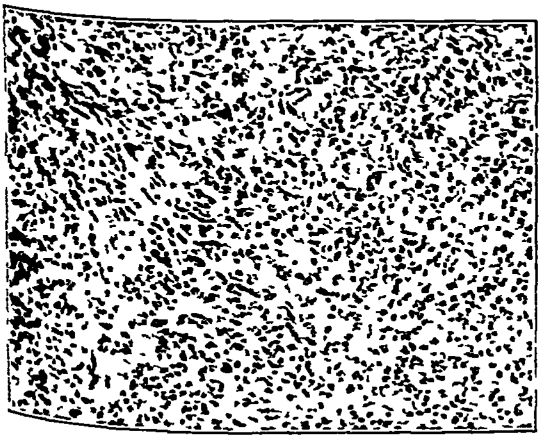
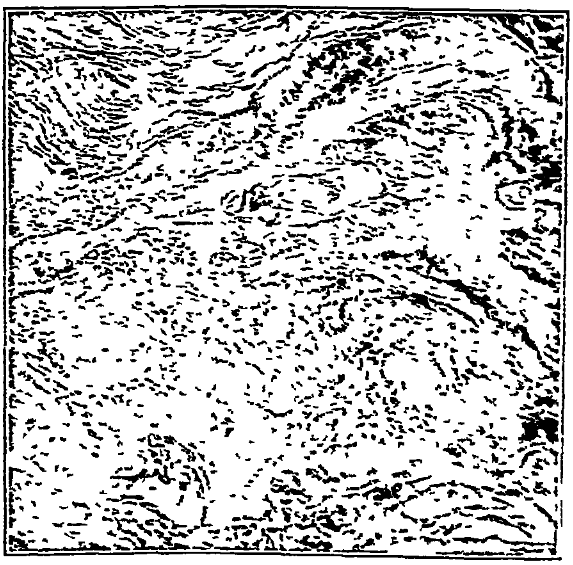


FIG. VI



PROF DR. FRANS DAELS AND DR G BACTEN · MALIGNANT TUMOURS EXPERIMENTALLY OBTAINED BY MEANS OF RADIUM

In hallux rigidus seen in the fairly acute stage in young people complete rest of the foot for several weeks should first be ordered Shoes should then be carefully fitted with the inner side of the heel thickened and a patch put on to the sole behind the head of the first metatarsal in order to lift the big toe from the ground and throw the weight on to the outer border of the foot The soles should be thick, and the uppers free from stitching in the region of the metatarso-phalangeal joint of the big toe With rest, followed by careful attention to shoes, many of the more acute cases in young people will clear up completely and leave no after effects In older people in whom hallux rigidus is already established similar attention to shoes will often relieve symptoms and avoid the need for operation

Operative Treatment.

Many operations have been tried for hallux valgus, but only two have stood the test of time These are (1) excision of the head of the metatarsal, (2) removal of the inner half of the head of the metatarsal (so-called removal of the exostosis) In most cases complete excision gives the best result By this means the deformity can be corrected, the prominent bone removed and the symptoms relieved, whatever their cause By removal of the exostosis alone, symptoms due to pressure upon it and upon the bursa overlying it are relieved, at any rate, for a considerable period, but the toe is not straightened even when the external lateral ligament of the joint is divided and thus interference with the use of the second and other toes continues

The operation of excision is a small one, but it requires to be carefully carried out It is best done by a dorsal incision, the joint being opened by a transverse incision, leaving a part of the capsule attached to the first phalanx. The head is freed from its lateral ligaments and is then carefully re-shaped with a fine osteotome and rounded off A small portion of the head on the under surface can usually be left so as to form a bearing surface upon which the patient walks The cut surface of bone is finally filed down smoothly and may be covered by rubbing with Horsley's wax Some operators cover the exposed bone with a flap of fascia or a flap taken from the deep part of the bursa The capsule is sutured over the bone before the skin is sutured

In the exostosis operation a similar exposure is necessary The projecting part of the inner side of the head is removed and the lateral ligament on the outer side of the joint divided Patients may be allowed to walk 10 to 12 days after either of these operations, after-treatment should include (1) strapping the toe in the corrected position and placing straps circularly around the heads of the metatarsals for a period of two months, and (2) massage, mobilisation of the four outer toes, and exercises for flexion of these toes and for re-education in a proper method of walking

In hallux rigidus it is necessary to analyse the exact cause of the disability Sometimes there is one local exostosis which is painful, because exposed to pressure upon it, it is then only necessary to remove this exostosis More often there is extensive overgrowth of bone around the head of the metatarsal, and extension of the joint is painful In these cases it is necessary to do a more extensive operation, usually one similar to that done for hallux valgus, the head of the bone being exposed, carefully trimmed down, and a new head formed Occasionally a simple removal of all the osteophytes around the head may be carried out and the actual cartilage covering the extremity left intact This, however, does not suffice for cases where the pain is due to extension movement of the joint The after-treatment for hallux rigidus is exactly the same as that for hallux valgus

In cases where the bursa overlying the joint has suppurated and is discharging at the time of operation, it is necessary as a rule to do a limited operation first, excising the bursa and thus getting rid of the suppuration, later on the excision operation may be carried out.

R C ELMSLIE, M S Lond, F R C S Eng,
Orthopædic Surgeon, St Bartholomew's Hospital,
Surgeon Royal National Orthopædic Hospital.

Special Articles.

A NOTE ON THE DIFFERENT KINDS OF MALIGNANT TUMOURS EXPERIMENTALLY OBTAINED BY MEANS OF RADIUM

By PROF DR FRANS DAELS
AND
DR G BACTEN,
ASSISTANT

(*From the Cancer Research Centre, Ghent*)

It is of paramount significance that we are able to produce experimentally malignant growths by means of a well-defined agent, which is easy to study in its effects It enables us better to observe the genesis of the tumours, we have their formation under more direct control, and we shall in future be able to tackle the question of vaccination in a more methodical manner with autochthonous tumours A well-known, easily analysed, cancer-producing agent would afford us a better opportunity of producing malignant growths in laboratory animals which are easier to treat than mice and rats Arising out of these considerations efforts have been made for several years at the laboratory of the Gynæcological Clinic of Ghent University to produce malignant new growths by means of radium—viz, as a mixture of radium with paraffin or talc powder and also in aqueous solutions of radium

So far we have thus been able to obtain the formation of a sarcoma in white rats and white mice and of an epithelioma in a white mouse

The first histological type obtained was a spindle celled sarcoma At the London Congress of Radiology in 1925 one of us had the opportunity of making a statement on the subject, when it appeared that it was also the first contribution to scientific literature on the undoubted experimental production of malignant new growths by means of radium

A spindle-celled sarcoma, showing irregular nuclei of very unequal size, also some giant nuclei and a few lymphocytes (Fig 1), appeared in a white rat 392 days after subcutaneous insertion of a glass tube containing 50 mg of radium powder—i e, a mixture of *10 g* talc with 1 mg radium sulphate

A spindle-celled sarcoma consisting of typical parts and also of a considerable amount of necrotic tissue with thrombosed vessels and giant nuclei (Fig 2) was found in a white rat in whom a glass tube containing a few drops of radium solution (*5 mg* crystallised radium bromide in 100 c cm distilled water) had been retained for seven months in the subcutaneous connective tissue

A sarcoma chiefly made of cells obviously partly necrosed with small nuclei and remnants of nuclei after karyorrhexis or partial karyolysis and a few larger nuclei (Fig 3) was obtained in a mouse which retained under the skin for a period of eight months a solution of 1/20,000 crystallised radium bromide in a small tube

A spindle-celled sarcoma with marked lymphocytic infiltration (Fig 4) appeared in a mouse in which a tube with 1/10,000 radium bromide solution remained in the subcutaneous connective tissue during eight months

In a third mouse, which retained in the subcutaneous tissue for a period of eight and a half months a tube with a similar (1/10,000) radium bromide solution, a typical spindle-celled sarcoma was produced without any infiltration of extraneous elements (Fig 5)

A cancroidal epithelioma (Fig 6) was obtained in a mouse in which a tube holding a few drops of a radium solution of 10 mg radium bromide in 100 c cm water was inserted under the skin and retained for 322 days

In this case metastases appeared at the level of the right axilla and the left groin.

The initial or early stages of the epitheliomatous degeneration as seen in our sections show the same epithelial hyperplasia and hypertrophy as are found in other cases.

The first stages of sarcomatous degeneration chiefly consist of degeneration of the endothelial nuclei.

References.

(1) Partly contributed to the *British Journal of Radiology*, B.I.R. Section, December, 1925: Contribution to the Experimental Provocation of Tumours by Means of Radium, by Prof. Dr. Fr. Daels, Ghent.

(2) Production de tumeurs malignes expérimentales au moyen du Radium, par Frans Daels. *Bulletin de l'Association Française pour l'Étude du Cancer* (Tome xv., No. 2, Février, 1926).

(3) Production d'Epithéliomas expérimental au moyen du Radium, par Frans Daels and G. Baeten. *Bulletin de l'Association Française pour l'Étude du Cancer* (Tome xv., No. 3, 1926).

AN INQUIRY INTO RHEUMATISM IN ELEMENTARY SCHOOL-CHILDREN.

BY RICHARD H. VERCOE, B.A. CAMB., M.R.C.S. ENG., D.P.H. OXF.,
MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER, BOROUGH OF CHELMSFORD.

THE principal object of this investigation was to estimate the relative importance of rheumatism in the parents and of dampness in the home respectively in their effect (if any) on rheumatism in the child. Other factors, such as teeth, tonsils, scarlet fever, and nutrition, have also been tabulated.

Definition of Terms.

Such indications of rheumatism as rheumatic nodules or heart disease have not been adopted as criteria. Neither is available for estimating parental rheumatism, and the findings of the former vary from 10 to 40 per cent. with different observers. The criterion adopted has been the symptoms of the child as related by the mother and corroborated by the child, if old enough. Rheumatic fever is recorded if the child has had pain with swelling or redness in any joint increased by movement, combined with fever and confinement to bed. In some cases further confirmation is forthcoming from the reported diagnosis of the doctor in attendance at the time, or from striking speedy relief of pain soon after taking the medicine (presumably salicylate), or from evidence of heart disease following such joint symptoms. Subacute rheumatic fever was recorded when the child has had swollen painful joints, with some one or other of the above symptoms, but not confined to bed. In the following figures subacute rheumatic fever has been included among the rheumatic fever cases. Definite rheumatism was recorded if the child had had definite pains on several occasions in one or more joints, or persistently in the limbs on several occasions without ever being confined to bed and without fever or joint swelling or redness. Slight rheumatism was recorded when the pains were infrequent and mild, but occurred on more than one occasion; anything less than this was put into the non-rheumatic group which was used as a control throughout.

System of Collecting Data.

At the school routine medical examination the child was first medically examined in the usual way; secondly the mother was questioned as to rheumatism in the child and in the mother and father, then as to dampness in the home; and thirdly, the history was taken of past infectious disease in the child. In this way the first interpretations of the physical signs were not prejudiced by the history of the symptoms, and any objection by the parent to inquiry into parental symptoms was mitigated by sandwiching the personal questions between the examination of the child and its history of past infections.

Only those cases were recorded as routine rheumatic and non-rheumatic cases when I had arranged at the beginning of the examination to inquire from every parent who was present at that session into the history of rheumatism and dampness. It is only in this way that any estimate could be formed of the amount of rheumatism, as the negative cases were then recorded in the same relative proportion as the positive. If a parent volunteered the information that her child had had rheumatism in the course of a session, when for pressure of time I was not inquiring into rheumatism, then such a case was put into the group of rheumatic "specials," and utilised in tables which would not be vitiated by this method of collection. A child was classed as rheumatic, both if it had actual rheumatism at the time of the examination, and also if it had had definite attacks in the past.

Dampness in the home was recorded if the bedrooms or living room were said to be really damp, not if some less used room only was involved. The sanitary inspector looked over the whole of the addresses afterwards with me at my request and the final verdict was determined by his intimate knowledge of the houses extending over 14 years, and to him I am indebted for these estimations. Some houses were hardly really damp but more damp than dry and were then recorded by us as slightly damp. Dampness of the site apart from the house was also estimated with the inspector's help, the parent here not being asked, and was recorded separately. These terms are rather loose and difficult to define, but the personal equation is uniform for the series.

Age and Sex Distribution.

The routine inquiry into rheumatism was made on a total of 702 children of both sexes, aged 5, 8, 11, 12. Of these 702 children 99 had had rheumatism in some form or another, while 603 had not had rheumatism in any form. Table I. sets out the number and relative proportions of rheumatic and non-rheumatic children in each separate age-group and sex.

TABLE I.—*Age and Sex Distribution.*

Rh. = rheumatic.

—	Aged 5			Aged 8.			Aged 11.			Aged 12.		
	Girls.	Boys.	Total.	Girls.	Boys.	Total.	Girls.	Boys.	Total.	Girls.	Boys.	Total.
Rh.	6	4	10	15	18	33	4	7	11	21	24	45
Non-rh.	52	68	120	113	162	275	16	22	38	92	78	170
%	11.5	5.9	8.3	13.3	11.1	12.0	—	—	—	22.8	31.8	26.4

It will be seen that the amount of rheumatism rises steadily with increase of age (omitting the 11-year-olds, which are small in number), and is three times as much at 12 as at 5 years old. Rheumatism actually appears a little less prevalent among the parents than among the 12-year-olds, which may be explained either by defective memory or because the infection of rheumatism has already mainly occurred by the age of 12.

Adding together the figures for all three age-groups the girls show an average percentage of 15.87, the boys of 15.93, as nearly equal as is well possible.

Subdividing the rheumatic cases into clinical categories—

	Rh. fever.	Definite rh.	Slight rh.	Total.
Girls	9	33	4	46
Boys	9	28	16	53

Of cardiac complications there were 4 cases of mitral regurgitation among 18 routine cases of rheumatic fever, 3 cases among 81 routine cases of remaining rheumatism and 3 cases among 603 routine non-rheumatic cases

It does not seem that rheumatism is necessarily any more frequent in the slummy home than in the good one amongst elementary school-children.

TABLE III.

—	Totals recorded.				Percentages.			
	Good.	Av.	Bad.	Poor.	Good.	Av.	Bad.	Poor.
5's	12	[illegible]	6	2	[illegible]	[illegible]	[illegible]	[illegible]
12's ..	47	[illegible]	77	13	[illegible]	[illegible]	[illegible]	[illegible]

Av. = Average.

Conclusion.

The four factors—parental history, dampness, teeth, tonsils—can be compared in the following table of percentages (Table IV.):—

TABLE IV.

Children.	Rheumatic parents.	Dampness.		Septic teeth.		Tonsils.	
		House.	Site.	Cases.	Per cent.	Enl.	Rem.
5's	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
12's ..	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Enl. = enlarged. Rem. = removed.

From Table IV. it can be seen at a glance not only which is the most important factor of these four, but also what is its approximate mathematical relationship to its own importance and to that of the others. Parental history seems much the most important association. Dampness of the house is next; while teeth have no association, unless it be in some rare and exceptional instance. Tonsils must be judged by the amount of sepsis that may have been involved in their removal. There appears to be no association with scarlet fever, poor home conditions, malnutrition, or sex. Age shows a very definite association, the 12-year-olds having three times as many cases of rheumatism as the 5's, probably because there has been much longer time to acquire the infection or to feel its effects.

SURGICAL TREATMENT OF CANCER OF THE BREAST.

REVISED MEMORANDUM OF DEPARTMENTAL COMMITTEE OF MINISTRY OF HEALTH.

THE fifth[1] of the series of reviews summarising the position of modern knowledge and practice in regard to different aspects of cancer, now being issued by the Departmental Committee on Cancer of the Ministry of Health, supplements information already given in the third memorandum[2] of the series by incorporating the additional and more exact data which the Committee have since obtained. On an examination of the literature of the subject, the Departmental Committee felt justified in 1924 in directing public attention to the danger of delay in obtaining early diagnosis and early surgical treatment of this form of cancer, and in insisting that patients undergoing the complete operation for cancer of the breast at an early stage, before the disease had spread from the breast, were assured of a highly favourable prognosis. These conclusions have since been put to the practical test of special follow-up inquiries by the medical officers of health of London, Manchester, Liverpool, Birmingham, Sheffield and other large cities, which have demonstrated that the results secured by complete operation at an early stage are even better, in terms of length of subsequent healthy life, than had been demonstrated by the literature. Collateral inquiries have brought to light other facts of importance in cancer of the breast, particularly its association with certain antecedent conditions and its duration under circumstances when, for one reason or another, no attempt to obtain a radical cure was practicable.

Natural Course of Untreated Cancer.

The results of the new inquiries enable the Cancer Committee to express the natural course of untreated cancer of the breast and the antecedent circumstances associated with its origin. Cancer of the breast constitutes the largest portion of cancer mortality contributed by a single organ amongst women in England and Wales, and after the age of 45 it is a very serious factor in the total mortality. In its early stages, it is emphasised once again, cancer is usually unattended by pain. For many reasons the natural duration of cancer of the breast is difficult to state with precision. Thus (1) the onset frequently cannot be fixed with any degree of accuracy; (2) amongst cases of cancer, even in women of the same age and of the same habit of body, some run an acute, others a chronic, course; and (3) the age at which the patient becomes affected appears to exert an influence upon the natural course of the disease—cancer probably takes, on the whole, a more rapid course in the young person than in the old. It should also be added that if cancer of the breast supervene during pregnancy or lactation, the course of the disease may be abnormally rapid. Although for these reasons it cannot be stated precisely, the average natural duration of a case of cancer of the breast appears to be a little over three years, as is set out more fully in Dr. M. Greenwood's report which appeared last July.[3]

Recent investigations by Dr. Janet Lane-Claypon have demonstrated statistically[4] that both chronic mastitis and a history of injury are of more common occurrence in women who subsequently develop cancer of the breast than in those remaining unaffected. It is the less fertile married women and those whose histories disclose the previous occurrence of other events and conditions such as acute transient mastitis, deformity or abnormality of the breast, and perhaps also one of excessive prolongation of suckling, who are more prone to suffer from the disease. On the other hand, certain events in the life history of women—such as the period of onset, duration, and time of cessation of menstruation, disturbances connected with that function and the [illegible] nature of [illegible], &c., some of which have been supposed to exert an influence in causation—were shown to be no more significant in women who afterwards suffered from cancer of the breast than in those who did not. This knowledge may open up a wide field of investigation whereby the development of a cancer may be traced back to its starting-point, which [illegible] by a [illegible] of some pre-existing condition of disease on which it [illegible] to some definite change in the character of growth of cells which have hitherto behaved in a normal fashion.

Diagnosis and Early Treatment.

The difficulty in identifying the nature of a mass in the breast of a woman of middle or late age is frankly admitted. When the cancer is fully developed, especially if accompanied by enlargement of lymphatic glands in the axilla, the diagnosis can readily be made with a high degree of certainty. [illegible]

---

[1] [illegible] Ministry of Health. [illegible]

[2] THE LANCET, 1924, ii., [illegible]

[3] [illegible]

[4] [illegible]

Comparison of Ætiological Factors

As the 5-year-old group only contains 10 cases of rheumatism and such an age is useless for estimating effect of teeth, tonsils, scarlet fever and even perhaps dampness, this group is discarded hereafter. On the other hand, 16 specials, at ages 8 and 12, are utilised separately below in order to increase the rheumatic group and bring its numbers nearer the non-rheumatic Thus there is now a total of 105 rheumatic children The average age of all the rheumatic children is practically the same (10 2) as that of the non-rheumatic (10 1)

Parental Rheumatism —89 routine rheumatic children have 178 parents, of whom 73 have had rheumatism—i e , 41 0 per cent ; 483 routine non-rheumatic children have 966 parents, of whom 163 have had rheumatism—i e , 15 8 per cent (If we add in 16 special rheumatic children we find there are 14 extra rheumatic parents out of 32 parents and the total percentage is then 41 4 for all the rheumatic children) Analysis of the parental rheumatism is as follows .—

Rheumatic parents of—	Rh fever	Definite rh	Slight rh	Total.
Rheumatic children	7	62	18	87
Non-rheumatic children	13	132	18	163

So that the proportion of parents who have had rheumatic fever and definite rheumatism is approximately the same in both the rheumatic and non-rheumatic groups It might be argued that the apparent influence of the parental rheumatism might really be due to the dampness of the house and vice versa in so far as the rheumatism of the parent might be caused by the dampness of the house in which the child also lives The cases where these coincide were therefore tabulated as follows :—

Rheumatic parents of—	Living in— Dry houses	Rather damp	Damp	Total.
Rheumatic children	67	6	14	87
Non-rheumatic children	132	17	14	163

So that the proportion of rheumatic parents living in dry houses is approximately equal in both groups of children, the rheumatic and non-rheumatic, and even supposing the parents had been living in these houses for as relatively long a time as the children, yet there seems nothing to suggest that this can much modify the great difference of 41 per cent and 16 per cent for rheumatic and non-rheumatic children, respectively, as regards their family history So that the rheumatic children have very nearly three times as many rheumatic parents as the non-rheumatic children

Dampness —The way in which dampness of the house was assessed has already been described Of the rheumatic children, 27 houses were damp out of 105 (i e , 25 9 per cent) Of the non-rheumatic children, 69 houses were damp out of 483 (i e , 14 3 per cent) So that the percentage of damp houses was nearly twice as great among rheumatic children as among the non-rheumatic In regard to dampness of the site on which the house was built, only the 11- and 12-year-old children were inquired into, the condition of the site being recorded quite independently of that of the house which was not taken any notice of in the following results · Of the rheumatic children, the site was damp in 14 out of 45 (i e , 31 per cent) Of the non-rheumatic children, the site was damp in 61 out of 162 (i e , 37 per cent) So that dampness of the site considered by itself seems to have no effect, that is as regards the local sites here considered, the dampness of which was never extremely pronounced

Teeth —Only the septic teeth were counted, those showing only a small spot to be filled were omitted as unlikely to have any appreciable effect in producing rheumatism Of the rheumatic children, 15 out of 105 had septic teeth (i e , 14 3 per cent) Of the non-rheumatic children, 65 out of 483 had septic teeth (i e , 13 1 per cent) The average number of septic teeth per case with septic teeth was rheumatic 2 0, non-rheumatic 2 3 So that the condition of the teeth does not appear to have any effect in producing rheumatism in the vast majority of rheumatic children of elementary school age, whatever may be its effect on adults It should be remembered that there must be a very great difference between children aged 12 (still more aged 8) and middle-aged adults with regard to the length of time the bad teeth are present, and the extent and depth of the sepsis

Tonsils —The cases where the tonsils were septic as well as enlarged were too few to form any comparison, but those which had been removed by operation would include many of these, and after some hesitation I decided not to ignore those operated upon, but to record them separately from those which were enlarged The result is tabulated as follows —

Tonsils of—	Enlarged.	Removed.
105 rheumatic children	10 = 9 5 %	12 = 11 4 %
483 non-rheumatic children	51 = 10 6 %	29 = 6 2 %

So that enlargement of the tonsils was a little less in the rheumatic than in the non-rheumatic, while cases where the tonsils had been removed, perhaps only because the adenoids were being removed, were nearly twice as frequent in those who had had rheumatism as in those who had never had rheumatism

Scarlet Fever —In 105 rheumatic cases there were 4 who had had scarlet fever (i e , 3 8 per cent) In 483 non-rheumatic cases there were 15 who had had scarlet fever (i e , 3·1 per cent) So that the association between rheumatism and scarlet fever appears to be negligible, so far as concerns the small number of cases in this series

Comparison of Physique and Home Conditions

The average height and weight of girls and boys, aged 8 and 12, is compared in Table II and affords some indication whether *malnutrition* is associated with rheumatism or not It will be noticed that the number of rheumatic children is a little larger than in the first table by reason of inclusion of some specials (for rheumatism) with the original routines

TABLE II —*Physique*

—	Girls				Boys				Combined sexes		
	No	Age	Height	Weight	No	Age.	Height	Weight	Age	Height	Weight
			in	lb			in	lb		in	lb
Rh	26	$12^{3}/_{12}$	56 8	77 7	25	$12^{3}/_{12}$	55 4	74 2	$12^{3}/_{12}$	56 1	75 9
Non-rh	92	$12^{4}/_{12}$	56 2	74 0	78	$12^{3}/_{12}$	55 6	76 6	$12^{3}/_{12}$	55 9	75 3
Rh	19	$8^{4}/_{12}$	47 6	50 2	20	$8^{4}/_{12}$	45 6	52 8	$8^{5}/_{1}$	46 3	51 5
Non-rh	113	$8^{3}/_{12}$	46 7	51 7	148	$8^{4}/_{12}$	48 9	54 6	$8^{4}/_{12}$	47 8	53 1

As the ages of the groups of children are almost exactly equal to a month in all the groups compared there is no correction necessary for the factor of age The average height and weight of the 12-year-olds, combining the average in girls and boys, appears practically equal in both the rheumatic and non-rheumatic groups, but is very slightly less in the non-rheumatic In the 8-year-olds, on the other hand, the rheumatic group is distinctly the shorter and lighter by 1½ in and 1½ lb However, in both the 8-year and the 12-year group the difference between rheumatic and non-rheumatic appears too small to be of much significance, and in both cases the former are fully up to the average height and weight for the age Nutrition, therefore, does not seem definitely to be a factor influencing the incidence of rheumatism

The character of *home conditions*—good, average, fair, poor—was also investigated The school nurse briefly recorded her opinion opposite each name and address which she knew, as far as her intimate knowledge of the families permits, which is very considerable and extends over several years The result was then tabulated (Table III)

COOMBE HOSPITAL CENTENARY.

CONGRESS AT DUBLIN.

We published last week (The Lancet, Sept. 18th, p. 614) a short account of the Coombe Hospital, which celebrated its centenary by a Congress at Dublin from Sept. 14th to 17th. Amongst gynæcologists who attended from various parts of the world were Prof. J. P. Faure and Prof. A. Couvelaire, of Paris and many others whose names appear below.

After a brief presidential address from Sir William Smyly (Dublin), the proceedings opened with a paper by Prof. Essen Möller (Lund) on the

Teaching of Obstetrics.

He described the teaching of obstetrics in Swedish universities, where the medical course, he said, was from eight to nine years. Of this time the student spent four months in intensive study of obstetrics and gynæcology as an intern, the obstetric and gynæcological hospital being in each case under the control of the university professor.

Prof. Munro Kerr (Glasgow) pleaded for a simplification of obstetric teaching, and urged that three months training was adequate to make the student a safe obstetrician. He also emphasised the importance of antenatal work.

Prof. J. B. de Lee (Chicago) describing the course of study in Chicago, stated that two of the student's last four years were given to obstetrics, of which (apparently) only two or three weeks were given to clinical work. The student would see from 8 to 20 normal deliveries and a few forceps cases.

Mr J. S Fairbairn (London) said that at St. Thomas's Hospital six months were given to obstetrics and pædiatrics, two months being spent in residence. The student saw the patients in the antenatal clinic, in the indoor department, and in the postnatal clinic

Prof. Fletcher Shaw (Manchester) said that in Manchester a year was spent in theoretical teaching of obstetrics, and five months in clinical work, of which one month was in hospital. No attempt should be made to teach students to become operating obstetricians.

Mr Comyns Berkeley (London) described at length the difficulties experienced by obstetric teachers in urging the General Medical Council to maintain an adequate standard in the teaching of midwifery. In his opinion the number of obstetricians on the Council should be increased

Mr Eardley Holland (London) read a paper on the

Unnecessary Induction of Labour.

He believed that induction of labour for contracted pelvis and for so-called prolongation of pregnancy was being greatly overdone. An excellent criterion of the necessity or otherwise of induction in any given case of contracted pelvis was the length of the second stage of labour. In a series of 123 cases at the City of London Maternity Hospital the length of this stage had been less than one hour—in many cases only a few minutes—in 63 per cent., and between one and two hours in 22 per cent. of the remainder. In these cases clearly the induction had not been necessary and the patients could have delivered themselves spontaneously at full term. It was well known that spontaneous delivery occurred in about 80 per cent of cases of moderate pelvic contraction As regards so-called prolongation of pregnancy, it had been the custom of the Hospital to induce labour after the prescribed term of 280 days had been exceeded by a week or ten days An analysis of the records of 82 cases of this nature had demonstrated that induction had been unnecessary in nearly all Calculation from the date of the last menstrual flow gave an error of roughly three weeks

Subjects under Discussion

Other papers read before the Congress included one by Prof Paul Werner (Vienna) in which he gave his results in the treatment of pre-climacteric and climacteric bleedings by irradiation. A paper by Prof. Munro Kerr, stating the case for the lower uterine segment Cæsarean operation gave rise to an interesting discussion.

Prof. A. Donald (Manchester) read a note dealing with the history of antisepsis and asepsis in midwifery. He regarded corrosive sublimate as the most useful antiseptic for disinfection of the hands and external genitals Gloves, he thought, gave a false sense of security, and he urged the simplification of the antiseptic ritual in the homes of the poor, concluding with a cogent criticism of the theory of endogenous infection.

Prof. de Lee read a somewhat provocative paper entitled the Pathogenicity of Parturition, in support of his thesis "that the function of child-bearing, while it may have been intended by Nature at the beginning to be a normal, harmless process, has in the modern, civilised woman acquired qualities which stamp it as pathologic."

Prof. Louise McIlroy (London) discussed Some Problems of Diagnosis and Prognosis in Antenatal Work, with particular reference to the association of clinical and X ray examination of the pregnant woman.

Prof H. Hinselmann (Altona), opening a discussion on eclampsia argued that clinically eclampsia was due to a profoundly altered peripheral circulation of the nature of angiospasm. The brain, he said, was the last organ to be affected, while mortality was due to the condition of the heart.—Dr. J. Hendry stated that of a recent series of 23 fatal cases of eclampsia the cause of death in 11 was pulmonary œdema. In a series of 100 cases recently treated by conservative methods in the Royal Maternity Hospital, Glasgow, the number of deaths was 10—Dr. Gibbon Fitz-Gibbon (Dublin) laid stress on the value of early prenatal care in the prevention of eclampsia

The closing paper of the Congress was an essay by Prof. Beckwith Whitehouse (Birmingham) entitled a Contribution to the Pathology and Causation of Dysmenorrhœa. He distinguished what he called "aconceptional dysmenorrhœa" from menorrhagia, and believed that the former was always associated with the expulsion of tissues from the uterine cavity, while the degree of pain was dependent on the degree of denudation of the endometrium. The tissue expelled consisted usually of hyperplastic decidua the hyperplasia probably being due to excessive lutein activity.

Social Functions of Congress.

The opening ceremony of the celebration of the Hospital's centenary was held on Sept 14th when there was a reception by the guardians and directors of the Hospital at the Royal College of Surgeons The various British and foreign guests were present, together with representatives of the medical and other professions in Ireland. A welcome to the guests was given by the President of the Royal College of Surgeons and by the Chairman of the Board of Governors of the Coombe Hospital

On the following evening a dinner to the visitors and to the friends of the Hospital was given in the Hall of the Royal College of Surgeons by Alderman Hubbard Clark, Chairman of the Board of Governors of the Hospital, and Mrs Clark. About 160 people were present The toast of the Coombe Hospital was proposed by Prof Munro Kerr and a reply was given by Dr Louis Cassidy, the Master Among the other speakers were Mr A. Fullerton (President of the Royal College of Surgeons in Ireland), Rev. T. A. Finlay, S J., Mr. W. Doolin, Mr Comyns Berkeley, Prof Faure, and Prof. Werner.

On the evening of Sept 16th a special performance was given at the Abbey Theatre of Mr Sean O Casey's play "Juno and the Paycock. Mr W B Yeats one of the directors of the theatre appeared before the curtain after the first act and welcomed the guests on behalf of the directors and players of the Abbey of cancer cells Examination of microscopical sections during the course of operation has not proved satisfactory since masses which are difficult to identify with the naked eye are very frequently those which display doubtful appearances when examined by the rapid method of making microscopical sections, used in the course of an operation The method which combines the greatest reliability with the least risk is that of incision into the growth at the time of operation, the surgeon being guided as to subsequent procedure by the naked-eye appearance of the incised tumour and employing the fullest precautions, change of gloves, instruments, &c , to avoid transference of cancer cells to the wound In early cases, the report concludes, the microscope is of little value in diagnosis prior to completion of the operation, it is of value in confirming the clinical diagnosis made by the surgeon prior to and during operation

Early surgical operation, the memorandum again states, affords the one chance for a patient suffering from cancer of the breast Cases of cancer treated only with internal medicines, or external applications, or by dietetic methods are not being effectually treated This does not mean that such agents as radium and X rays cannot be usefully employed as aids to surgery, or in cases in which surgical operation is impossible Decisions on the treatment depend on the primary question of the need for operation from the standpoint of the surgeon and of the patient The surgeon has to consider (*a*) whether the condition is actually cancerous or threatens to become so, (*b*) whether he can remove the disease completely without undue risk to the patient, and (*c*) whether the patient will be freed from the disease by the operation, or, alternatively, what will be the relief and the prolongation of life afforded by it The patient's standpoint is different She views the entire operation (including the anæsthetic) with repugnance and as a proceeding which, even if completely successful in a surgical sense, is an evil of no little magnitude Hence it comes about that with all the improvement in surgical technique there has been no corresponding increase in the proportion of cases which reach the surgeon at a stage of the disease when such treatment offers the greatest advantage Investigation has shown that on the average patients do not seek medical advice until eight or ten months after the growth was first noticed

As to varieties of operation, though full weight must be given to general improvements in surgical technique, it is regarded as indubitable that the better results obtained at the present time by operation in cancer of the breast depend upon the completeness with which the outlying portions of the cancer are removed No means exist for recognising at the time of operation the position of these outlying foci, and hence arises the necessity for the "complete" operation The extent of the operation has increased with fuller knowledge of the natural course of the disease, so that anything but a wide operation involving skin and deep fascia with complete removal of the breast, pectoral muscles, and axillary contents is almost universally recognised to be relatively, if not entirely, useless This complete operation does not add in any significant degree to the risk of the operation itself or to subsequent disability

Results of Operation

The memorandum as revised still regards as the most important point to determine the measure of success of surgical treatment The *average* duration of life in untreated patients (little more than three years) has been obtained by noting the duration of life in a large number of women whose history is known from the time when the tumour was first noticed until death No precisely comparable figure for patients who have been operated upon can be given Some patients—and under favourable conditions a large number of them—live for many years, and it is difficult for the surgeon to keep in touch with them for 10–15 or more years after operation A majority of surgeons have been content themselves with reporting percentages of survivals three years from operation The most recent investigation [5] of patients suffering from undoubted cancer of the breast, confirmed by microscopical examination, shows that, with the modern complete operation, 52 per cent are alive and well after a three-years' interval, 39 per cent after five years, and 30 per cent after ten years But some of these patients were already in a condition that the surgeon could have little confidence that the disease would not recur When the results were examined according to the *stage* the disease had reached at the time of operation, it was found that of patients subjected to early operation—i e, before the disease had extended beyond the breast itself—94 per cent were alive and well at the end of three years, 91 per cent at the end of five years, and 87 per cent at the end of ten years Figures for patients operated upon at later stages vary with the degree of advance of the disease and range from 31 to 38 per cent at three years, 15 to 20 per cent at five years, and 5 to 6 per cent at ten years Put in another way, it may be said that, on the average, women affected by cancer of the breast have, in the absence of effective treatment, roughly one-sixth of the normal duration of life to look forward to, those subjected to the complete operation during the comparatively late stage of the disease at which the average patient applies for treatment under present unsatisfactory conditions have about one-third of the normal duration to expect, while those so operated upon at an early stage may anticipate approximately two-thirds of the normal after-life time

Practical Applications

About 1 in 4 of all patients undergoing operation in large hospitals does so at a stage early enough to secure a good chance of cure In the case of the other three, application for treatment is delayed, largely through ignorance or fear, to such a late stage of the disease that the chances of complete relief are very considerably diminished The proportion of the total number of sufferers which undergoes operation in large hospitals is not precisely known, though it is probably in the region of 50 per cent What is the fate of the remaining 50 per cent ? Some undergo operation elsewhere—e g, in their own homes, nursing homes, cottage hospitals, &c —others attend hospital but at a stage too late to admit of any attempt at a radical cure, and it is probable that a third fraction either fall into the hands of unqualified practitioners of one kind or another, or come under the care of registered medical men only at the latest stage It may safely be stated that not more than 1 in 5 or 6 of all victims of this disease obtains the best treatment at her command

It is highly desirable that every possible means should be taken to try to induce all middle-aged women who are conscious of any abnormal condition in the breast to seek medical advice without delay The memorandum proposes that this should be attempted by dissemination of information through all suitable channels, such as leaflets, "talks," advice by local cancer committees, doctors, health visitors, and social workers, and in other ways Educative advice directed towards securing effective treatment of those earlier conditions which have been shown commonly to precede cancer and to the avoidance so far as possible of injury, especially habitual injury, would also be of value

Intensive efforts on a wide scale are now being devoted to the search for the cause or causes of malignant disease, but the memorandum sounds a note of caution, that the discovery of a cause may not necessarily indicate a means of prevention, and even though it did, preventive measures could not be expected to secure early results in cancer, since the bulk of the evidence indicates that the disease is one of slow development due to effective or predisposing causes operating over a prolonged period

---

[5] Ministry of Health Public Health and Medical Subjects, No 34 A Report on the Late Results of Operation for Cancer of the Breast (Leeds) H M. Stationery Office 6d

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Responsibility for Venereal Infection

A CASE recently heard before the courts raised some interesting legal questions. The defendant was an officer in the army: in 1915 he made the acquaintance of the plaintiff who was then a girl of 15, employed as bookkeeper by a large private firm, and sexual relations began between them, which went on at intervals for many years, the officer always promising marriage at the end of the war. Whilst on service he contracted syphilis and on his return infected his fiancée, but their relations continued until two years ago, when the man refused marriage. At this the girl took legal action, demanding compensation for the damage done to her health and for the loss she had suffered in not being able to attend to her regular work: but the county court refused countenance to her claims on the ground that every love-relation arises from the common resolution of two persons, and therefore any damage arising from it must be borne in common. The plaintiff then appealed to the High Court, which has annulled the decision and has ordered an inquiry into the moral life of the girl before she got to know the defendant and has asked for a certificate stating that the captain has in fact suffered from venereal disease. The view of the High Court is that if the officer was responsible for the infection he should pay compensation not only for the cost of medical treatment, but also for any other pecuniary damage or loss of profit. The sentence of the county court, it is suggested, would actually reward the man for his immoral conduct.

An International University at Davos

Dr Eugen Kollarits, lecturer in the University of Budapest, who is at present living in Switzerland, has put forward an interesting plan for an international university at Davos. His idea is that the professorial staff, as well as the students, should be recruited from the citizens of all civilised nations, and this, he hopes, would do something to bridge the international gulfs left by the war. At the high altitude of Davos students in the early stage of pulmonary tuberculosis could go on with their work under favourable conditions and in healthy surroundings, far away from the dusty air of the big cities where universities are generally situated. There would be admirable facilities for sport, and Davos, which has a resident population of 10,000, seems to be an excellent place at which to set up such a university. Dr Kollarits suggests that the League of Nations should undertake its foundation; the 30 or more countries which are members of the League could contribute to the cost without any great effort.

Inoculation against Measles.

The Mayor of Budapest has issued an order dealing with the collection of serum from patients convalescent from measles. The order requires that hospitals which accommodate such patients, and also private practitioners, shall take blood from children over 4 years of age who show no signs of tubercle or syphilis. The blood is to be collected between the seventh and ninth days after the fever has subsided, and will at once be sent to the city's public laboratories where every specimen will be tested by the Wassermann reaction regardless of its origin. Half the serum thus collected will be placed at the disposal of practitioners for the prophylactic inoculation of families in which a case of measles has occurred. At present so little blood is available that the laboratories can only give small lots of tested serum to those doctors who have themselves contributed to the stock. Before taking blood or giving preventive inoculations the consent of the children's parents has to be obtained.

Prophylaxis and Treatment of Scarlet Fever.

Prof. Kornél Preisich [illegible] an address to [illegible] Medical Society [illegible] that, in his [illegible] primary negative Dick test does not mean unconditional immunity; he has seen the occurrence of scarlet fever shortly after a primary negative Dick test, and also in a child who had been immunised but was not quite Dick-negative. In many cases, he points out, it is exceedingly difficult to make the reaction negative, and it is more difficult to do this with vaccine than with toxin. Both vaccine and toxin often give rise to fever, passing away within 24 hours, and not infrequently produce a scarlatiniform erythema. He has also seen cases in which children have fallen ill with scarlet fever on the first day of the test, which seems to corroborate the view that the administration of toxin makes the disease come out whilst it is still in the stage of incubation. Whether in these cases it would have developed without this provocation remains an open question. Before making an inoculation the subject should always be thoroughly examined to make sure that there is no rise of temperature, or redness or discomfort of the throat. So far as therapeutics are concerned, Prof. Preisich considers that antitoxic serum, prepared with specific streptococci, is very efficacious. In cases which are serious at the outset, the administration of 10 c.cm. of serum causes a remarkable change in the condition: in 24–48 hours the rashes fade away and the fever is reduced, and does not reappear. Its prompt action is reminiscent of the effects of serum in diphtheria, and the treatment appears to influence desquamation and obviate complications. The only disadvantages are that the site of inoculation is painful for one or two days and the possibility of serum sickness. Prof Preisich is in hopes that the wider use of this serum will rob scarlet fever of its terrors and considerably reduce the mortality: but the price is at present so high that its general use is impossible.

PARIS.

(FROM OUR OWN CORRESPONDENTS.)

French Mortality in 1925.

THE statistician of the National Committee for Defence against Tuberculosis states that the death-rate in France has risen during 1925. Infantile mortality has been slightly greater: infectious diseases in Paris show some recrudescence; cancer is steadily increasing, and the figures show that malignant disease is tending to become as fatal to men as to women. Cerebral hæmorrhage and softening have become considerably commoner, and so have organic disease of the heart and cirrhosis of the liver. On the other hand, tuberculosis and affections of the respiratory tract show a certain decrease.

Malaria and Tuberculosis.

Marcou-Mutzner, of Ajaccio, reports that antagonism between malaria and tuberculosis is common in Corsica. When the diseases occur together the tuberculosis is apt to assume a protracted, sclerotic form, and there seems to be no reason why use should not be made of this fact in therapeutics. Cases of tuberculosis could be inoculated with *Plasmodium vivax*, when improvement might result from activation or shock therapy desensitising the tissues to the tubercle bacillus.

The Designation of Dentists.

French dentists demand to be called doctors in dental surgery as soon as they have completed the regular undergraduate work at the French universities, but physicians insist that no specialist shall receive official designation until he has finished the general courses in medicine required of all graduates and think that the present title of surgeon-dentist should be maintained. The question is being considered by the Ministry of Public Instruction.

Removal of Adenoids.

Prof. [illegible] of [illegible] employs a special [illegible] for removing adenoids in [illegible] of [illegible] 5 years old. The pharynx and [illegible] of the soft palate are [illegible]

Theatre. He said that the play had been chosen for performance that week as the directors thought that when guests had come to honour the work the Coombe Hospital was doing among the poor of Dublin, it was suitable to show them a play dealing with life in the Dublin tenements.

On the afternoon of Sept. 15th the guests paid a visit to the Coombe Hospital, and on the following day were present at a polo match in the Phœnix Park, where the Master of the Hospital captained one team. On Sept. 17th the Governors of the Hospital entertained some 300 guests to a garden party at the gardens of the Royal Zoological Society.

The Master of the Hospital and the Chairman, with their helpers, are to be congratulated on the success of the entire series of celebrations. Favoured with good weather all the guests appeared to enjoy their visit and spent a happy few days.

MEDICINE AND THE LAW.

Drug Addict Obtaining Prescriptions from Several Doctors Concurrently.

A FURTHER stage was reached at the Westminster police-court on Sept. 11th in the prosecution under the new Dangerous Drugs Regulations (promulgated last July) which attempt to restrain drug addicts from obtaining simultaneous prescriptions from several doctors. As previously stated, it is now an offence to obtain heroin and other dangerous compounds from more than one medical practitioner without disclosing the fact of the concurrent treatment by other doctors. The charge against the accused, an Eurasian, aged 44, was that he visited various doctors to obtain morphine compounds for hypodermic injection. The prosecution alleged that he had given the name of Lieut.-Colonel Radley, and also that of Colonel Rivett-Carnac, though he was in no way connected with the Rivett-Carnac family. At the previous hearing the magistrate adjourned the case in order to have the evidence of the medical practitioners. On the second stage of the case several doctors gave evidence. The medical evidence was not very fully recorded in the daily press, but the *Times* report summarises the testimony of a specialist who stated that he treated the defendant partly as a drug addict and partly for an inferior degree of asthma. The defendant alleged that he had been gassed during the war, and had been treated with different morphine preparations in Paris in such a manner that he came under the sway of the drug, so that a continued supply of it was the only thing which would alleviate his condition. The magistrate asked one of the medical witnesses what was the best thing to be done with the defendant, but the only suggestion made in reply was that the defendant would be better suited to a drier climate. The magistrate (Mr. Gill) was evidently puzzled to know how best to deal with the case, and granted a further remand to see if arrangements could be made for the defendant's departure from this country. Mr. Gill, it appears, observed that the offence was not as serious as a case of drug trafficking, and he indicated that he was ready to take a lenient course if it could be arranged that the defendant should go right away. While, however, it may be a convenient solution of this new problem to send an Eurasian back to the East, it remains to be seen how our magistrates will treat drug addicts who are natives of this country and who violate the new Regulations. Probably punishment in such cases will be similarly mitigated if defendants will undertake to enter some suitable institution or otherwise submit themselves to treatment under proper supervision. Parliament is inclined to treat addiction to drugs in the same way as addiction to alcohol; for example, a wife can now obtain a separation from a husband who is a habitual drug-taker in the same manner as if he were a habitual drunkard. But it is not certain that the public or the police-court magistrates are yet ready to accept drug-taking and drunkenness as involving identical penal consequences.

Sale of Milk. Deficiency of Milk Fat.

In a recent prosecution by the Norfolk County Council it was alleged that a farmer had sold milk which had the unusually heavy deficiency of 42 per cent. in milk fat. The magistrates dismissed the case upon what they described as a point of law, but it is not unreasonable to suggest that, if the law tolerates so large a deficiency, the law must be altered. It was pointed out by the prosecution that the Regulations made under the Food and Drugs Acts provide that, where a sample of milk contains less than 3 per cent. of milk fat, the law presumes that the milk is not genuine by reason of the abstraction of milk fat or the addition of water. The sample in this particular case contained as little as 1.74 per cent. Therefore the presumption arose that the milk was not genuine, the sample containing little more than half of the minimum amount of milk fat prescribed by the Sale of Milk Regulations. Thus the onus lay upon the farmer of proving that his milk was genuine. It appeared that, after the sample had been purchased, a statement was made to the inspector who had purchased it. This statement, which was confirmed on oath by the defendant before the magistrates, was to the effect that two cows in milk had calves, and that the method of milking was a partial milking for milk-selling purposes, the remaining milk being left for the calves. The prosecution alleged that this meant that the fore part of the milk went to the milk purchasers, while the rest, which was the richer in fat, was left for the benefit of the calves. The defendant stated that he had not been aware until that day that the fore part of milk differed in fat value from the remainder. He met the adverse presumption of non-genuineness by calling witnesses whose evidence traced the milk from the time it left the cows to the moment when the inspector obtained his sample. Under the legal decision in Grigg *v.* Smith, a case heard in the Divisional Court in 1917, milk may be proved genuine, even though there has been an exceptional course of milking, if it is proved that nothing is added or abstracted after the milk is taken from the cow. The decision in Grigg *v.* Smith does not countenance the view that it is an offence for a farmer to milk his cows in such a manner as to leave part of the milk for the calves. This is the point to which fresh legislation, either in the form of statute or of regulations, should be directed. The farmer in the recent case was able to rebut the presumption of non-genuineness by proving the history of the milk sample and showing that no fat had been abstracted and no water added. The chairman of the bench of magistrates, while dismissing the prosecution against the farmer (against whom no previous complaint had been made), observed that it would have been better if the farmer, seeing that his cows were feeding calves, had decided not to sell any milk from them. This observation might well form the foundation of a new legislative standard. The object of our Food and Drugs Acts, Milk and Dairies Acts and their accompanying regulations is to secure that what is sold as milk shall be good milk. The standard minimum of 3 per cent. of milk fat value is, like any other fixed percentage, an arbitrary figure which may require some marginal elasticity in administration, since, though Parliament and the public rightly insist upon protecting the interests of the consumer and particularly the interests of children and invalids, the farmer has a right to fair play. But it is disquieting to learn that a sample of milk containing a milk fat percentage of only 1.74 can find its way to the market without penalty. The *Eastern Daily Press*, which published an excellent account of the recent prosecution, described the line of defence as novel and successful. It is not actually novel, and it may be necessary for the legislature to provide that it shall not in future be successful.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the health statistics of the cities of Edinburgh and Newcastle-upon-Tyne for the year 1925:—

Name of city	Estimated mid-year population (R.G.).	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.	
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Heart disease.	Infant mortality.	Maternal mortality from childbirth.
Edinburgh ..	421,955	18·6	14·5	1·14	1·50	2·1	1·8	95	5·1
Newcastle-upon-Tyne ..	286,270	21·6	13·5	1·35	1·21	2·5	1·4	88	2·9

Edinburgh.

Dr. William Robertson reports a widespread prevalence of scarlet fever during the year. There were 2351 notifications with 62 deaths, and the disease was most prevalent during the last quarter of the year. Usually about 90 per cent. of the cases are removed to hospital, but during 1925 domiciliary treatment was encouraged when the circumstances were suitable and only 82 per cent. were removed to hospital. Following the Leith experience the stay in hospital has been reduced to four or five weeks. A puzzling outbreak occurred at a large boarding school for boys and appeared to be due to a "carrier" member of the staff, from whose fauces the *Streptococcus hæmolyticus* was recovered. The scheme for the immunisation of school-children against diphtheria has been continued without a single untoward result and has been extended to children of the pre-school age. The supply of insulin by the health department was begun on May 6th, 1924. About 100 phials are now given out every month, each containing 100 units. The total cost to the department after allowing for repayments has been about £100. Good results are reported from the use of mercury-vapour lamps for convalescents from measles and whooping-cough at the City Fever Hospital, and a mercury-vapour lamp and four open arc lamps have been installed at the surgical tuberculosis annexe, also with apparent success. Efforts to secure greater cleanliness of milk are being continued following on the milk competitions of the last two years. An illustration given in the report of 12 discs of cloth, through each of which 1 pint of milk has been filtered, shows an extraordinary variation in the dirt content. The City Council have decided to establish a tubercle-free herd at their farm for the supply of milk to the city hospitals. In order to get early information of cases of food poisoning the City Council has decided to pay a fee of 2*s.* 6*d.* to any medical practitioner for the immediate notification of such cases.

Dr. Robertson expresses his regret that with a view to the prevention of tuberculosis the slum problem was not taken in hand before any other housing scheme. Within the past three years two clearance schemes have been undertaken by the municipality, one in the Cowgate and Grass Market and the other in Leith. The condemned houses have had to remain in occupation owing to the slow progress made in providing alternative houses for the slum occupiers. Many of the slum dwellers show reluctance to leave their haunts and remove to a greater distance from their work. Alternative housing is under consideration for the third and largest improvement scheme in connexion with the S. Leonard's area. "The economic situation," says Dr. Robertson, "places a damper on housing ideals." Well-considered schemes of house-ownership make a strong appeal, and much more could be done to relieve the housing situation under the Small Dwellings Acquisition Act if local authorities would embark upon publicity campaigns. At present few people understand how to proceed. Dr. Robertson also favours the establishment of a decent municipal hostel where unmarried working men could be boarded for 25s. per week. The new two-storeyed houses with their provision of conveniences and surrounding space and opportunities at hand for recreation must be of extraordinary benefit to the younger generation when compared with the lofty tenements with their gloomy, ill-ventilated stairs, their facilities for the spread of infectious disease, and their aggregation of dwellings without adequate conveniences. Antenatal clinics are held at nine centres and the mothers of 52 per cent. of the infants born received some antenatal supervision during 1925. No damage to the eye was recorded from ophthalmia neonatorum.

Dr. John Guy, the tuberculosis officer, reports that the death-rate from pulmonary tuberculosis has remained practically stationary during the last five years, and he thinks this is due to the unsatisfactory state of industry. Dr. W. T. Benson states that the systematic immunisation of the nursing staff at the fever hospital against diphtheria, which was initiated in 1922, is being continued with very satisfactory results. Of the five nurses who contracted diphtheria during the year one had been proved susceptible but had not yet been immunised, three developed the disease within six weeks of the completion of the immunising course, and the fifth had a very mild attack one year after immunisation. All five recovered. Owing to the fact that immunity may take several months to develop, Dr. Benson thinks it would be better for the nurses to be immunised six months before taking up their hospital duties. The number of nurses who contracted scarlet fever was 15, and an attempt is being made to immunise those who are shown to be susceptible by the Dick test. Dr. W. T. Gardiner, the otologist, has been able to reduce the stay in hospital of both scarlet and diphtheria patients. During the year he performed 28 mastoid operations and did 125 removals of tonsils and adenoids.

Dr. David Lees shows that the attendance at the V.D. clinics continues to improve, thus the percentage of those who completed their treatment until considered to be cured during the last six years was as follows:—

1920	60·0 per cent.	1923	84·4 per cent.
1921	74·0	1924	88·1 ,,
1922	81·5	1925	88·7 ,,

The attempt to deal with the defaulters by confidential correspondence has not proved very successful, but in dealing with female defaulters the follow-up work of the child welfare department has been valuable. Excluding cases treated at the Royal Maternity Hospital about 16 per cent. of the patients require in-patient treatment, and more bed accommodation is needed, especially for married women and children. The attendances per new patient numbered 26. This may be compared with the figure of 30 for London, but the London report for 1925 gave no figure for the percentage of default, which in Edinburgh reached the low level of 11·8 during 1925. An appreciable amount of the Edinburgh default consists of seamen who must rejoin their ships. Patients are coming for treatment at an earlier stage of the disease. Gonorrhœa patients do not seek treatment as readily as syphilitic, perhaps because syphilis is regarded more seriously and the treatment of syphilis is more reliable and efficient. An increasing number of cases of vulvo-vaginitis was noted in 1925 and emphasises the need for personal cleanliness by patients with regard to towels, sponges, &c. Dr. Lees says with our present knowledge ophthalmia neonatorum can be stamped out.

The daily sale of "designated" milks in the city amounts to 218 gallons of "certified," 72 gallons of mounted on a 10 c cm syringe containing a 1 in 200 solution of novocaine, is then passed through the anæsthetised soft palate and the adenoid growth is infiltrated with the novocaine solution, which is injected at five points, effectively covering the adenoid area Five minutes after the local infiltration the adenoid may be painlessly removed by curettage

Homes for Mothers

With the object of reducing infantile mortality a group of Deputies has laid before the Chamber a Bill obliging departments to establish homes for mothers It is recommended that one or more of these institutions should be set up in every department as an annexe to the lying-in hospitals They are intended for all women partly or wholly breast-feeding their new-born babies, and also for those who wish to keep their confinement a secret Pregnant women whose condition requires special care would be admitted under exceptional circumstances, and it is intended that mothers should remain in the homes for as long as their own or their babies' health may make it desirable They would receive a daily allowance, and the fact that they were in hospital would be no obstacle to their receiving payments to which the law entitled them

Death of Two Physicians

The death is announced of Prof C Oddo, well known for his work in pathology and clinical medicine at the University of Marseilles, and author of works on spinal and medullar affections, emergency medicine, and occupational accidents

Dr Georges Thibierge, who died on August 24th, was one of the most brilliant French dermatologists He edited the *Annales de Dermatologie*, and was President of the French Society of Dermatology, and Secretary of the Society of Legal Medicine

Congresses and Post-graduate Courses

The Thirteenth International Congress of Hygiene will be held from Oct 19th to 21st at Paris under the presidency of Mr Henri Martel Applications for membership will be received by Mr Bossus, 142, Boulevard de Montparnasse, Paris, 14e

The Thirty-fifth French Surgical Congress will be held at the Faculté de Médecine, Paris, from Oct 4th to 9th Jean Louis Faure will preside

Dr. Gunsett, director of the cancer centre at Strasbourg, has organised a course dealing with the practical details of diagnosis and treatment of cancer It will last from Oct 18th to Nov 6th, the number of students is limited and there are few vacancies left Particulars from Dr Gunsett, Hôpital Civil, Strasbourg

A course in radiology will be given by Béclère from Oct 18th to Nov 13th at the Curie Foundation with supplementary practical work at the Hôpital St Antoine Applications to Dr Solomon at the hospital

Journées Médicales are to be held at Montpellier from Nov. 4th to 6th Information may be had from Dr. Desfour, 8 rue Emile Zola, Montpellier, Hérault.

A course in cardiology will be given from Oct 11th to 27th by Dr Laubry and his associates Application to Mr D Routier, Hôpital Broussais, 96 rue Didot, Paris

A Sanatorium at Havre

A new institution has been opened at Havre for those damaged by asphyxiating gases during the war It will also take cases of tuberculosis, for which there are only some 15,000 beds available in France to serve 680,000 sufferers The new sanatorium has been erected by private subscription and it is hoped that similar efforts may be made in other places

A new hæmocytometer, devised by Dr Bécart, contains cell-count pipettes in which dilution is made easier and more exact by means of a supplementary air chamber, pierced by a hole The orifice is closed by the finger during aspiration, ascent of the column of liquid being immediately arrested by removing the finger from the hole The diluting chamber ends in a capillary lumen, which adds still further to ease and exactness

The Paris Court of Appeals has issued a decision making it clearly illegal to publish and sell notes of lectures delivered by professors attached to medical or other faculties This is a sequel to an action taken by several professors against a person who offered notes in medicine and pharmacology for sale to students A fine was inflicted

Dr Pagniez has reported to the Société Médicale des Hôpitaux de Paris a colour reaction given by the urine in cases of spirochætal jaundice An emerald-green colour develops when the urine is treated, as in testing for albumin, by heat and acetic acid, and this reaction is said to be specific

Prof Cunéo, especially known for his work in bone surgery, has been sent by the French Government to Colombia where he will give addresses on surgery

The price of bread is not always rising in France, and in Paris the official price is now 2 55 francs per kilo The proportion of foreign wheat which may be mixed with French wheat, for making flour, is prescribed at 40 per cent Following the slight reduction of the official price bakers at St Malo have declared a strike A grain census is to be taken and grain stocks registered

IRELAND

(FROM OUR OWN CORRESPONDENTS)

Public Hospitals and Medical Fees

Dr A D Clinch, one of the medical inspectors of the Department of Local Government and Public Health, held a severe inquiry last week at Scariff District Hospital, co Clare, into complaints which had been made that the medical officer had demanded fees from patients treated in the hospital It appears that it is the custom for well-to-do patients to pay the full cost of their maintenance in the hospital, and the medical officer holds that in such cases he is entitled to charge a reasonable fee for his services In this view he is supported by the medical profession of the county On the other hand, certain members of the county board of health maintain that the medical officer is paid a salary to cover attendance on all patients admitted to the hospital, and that no fee should be charged for treatment given in a public institution Two patients gave evidence that they were willing to pay the doctor a fee, but that they thought the fee he demanded was excessive—the principle of payment being thus conceded They were cross-examined as to their means, while the medical officer denied having refused treatment to any patient on the ground of a fee, or the right fee, not being forthcoming The inspector gave it as his personal opinion that a doctor could properly accept a fee from a patient who was liable for full maintenance charges.

Royal Victoria Hospital, Belfast

The Governor of Northern Ireland will inaugurate on Oct 20th the new extensions which have been under erection for over three years, and are now complete They include two new units with 80 beds, a new nurses' home, three new operating theatres, several new class-rooms, additional accommodation for the ophthalmic, radiological, dental, and other departments, and a new mortuary The cost has been approximately £119,000

Belfast Mental Hospital

The annual report of the Belfast Mental Hospital for 1925 shows that there were 1260 patients under treatment during the year—632 males and 628 females The most prevalent form of mental disorder was melancholia (28 3 per cent), followed by primary dementia (15 per cent.), there were 25 cases of general paralysis of the insane—20 males and 5 females The most potent factor in causation was found to be a faulty heredity, the other chief causes being mental stress, the critical periods, and syphilis Alcoholic excess was found to be a contributory cause in 7 1 per cent of the admissions, and in 6 cases it was believed to be the principal cause Great attention was paid to the employment of patients, both male and female, the benefit of which "cannot be overestimated" The report calls attention to the need for the revision of the Lunacy Laws, and anticipates important assistance in this matter from the report of the Departmental Commission in Lunacy Reform It regards early treatment without loss of liberty as one of the most important measures

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

The following are some of the health statistics of the cities of Edinburgh and Newcastle-upon-Tyne for the year 1925:—

Name of city.	[illegible]	Birth-rate.	Death-rates per 1000 of the population.					Death-rates per 1000 births.	
			All causes.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Edinburgh ...	423,968	18.4	13.5	1.4	2.1	2.1	3.1	96	7.1
Newcastle-upon-Tyne...	286,700	22.0	13.7	1.7	1.1	2.5	1.[illegible]	86	2.9

Edinburgh.

Dr. William Robertson reports a widespread prevalence of scarlet fever during the year. There were 2871 notifications with 42 deaths, and the disease was most prevalent during the last quarter of the year. Usually about 80 per cent. of the cases are removed to hospital, but during 1925 domiciliary treatment was encouraged when the circumstances were suitable and only 52 per cent. were removed to hospital. Following the Leith experience the stay in hospital has been reduced to four or five weeks. A puzzling outbreak occurred at a large boarding school for boys and appeared to be due to a "carrier" member of the staff, from whose fauces the *Streptococcus haemolyticus* was recovered. The scheme for the immunisation of school-children against diphtheria has been continued without a single untoward result and has been extended to children of the pre-school age. The supply of insulin by the health department was begun on May 6th, 1924. About 100 phials are now given out every month, each containing 100 units. The total cost to the department after allowing for repayments has been about £300. Good results are reported from the use of mercury-vapour lamps for convalescents from measles and whooping-cough in the City Fever Hospital; and a mercury-vapour lamp and four open arc lamps have been installed at the surgical tuberculosis annexe also with apparent success. Efforts to secure greater cleanliness of milk are being continued, following on the milk competitions of the last two years. An illustration given in the report of 12 discs of cloth through each of which 1 pint of milk has been filtered, shows an extraordinary variation in the dirt content. The City Council have decided to establish a tubercle-free herd at their farm for the supply of milk to the city hospitals. In order to get early information of cases of food poisoning the City Council has decided to pay a fee of 2s. 6d. to any medical practitioner for the immediate notification of such cases.

Dr. Robertson expresses his regret that with a view to the prevention of tuberculosis the slum problem was not taken in hand before any other housing scheme. Within the past three years two clearance schemes have been undertaken by the municipality, one in the Cowgate and Grass Market and the other in Leith. The condemned houses have had to remain in occupation owing to the slow progress made in providing alternative houses for the slum occupiers. Many of the slum dwellers show reluctance to leave their haunts and remove to a greater distance from their work. Alternative housing is under consideration for the third and largest improvement scheme in connexion with the St. Leonard's area. "The economic situation," says Dr. Robertson, "places a damper on housing ideals." Well-considered schemes of house-ownership make a strong appeal, and much more could be done to relieve the housing situation under the Small Dwellings Acquisition Act if local authorities would embark upon publicity campaigns. At present few people understand how to proceed. Dr. Robertson also favours the establishment of a decent municipal hostel where unmarried working men could be boarded for 25s. per week. The new two-storied houses with their provision of conveniences and surrounding space and opportunities at hand for recreation must be of extraordinary benefit to the younger generation when compared with the lofty tenements with their gloomy, ill-ventilated stairs, their facilities for the spread of infectious disease and their aggregation of dwellings without adequate conveniences. Antenatal clinics are held at nine centres and the mothers of 12 per cent. of the infants born received some antenatal supervision during 1925. No damage to the eye was recorded from ophthalmia neonatorum.

Dr. John Guy, the tuberculosis officer, reports that the death-rate from pulmonary tuberculosis has remained practically stationary during the last five years, and he thinks this is due to the unsatisfactory state of industry. Dr. W. T. Benson states that the systematic immunisation of the nursing staff at the fever hospital against diphtheria, which was initiated in 1922, is being continued with very satisfactory results. Of the five nurses who contracted diphtheria during the year one had been proved susceptible but had not yet been immunised, three developed the disease within six weeks of the completion of the immunising course, and the fifth had a very mild attack one year after immunisation. All five recovered. Owing to the fact that immunity may take several months to develop Dr. Benson thinks it would be better for the nurses to be immunised six months before taking up their hospital duties. The number of nurses who contracted scarlet fever was 15, and an attempt is being made to immunise those who are shown to be susceptible by the Dick test. Dr. W. T. Gardiner, the otologist, has been able to reduce the stay in hospital of both scarlet and diphtheria patients. During the year he performed 28 mastoid operations and did 125 removals of tonsils and adenoids.

Dr. David Lees shows that the attendance at the V.D. clinics continues to improve, thus the percentage of those who completed their treatment until considered to be cured during the last six years was as follows:—

1920 ...	60.0 per cent.	1923 ...	84.4 per cent.
1921 ...	74.0 "	1924 ...	85.1 "
1922 ...	81.5 "	1925 ...	88.7 "

The attempt to deal with the defaulters by confidential correspondence has not proved very successful, but in dealing with female defaulters the follow-up work of the child welfare department has been valuable. Excluding cases treated at the Royal Maternity Hospital about 15 per cent. of the patients require in-patient treatment, and more bed accommodation is needed especially for married women and children. The attendances per new patient numbered 30. This may be compared with the figure of 36 for London, but the London report for 1925 gave no figure for the percentage of default, which in Edinburgh reached the low level of 11.3 during 1925. An appreciable amount of the Edinburgh default consists of seamen who must rejoin their ships. Patients are coming for treatment at an earlier stage of the disease. Gonorrhoea patients do not seek treatment as readily as syphilitic, perhaps because syphilis is regarded more seriously and the treatment of syphilis is more reliable and efficient. An increasing number of cases of vulvo-vaginitis was noted in 1925, and emphasises the need for personal cleanliness by patients with regard to towels, sponges, &c. Dr. Lees says with our present knowledge ophthalmia neonatorum can be stamped out.

The daily sale of "designated" milks in the city amounts to [illegible] gallons of "certified," 72 gallons of mounted on a 10 c cm syringe containing a 1 in 200 solution of novocaine, is then passed through the anæsthetised soft palate and the adenoid growth is infiltrated with the novocaine solution, which is injected at five points, effectively covering the adenoid area Five minutes after the local infiltration the adenoid may be painlessly removed by curettage

Homes for Mothers

With the object of reducing infantile mortality a group of Deputies has laid before the Chamber a Bill obliging departments to establish homes for mothers It is recommended that one or more of these institutions should be set up in every department as an annexe to the lying-in hospitals They are intended for all women partly or wholly breast-feeding their new-born babies, and also for those who wish to keep their confinement a secret Pregnant women whose condition requires special care would be admitted under exceptional circumstances, and it is intended that mothers should remain in the homes for as long as their own or their babies' health may make it desirable They would receive a daily allowance, and the fact that they were in hospital would be no obstacle to their receiving payments to which the law entitled them

Death of Two Physicians

The death is announced of Prof C Oddo, well known for his work in pathology and clinical medicine at the University of Marseilles, and author of works on spinal and medullar affections, emergency medicine, and occupational accidents

Dr Georges Thibierge, who died on August 24th, was one of the most brilliant French dermatologists He edited the *Annales de Dermatologie*, and was President of the French Society of Dermatology, and Secretary of the Society of Legal Medicine

Congresses and Post-graduate Courses

The Thirteenth International Congress of Hygiene will be held from Oct 19th to 21st at Paris under the presidency of Mr Henri Martel Applications for membership will be received by Mr Bossus, 142, Boulevard de Montparnasse, Paris, 14^{e}

The Thirty-fifth French Surgical Congress will be held at the Faculté de Médecine, Paris, from Oct 4th to 9th Jean Louis Faure will preside

Dr Gunsett, director of the cancer centre at Strasbourg, has organised a course dealing with the practical details of diagnosis and treatment of cancer It will last from Oct 18th to Nov 6th, the number of students is limited and there are few vacancies left Particulars from Dr Gunsett, Hôpital Civil, Strasbourg

A course in radiology will be given by Béclère from Oct 18th to Nov 13th at the Curie Foundation with supplementary practical work at the Hôpital St Antoine Applications to Dr Solomon at the hospital

Journées Médicales are to be held at Montpellier from Nov 4th to 6th Information may be had from Dr Desfour, 8 rue Emile Zola, Montpellier, Hérault

A course in cardiology will be given from Oct 11th to 27th by Dr Laubry and his associates Application to Mr D Routier, Hôpital Broussais, 96 rue Didot, Paris

A Sanatorium at Havre

A new institution has been opened at Havre for those damaged by asphyxiating gases during the war It will also take cases of tuberculosis, for which there are only some 15,000 beds available in France to serve 680,000 sufferers The new sanatorium has been erected by private subscription and it is hoped that similar efforts may be made in other places

A new hæmocytometer, devised by Dr Bécart, contains cell-count pipettes in which dilution is made easier and more exact by means of a supplementary air chamber, pierced by a hole The orifice is closed by the finger during aspiration, ascent of the column of liquid being immediately arrested by removing the finger from the hole The diluting chamber ends in a capillary lumen, which adds still further to ease and exactness

The Paris Court of Appeals has issued a decision making it clearly illegal to publish and sell notes of lectures delivered by professors attached to medical or other faculties This is a sequel to an action taken by several professors against a person who offered notes in medicine and pharmacology for sale to students A fine was inflicted

Dr. Pagniez has reported to the Société Médicale des Hôpitaux de Paris a colour reaction given by the urine in cases of spirochætal jaundice An emerald-green colour develops when the urine is treated, as in testing for albumin, by heat and acetic acid, and this reaction is said to be specific

Prof Cunéo, especially known for his work in bone surgery, has been sent by the French Government to Colombia where he will give addresses on surgery

The price of bread is not always rising in France, and in Paris the official price is now 2 55 francs per kilo The proportion of foreign wheat which may be mixed with French wheat, for making flour, is prescribed at 40 per cent Following the slight reduction of the official price bakers at St Malo have declared a strike A grain census is to be taken and grain stocks registered

IRELAND

(FROM OUR OWN CORRESPONDENTS)

Public Hospitals and Medical Fees

Dr A D Clinch, one of the medical inspectors of the Department of Local Government and Public Health, held a severe inquiry last week at Scariff District Hospital, co Clare, into complaints which had been made that the medical officer had demanded fees from patients treated in the hospital It appears that it is the custom for well-to-do patients to pay the full cost of their maintenance in the hospital, and the medical officer holds that in such cases he is entitled to charge a reasonable fee for his services In this view he is supported by the medical profession of the county On the other hand, certain members of the county board of health maintain that the medical officer is paid a salary to cover attendance on all patients admitted to the hospital, and that no fee should be charged for treatment given in a public institution Two patients gave evidence that they were willing to pay the doctor a fee, but that they thought the fee he demanded was excessive—the principle of payment being thus conceded They were cross-examined as to their means, while the medical officer denied having refused treatment to any patient on the ground of a fee, or the right fee, not being forthcoming The inspector gave it as his personal opinion that a doctor could properly accept a fee from a patient who was liable for full maintenance charges

Royal Victoria Hospital, Belfast

The Governor of Northern Ireland will inaugurate on Oct 20th the new extensions which have been under erection for over three years, and are now complete They include two new units with 80 beds, a new nurses' home, three new operating theatres, several new class-rooms, additional accommodation for the ophthalmic, radiological, dental, and other departments, and a new mortuary The cost has been approximately £119,000

Belfast Mental Hospital

The annual report of the Belfast Mental Hospital for 1925 shows that there were 1260 patients under treatment during the year—632 males and 628 females The most prevalent form of mental disorder was melancholia (28 3 per cent), followed by primary dementia (15 per cent), there were 25 cases of general paralysis of the insane—20 males and 5 females The most potent factor in causation was found to be a faulty heredity, the other chief causes being mental stress, the critical periods, and syphilis Alcoholic excess was found to be a contributory cause in 7 1 per cent of the admissions, and in 6 cases it was believed to be the principal cause Great attention was paid to the employment of patients, both male and female, the benefit of which "cannot be overestimated" The report calls attention to the need for the revision of the Lunacy Laws, and anticipates important assistance in this matter from the report of the Departmental Commission on Lunacy Reform It regards early treatment without loss of liberty as one of the most important measures

Hospital. So far not more than a single case has occurred in any one house, and these have been widely scattered all over the city. Careful investigations have been made, but, so far, practically no connexion between the cases has been traced. Hitherto, this disease has caused little trouble in Leicester, the largest number notified in any one year since the disease was made notifiable was 12 in the year 1924. Under normal conditions however, Dr. Millard adds, it is probable that a good many cases escape notification, the disease being so rare that medical men forget that it is notifiable. At the present time all the medical practitioners having been circularised as to the existence of the outbreak cases are, no doubt, coming to light which normally would not be recognised or reported.

SCHOOL MEDICAL SERVICE.

THREE LARGE TOWNS.

Name of town.	No. on roll.	Av. elem. sch'l attendance.	No. of routine children examined.	No. of special examinations and re-inspections.	Percentage of children found on routine examination requiring treatment.*
Bristol ..	54,477	[illegible]	[illegible]	44,287	15·5
St. Helens ..	[illegible]	17,932	5,915	13,173	42·3
Nottingham ..	[illegible]	[illegible]	[illegible]	[illegible]	14·9

* Excluding dental defects and uncleanliness.

Bristol.

THE report of Dr. R. A. Askins for 1925 to the Education Committee shows the existence in Bristol of close coöperation between the infant welfare department and the school medical service, ensuring a valuable continuity of medical history. Sixty-two children were referred from the department to the school eye clinics on account of squint. Dr. R. R. Garden gives an account of the orthoptic treatment of concomitant squint. He comments on the serious loss of sight which results from neglected unilateral convergent squint of the concomitant type and emphasises the need for treatment in the earliest stages. In six early cases the squint had existed only a short time and the mere wearing of suitable spectacles was sufficient to effect a cure. In 22 cases where there was serious impairment of vision in the squinting eye orthoptic treatment had been given for some months with the results that in 12 cases, vision had been restored to normal or to within one line of normal (Snellen or picture test types) as compared with the fixing eye. In 10 cases the vision was markedly improved. There is also a scheme in Bristol whereby expectant mothers and children under 5 years of age have dental treatment at the school clinics. The Education Committee maintain two schools for feeble-minded children and the total number on the registers at the end of the year was 246. Thirty-seven cases were notified under the Mental Deficiency Act to the local committee during the year—16 boys and 21 girls. Dr. Garden relates in detail 40 cases of encephalitis lethargica and its sequelæ with their condition in February, 1925, and again in February, 1926. The changes for better or worse, which some of these children show, suggest that those are right who regard the late symptoms as not really residua or after-effects, but signs that the acute disease is followed in many cases by a chronic stage. The interesting section by Dr. J. Morrison at the end of the report on the influence of environment in the causation of rheumatic heart disease is dealt with on p. 659 of this issue.

St. Helens.

Dr. Frank Hauxwell's report shows that the work, so far as the existing facilities admit, has been well carried out and 84·1 per cent. of defects referred for treatment received it during the year. Those responsible for the welfare of the children in St. Helens have been slow to appreciate the value, both socially and economically, to the community of providing special facilities for weakly and abnormal children. The percentage of parents attending medical inspections is a fair index of the interest taken by the lay public in the medical work, and Dr. Hauxwell states the attendance of parents has always been poor. A bold policy often stimulates public interest, and the adoption of the plans for the first open-air school and for the new orthopædic scheme will certainly benefit both the children and the community in general. The bogey of the parents' objection to special schools for the feeble-minded has been exposed in many urban districts and should not deter a trial in St. Helens. Dr. Hauxwell attributes the falling off in the general health of the children to industrial depression and bad housing, aggravated by improper feeding and the prevalence of infectious diseases (measles and whooping-cough). A table giving percentages of malnutrition in each year since 1920 shows that during the coal strike year 1921 when 1,337,576 meals were supplied to school-children, the malnutrition figure fell to 0·6 per cent., as against 1·5 per cent. in the previous year. This was the lowest percentage of any of the five years, which may be used as an argument for the necessity of arousing the interest of parents in the welfare of their children. Communal meals and libations of cod-liver oil cannot permanently do away with the responsibilities of parents or make it less essential for them to master the fundamentals of home hygiene.

Nottingham.

Dr. E. M. Wyche looks upon his report as an annual stocktaking, a sort of index of departmental efficiency and progress. And he succeeds in holding the interest not only of the specialist but also of the layman when he sketches out the special needs of the locality, the circumstances which have shaped the policy, and the degree of success already obtained. His whole-hearted belief in Nature's therapy of open-air and sunlight is justified by the results obtained at the six open-air schools of the city and the new open-air school at the Arboretum, which is the last word in such things. Dr. Wyche rightly holds that while the ideal must still be aimed at yet the love of fresh air, sunlight, and cleanly habits can be instilled all day and every day at every school. The personality of the head teacher and his interest in the welfare of the children is a large factor in the promotion of school medical work, but zeal in the medical officer begets enthusiasm in both teachers and parents, and there is no branch of school medical work in Nottingham which lags behind. The method of ascertainment of defects is set out in the report: cases for removal of tonsils and adenoids are carefully sifted, and weakly children are toned up by exposure to ultra-violet rays for a few weeks prior to operation, after which they remain in hospital for two days. Ionisation is the accepted method in treating discharges from ears and noses, and increased facilities for dental treatment are being provided. The orthopædic scheme is now in working order and promises well, though the shortage of hospital schools is a difficulty. Dr. Wyche believes that, apart from hereditary tendency to myopia, this defect is definitely arrested by residence in an open-air school. The sifting of all abnormal children, each into the special school or class designed for his peculiar needs, be he blind, deaf, cripple, or feeble-minded, is thorough. For instance, all 7-year-olds are submitted by the head teacher to standardised tests for intelligence, and there are 37 classes for dull and backward children alone.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED SEPT. 11TH, 1926.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 103 (last week 79); scarlet fever, 1275; diphtheria, 863; enteric fever, 74; pneumonia, 413; puerperal fever, 31; cerebro-spinal fever, 6; acute poliomyelitis, 53; encephalitis lethargica,

(Continued at foot of next page.)

Grade A (tuberculin-tested), 2 gallons of Grade A, and 5815 gallons of pasteurised, a total of 6137 gallons The daily consumption of "non-designated" milk amounts to 15,298 gallons, of which 3089 are sold in bottles The cow population of the city byres is about 4300 and, among these, 15 cases of tubercle of the udder and 11 of advanced tuberculosis were found during 1925 Of 74 samples of mixed milk examined for tubercle, 6 gave a positive result equal to 8 8 per cent The average percentage of tuberculous milk samples for the last eight years is approximately 8 6 per cent, exactly the same as that for the city of Manchester during the last 14 years

Newcastle

Dr Harold Kerr reports that 206 cases of encephalitis lethargica have been treated in Newcastle between 1919 and 1925 Of these, 68 died, 60 were left with mental or permanent nervous impairment, 64 recovered, and 14 have removed to an unknown address The special work of Dr Neil Maclay, the oto-rhinologist, visiting at the city fever hospital, has now been carried on since 1921 Sixteen per cent of the scarlet fever cases have developed nose or ear infections with occasional mastoid involvement Thirty-three cases needed operation and their stay in hospital averaged only 14 days from the development of the complication as compared with 25 days in the case of those treated by conservative methods Dr S J Clegg has continued the use of prophylactic vaccines prepared from organisms present in the nasal and ear discharges of scarlet fever patients Of 337 cases treated on admission with these vaccines, 10 per cent developed nose or ear discharge, while of the remaining 699 not so treated 19 per cent developed one or other of these complications The scarlet fever antitoxin obtained from horses on similar lines to diphtheria antitoxin has been tried, and appeared to give unusually good results in severe septic cases A further prophylactic measure used in the diphtheria wards has been the inoculation of patients with ordinary polyvalent anti-streptococcus serum, and this appears to have been successful in preventing "cross" infection with scarlet fever The Schick test followed by immunisation when necessary is used for all members of the staff in the diphtheria pavilions The "Dick" reaction has also been used experimentally but has not yet become a routine measure The average stay in hospital for scarlet fever cases is now 37 3 days, as compared with 56 days less than 20 years ago, and there is no doubt, says Dr Kerr, that much of this shortening is due to the advance in vaccine and serum therapy Little use is now made of chemical disinfectants, the expenditure for the year on this item being only £62, of which £16 was for the hospitals Reliance is chiefly placed on steam disinfection of bedding, clothing, &c, and on thorough cleansing

The V D. clinic is established in the skin department of the Royal Victoria Infirmary under the charge of Sir Robert Bolam There is a drop in new cases, especially syphilis Thus in 1921 there were 534 new cases of syphilis and in 1925 only 286 The figures for gonorrhœa and soft chancre were 489 and 40 respectively in 1921, and 466 and 34 in 1925 The attendance per case has risen from 10 9 in the earlier year to 17 4 in the later The irrigation station is largely used Thirty-nine per cent of patients ceased to attend before treatment was completed (the Edinburgh figure was 11 3), and of these 475 out of 588 defaulted before their first course of injections was completed The notifications of ophthalmia neonatorum have fallen from 116 in 1920 to 50 in 1925 Of 321 registered blind persons in Newcastle to-day 71 are stated to have been blind from birth, but there are only three blind children under 5 years of age

The number of antenatal sessions has been increased from 74 in 1920 to 319 in 1925 The medical officers who preside at these sessions are chosen from among the practitioners who specialise in gynæcology and whose ability to deal with this class of work is particularly reliable The maternal mortality from childbirth has fallen from 3 3 per 1000 births in 1921 to 2 9 in 1925, the English rate being about 4 These comparatively satisfactory figures are largely due to the work of the Princess Mary Maternity Hospital which deals with about one-third of all the births in the city The remaining two-thirds of the births are managed in about equal proportions by medical practitioners and midwives Since 1921, when in the name of economy the number of health visitors was reduced from 20 to 12, there has been a gradual recovery and there are now 18 health visitors Voluntary workers play an important part and run a nursery school at St Peter's Centre and propose to establish similar schools in two other centres

Dr Kerr draws attention to "the inevitable increase in tuberculosis that follows within a couple of years or so of a period of financial depression" Thus the rate from pulmonary tuberculosis which was 1 25 in 1921, 1 14 in 1922, and 1 10 in 1923, rose to 1 12 in 1924 and 1 20 in 1925 There are not enough patients in the curable stage to fill the beds at Barrasford Sanatorium, whilst there were too many for the 62 beds for advanced cases at Walker Gate To meet the latter want another pavilion was added for advanced cases in 1922 The health committee leases 30 beds at Stannington Sanatorium for children where the average stay for boys was 313 days and for girls 199 Most of the surgical tuberculosis is dealt with by the general hospitals and the health committee will in the near future have to face the establishment of a special institution for surgical tuberculosis or the subsidising of one or more of the general hospitals Out of 372 samples of milk examined for tubercle 29 (equal to 8 per cent) gave a positive result

Newcastle consumes daily 10,000 gallons of milk equivalent to a small teacupful per head of the population Only 1500 gallons are produced in the neighbourhood, the remainder comes from Cumberland, Westmorland, Dumfriesshire, and Ayrshire, and a small amount from Northumberland From 400 to 500 gallons of graded milk are sold, of which 30 are "certified" and the remainder "Grade A (tuberculin tested)" The only two institutions in the city which use graded milk are the Fever Hospital and the open-air school

A more satisfactory addition has been made to the housing accommodation during the past year, 1177 houses having been completed and many hundreds being under construction at the close of the year Private enterprise contributed 385 of the total In spite of this improvement there is still gross overcrowding, profiteering by sub-letters, and the exploitation of so-called furnished lodgings A beginning has been made with the clearing of one of the three condemned areas Dr Leonard Hill's kata-thermometer being used with success for improving the ventilation of cinemas and theatres Eighty-four tests were made in 37 buildings The only buildings which gave a satisfactory result were 16 cinemas in which a mechanical system of ventilation was installed

POLIOMYELITIS IN LEICESTER

THE outbreak of acute poliomyelitis in Leicestershire affects both the city and county As far as the city is concerned Dr C Killick Millard informs us that the first case was reported in May This was followed by isolated cases until in August a sharp increase occurred, and during that and the present month over 40 cases have been reported, while additional cases have been discovered by the health department The majority of the cases have been, as usual, in children under 5, but there have been a considerable number in older children and several cases in adults There have been some half dozen deaths, chiefly of the fulminating type, the cases proving rapidly fatal within a few days of the onset Cases have been admitted to the Leicester Royal Infirmary and a special ward has now been opened at the City Isolation

SANATORIUM TREATMENT OF TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—Your annotation of Sept. 11th [illegible] on Messrs. Stocks and Karn's inquiry into the value of sanatorium treatment for pulmonary tuberculosis refers to the surprising result that amongst the patients dealt with those who have been in a sanatorium eventually fared worse than those who had not. There is, I think, a reasonable explanation.

An average favourable case of pulmonary tuberculosis needs from one to two years' treatment, and those who are stated to have been treated in a sanatorium seldom spend more than a few months of this time in the institution, all the remainder consisting of home treatment. The latter will have much more influence over the final result than the relatively short spell of sanatorium treatment; and as patients are sent to a sanatorium chiefly because the home conditions are unfavourable or unsuitable for treatment there, those treated in a sanatorium will have less favourable home conditions than those treated entirely at home, and will show correspondingly poorer results. The contrast will be greater in proportion to the unsuitability of the homes, and will be less apparent in only early favourable cases, because these will be more completely restored in the short time available for sanatorium treatment.

We may conclude, not that sanatorium treatment is waste of time and money, but that only favourable cases should receive prolonged treatment, first at a sanatorium and then in a medically-supervised home. In proportion as the latter is made to resemble hygienically a good sanatorium, so will the time necessary for sanatorium treatment be reduced and the chance of subsequent relapse diminished. I do not wish to minimise the value of the inquiry referred to, but to prevent fallacious conclusions being drawn therefrom. I am, Sir, yours faithfully,

Farnham, Surrey, Sept. [illegible], 1926. F. R. WALTERS.

TUBERCULIN DISPENSARIES.

To the Editor of THE LANCET.

SIR,—Will you kindly allow me to ask through the medium of your columns if perchance there is now a tuberculin dispensary in Brighton where a patient going out from Rudgwick Sanatorium may receive treatment with tuberculin on the intensive system, as taught by Dr. Camac Wilkinson in 1910 and following years. I can hardly imagine a place of the size and importance of Brighton not having a public tuberculin dispensary, and there must surely be some of the many doctors there who are proficient in the method, but I cannot find anyone who is known to be an expert in this treatment.

I, personally, have followed out his method of treatment ever since we opened our Clapham Tuberculin Dispensary in April, 1911, and am more than convinced that up to the present time no other treatment can give anything like such good results, and I have worked at Rudgwick ever since 1898. If this treatment is begun early about 90 per cent. recover completely and that without having to give up their daily work, which is so important.

In London, now that Dr. Camac Wilkinson has returned, this early treatment may be obtained at 32, Fitzroy-street, Fitzroy-square, Tottenham Court-road, W.C., on Mondays and Thursdays at 9–11 A.M., and doctors are all welcomed to come and learn it; but other towns should surely be able to work out such a system, so that patients everywhere may get the benefit.—I am, Sir, yours faithfully,

ANNIE MCCALL, M.D., &c.,
Chairman and Director of Clapham Maternity
Hospital and Affiliated Institutions.

Clapham-road, London, S.W., Sept. 21st, 1926.

*** Is there any reason to doubt that the facilities for the treatment advocated will follow upon the general acceptation by the medical profession of their need?—ED. L.

CASTOR OIL VERSUS SALINE APERIENT.

To the Editor of THE LANCET.

SIR,—In view of the [illegible] under the above heading in THE LANCET of July 3rd and [illegible] of the very great [illegible] oil in the early stages of acute bacillary dysentery, I submit the following figures in the hope that they may encourage further trials of this treatment.

Between October, [illegible] and September, [illegible] I treated [illegible] per cent. Between October, [illegible] and March, [illegible] I made use of the castor oil treatment [illegible] per cent.—most of these [illegible] however [illegible] only in the cases [illegible] how best to apply the treatment. In my last [illegible] cases there has been no death [illegible] those cases [illegible]

Full particulars of this treatment, its rationale, and results are given in an article in the [illegible] *Medical Journal* (August, [illegible]) by myself and my valued late assistant, Mr. C. J. [illegible], to which Dr. [illegible] most kindly refers in his letter in THE LANCET of July [illegible]. Possibly [illegible] would prove as useful as castor oil [illegible]—I am, Sir, yours faithfully,

T. R. [illegible], M.R.C.S., L.R.C.P. [illegible]

Medical Superintendent [illegible]

[illegible], August [illegible], 1926.

HELIOTHERAPY IN PULMONARY TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—I have followed with interest Dr. J. [illegible] Wood's article and Dr. F. C. Chandler's letter on this subject. The conditions for heliotherapy at Montana are practically identical with those at Leysin, and we are using this treatment more and more extensively in pulmonary cases. With febrile patients the amount of exposure has to be so small and the time required for pigmentation is so long that sun-baths are rarely employed. Short air-baths on the feet and legs are more useful in such cases. Sun-baths are only used extensively when the temperature has been brought down to normal by rest, artificial pneumothorax, sanocrysin, or other means.

The majority of afebrile patients benefit from heliotherapy, but dangerous reactions are liable to follow faulty technique, especially too early exposure of the diseased part. To avoid this danger the following method is used. The feet, legs, and abdomen are exposed according to Rollier's technique. About a month later, when these parts are sufficiently pigmented, the chest is first exposed for two to five minutes. The time of exposure is increased gradually up to one to two hours. As a rule it is not wise to give more than two hours' exposure to Alpine sunlight in pulmonary cases. Rollier's practice in avoiding sun-baths when the air temperature is high should be carefully observed. In summer the early morning hours give the best conditions for heliotherapy. In winter sun-bathing may be carried out at any time of day as the air temperature is always low and the intensity of the sunlight is increased by reflection from the snow.

Although much less striking than in surgical cases, the results so far obtained are encouraging. Besides increasing the appetite and improving the nutrition of skin and muscles, heliotherapy has a psychic effect which is often of considerable benefit. Recently the treatment of surgical tuberculosis has been copied still further, and with certain cases hydrotherapy has been added to heliotherapy. In a few of the more robust patients this combination of sun- and lake-bathing appears to have a beneficial effect.

I am, Sir, yours faithfully,

ANDREW MORLAND.

Palace Sanatorium, Montana, Switzerland,
Sept. 17th, 1926.

Correspondence.

"Audi alteram partem"

PASTEURISATION OF MILK

To the Editor of The Lancet

Sir,—So far as I am aware, not the most ardent advocate of pasteurisation fails to recognise and insist that pure raw milk is the best But the whole point, the sole foundation, for the advocacy of pasteurisation, lies in the simple well-ascertained fact that pure raw milk is not available in this country for the people Even Grade A Certified Milk does not comply with this simple definition Such milk, under the Order, may contain 30,000 bacteria per c cm, and the colon bacillus in less than 0 1 c cm

I find it difficult to understand what Mr McLachlan means by the following sentence —

> "Curdling is still looked on as the signal of milk going bad, and the public should be educated not to drink products which are totally unfit for consumption, simply because there is no clot"

Surely he does not wish to imply, as one might imagine from the context, that pasteurised milk is totally unfit for consumption. And, again, he makes a reference to enzymes which he affirms are destroyed by pasteurisation, and says "there is no justification *for removing them unless some definite advantage* is gained thereby." The definite advantage gained by pasteurisation is that it renders milk safe It seems certain that Marcelin would very much have preferred to partake of a meal which needed four hours for digestion, knowing it to be safe, than one which required half an hour less, but contained dangerous ingredients

Mr McLachlan's statement that—

> "during 'pasteurisation' the lactic acid, but not the putrefactive or sporulating, bacteria are destroyed, with the result that the milk may go bad without curdling if kept for any length of time"

contains an error which was corrected many years ago I refer Mr McLachlan to work done for the Bureau of Animal Industry of the U S Department of Agriculture by S Henry Ayers and William T Johnson, jun, and set forth in a bulletin issued March 24th, 1913 I quote certain passages which are immediately relevant.—

> "An investigation of commercially pasteurised milk in this country showed the presence of high-temperature resisting lactic acid bacteria It was further found that commercially pasteurised milk always soured" (p 10)

The suggestion that reinfection was the explanation of the souring is negatived by subsequent exact laboratory work.

> "The percentage of the acid group is increased by pasteurisation, while the other groups are decreased in their percentage of the total bacteria" (p 59)

> "A qualitative study of the acid group shows that many organisms giving characteristics of the typical lactic acid bacteria survive pasteurisation for 30 minutes at 62 8 C (145° F)" (p 60)

It must be borne in mind that the so-called 'flash" pasteurisation—now universally condemned—was not really pasteurisation at all

Dr Affleck claims that he succeeded in killing the trade of selling sterilised milk in Cheltenham "many years ago" Is it dead to-day? His narrative about the interview with a mother is very amusing indeed He seems *to imply that* that interview killed the trade in sterilised milk In any case sterilisation is not pasteurisation There is one definite statement in his letter, namely —

> "Pasteurised milk has, and will have, the same deplorable results as boiled or sterilised milk, because, and this is the all-important point, *it is cooked*"

May I ask Dr Affleck through your columns to produce evidence of "deplorable results" from the use of boiled, or sterilised milk I do not mean vague statements I do not want reference to laboratory experiments on animals I want proof that such results are found in human beings fed on cooked milk

If Dr Affleck is logical your readers are entitled to expect that he does not boil, or cook, any of his food We are not urged not to cook vegetables or meat or fish or, in fact, any other article of diet but milk Terrible results are not predicted because we bake flour and eat bread Apparently Dr Affleck is unaware that the late Prof Pierre Budin, a pediatrician of world-wide reputation, is on record with the statement that he treated 3000 infants at the Belle Ville Dispensary in Paris, all fed on sterilised —not pasteurised—milk, without seeing a single case of scurvy Eminent pediatricians, particularly in America, are equally emphatic as to the absence of deleterious results of pasteurisation

I want to convince Dr Affleck, and I will suggest that he purchase a pint of milk anywhere, pass it through a white filter paper, and inspect the deposit If he will be at the additional pains of adding a comparable amount of cow-dung to an equal quantity of milk which he has obtained from the udder of a cow free from contamination, and pass that through another filter, and compare the sediment microscopically, he will be satisfied of the nature of the bulk of the contamination If he will plate out some of the deposit he will almost invariably discover *bacilli* of the colon group. If he will inoculate guinea-pigs with milk he will find that from 5 to 10 per cent of the samples will cause tuberculosis in these animals

I hold in my hand at the moment a statement of the result of the examination of a sample of milk purchased this present month It contained 6,774,000 organisms developed at room temperature, in addition to 4 016,000 per c cm developed at blood heat, and colon bacilli were present in 0 000,001 c cm of the milk Dr Charles Hastings, medical officer of health for Toronto, has stated repeatedly in public that it is his conviction that it would be true to write as an epitaph on half of the graves of babies "Killed by dirty milk"

We medical men have a responsibility We may not write, or speak, without adequate information We must disabuse our minds of preconceptions It is hardly satisfactory to permit ourselves to use such phrases as "devitalising or organismal life" I do not know what those words mean Neither do I understand what is meant by the "sthenic value of milk," but I do know that the present supply of milk in this country is dirty and dangerous, and I do know that pasteurised milk has been used for many years, in many places, not only without producing any ill-effects (although interested persons have been anxiously on the look-out to discover them), but that it has caused extraordinary reduction of disease and death among the populations so served

Let me conclude by again asking if we may cook most foods, why may we not cook one particular food?—I am, Sir, yours faithfully,

S G Moore, M D,

Sept 17th, 1926 Medical Officer of Health, Huddersfield

Infectious Disease in England and Wales

(Continued from previous page)

28, continued fever, 1, dysentery, 63; ophthalmia neonatorum, 128, There were no cases of cholera, plague, or typhus fever notified during the week

The notifications of poliomyelitis are still on the increase, cases being reported in numbers from one to four from 18 scattered counties with 17 from Leicestershire (10 from Leicester itself), and 8 from Essex (7 from Orsett R D)

Deaths —In the aggregate of great towns, including London, there were no deaths from small-pox, 4 (0) from enteric fever, 10 (0) from measles, 3 (0) from scarlet fever, 30 (4) from whooping-cough, 20 (5) from diphtheria, 180 (29) from diarrhœa and enteritis under two years, and 12 (1) from influenza The returns from diarrhœa and enteritis show a small rise for the country as a whole and a welcome diminution in London The figures in parentheses are those for London itself, and it is noteworthy that in the week under review there was no death in London either from small-pox, enteric fever, measles or scarlet fever, and only one from influenza

New School Clinic, Birmingham—On Thursday Sept 30th, Sir Humphry Rolleston will open a new school clinic in Sheep-street, Birmingham

Dr Andrew Balfour Director of the London School of Hygiene and Tropical Medicine will next month attend the fiftieth anniversary celebration of Johns Hopkins University Baltimore and will deliver an address at the formal opening of the new building of the School of Hygiene and Public Health of that University.

Plymouth "Penny in the Pound" Scheme—This scheme organised by the Plymouth Voluntary Hospitals Committee has made rapid progress, and it is expected that the total raised in the financial year which expires this month will reach £14 500 Last year it was nearly £11 000 and the year before a little over £6000 There are now close upon 40 000 contributors

Pressure of Emergency Cases—Bolton Infirmary is being greatly embarrassed by the increase in emergency cases On a recent occasion while six operations were being performed six casualty cases were admitted in half an hour each requiring immediate attention During August 356 new casualty cases were treated a considerable proportion of them the result of motoring accidents

Hospitals Welfare Society—Last week Sir George Hume M P chairman of the London County Council, broadcasted an appeal on behalf of the Hospitals Welfare Society Its object is to help five hospitals in South-East London—the Miller, the Seamen's the Blackheath St John's, and the South-Eastern—by weekly house-to-house collections and in six years £25 000 has been raised in this way, about £100 a week is now collected The organisers of the scheme are urging its adoption by hospitals which have no comparable assistance

Papworth Tuberculosis Industrial Settlement—The annual report of Papworth Hall Sanatorium and Industrial Settlement which has just been issued, shows that excellent progress is being made The sanatorium which is a separate unit has treated 1778 cases in ten years and there are now in the institution and the village 559 persons including 90 healthy children of ex-patients No child who was not suffering in a marked degree from tuberculosis before going to live in the colony has shown any sign of infection After the experience of a decade, the medical director Dr P C Varrier-Jones, is confirmed in his belief that settlements of this kind are essential in combating tuberculosis The industries are described as a serious commercial concern, not trading upon sympathy

Royal Institute of Public Health—Problems of Personal and Public Health is the title of a course at the Institute which will begin on Oct 13th with a lecture by Sir William Willcox on Intestinal Infection in Relation to Personal Health and Disease. The four next lectures will be on the following subjects: The Prevention and Treatment of Eczematous Conditions of the Skin of Occupational Origin, by Dr W J O'Donovan, on Oct 20th, Town Planning in Relation to Health, by Prof L P Abercrombie, on Oct 27th; Ventilation in Relation to Health, by Dr H. M. Vernon, on Nov 3rd: and Industrial Psychology Applied to the Home, by Prof Winifred Cullis on Nov 10th. Particulars will be published later of the remaining lectures of the series, which are to be given by Dr R H Miller, Dr C W Saleeby, Dr P C Varrier-Jones, and Lieut-Colonel F E Fremantle All of them will be delivered on Wednesdays at 4 P.M. in the Lecture Hall of the Institute 37, Russell-square, London, W C 1

Maudsley Hospital, Denmark Hill—During and after the second week of October three series of clinical lectures illustrated by cases will be held On Mondays Dr W Moodie will deal with Relations of Mental Disorder to Physical Conditions, on Wednesdays Dr Edward Mapother will deal with Neurotic and Psychotic Syndromes and on Fridays Dr W S Dawson will deal with Mental Symptoms and their Genesis, the hour of all lectures being 2 30 P.M In addition a discussion on cases in the Mental Hospital will be held in the wards every Tuesday at 11 30 A.M and monthly, on the last Friday of each month, at 4 30 P M when a group of patients from one of the L C C mental hospitals will be shown These discussions are open to medical practitioners without fee Posts as clinical assistant can be obtained on application to the Medical Superintendent The course of lectures and practical instruction for the Diploma in Psychological Medicine will be held at the above hospital beginning in January next The lectures and demonstrations are given in series, and either group can be attended separately The fee for the course is ten guineas, or for a single series two guineas, payable to the Fellowship of Medicine, from which copies of the syllabus may be obtained.

Hospitals and the Coal Strike—Hospitals in the coalfields and in a minor degree those in industrial districts are suffering from the long continuance of the deadlock Sunderland Royal Infirmary for example is losing about £300 a week in reduced workmen's subscriptions The subscriptions of employers who contribute on a wages basis are also seriously reduced The loss on workmen's contributions already reaches about £5000

The late Dr A. M McAldowie—After living in retirement at Cheltenham for many years Dr Alexander Morison McAldowie died on Sept. 4th at the age of 74 He was born at Aberdeen and studied at the University there graduating, with highest honours as M B in 1875 and M D in 1879 In the year after qualifying he took up an appointment as resident house physician to the North Staffordshire Infirmary and this he held for four years. Afterwards settling in practice at Stoke-on-Trent, he was in 1889 appointed honorary physician to the Infirmary, and became well known in the midlands, especially for his work on lead poisoning amongst pottery workers He was an important witness at the inquiry held at Stoke by Lord James of Hereford about 25 years ago when he gave an account of experiments made on himself to discover the effects of slow lead absorption Dr McAldowie's keen logical faculty fitted him to be a neurologist and he contributed a number of articles to *Brain* His abilities were recognised by election as F R S Edin and in 1898 he was President of the Staffordshire branch of the British Medical Association But his interests extended far beyond his work He was President of the North Staffordshire Field Club to which he read papers on archæology and natural history and he wrote a book on "The Birds of Staffordshire." On retiring in 1906 he went to live in Gloucestershire and enjoyed similar leisure pursuits During the war he went back to medical work again as honorary surgeon to the Leckhampton Voluntary Aid Detachment Hospital, to which he gave devoted service Dr McAldowie leaves a widow, a son and three daughters

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE HOSTEL, Imperial Hotel, Russell-square, W C

MONDAY Sept 27th—9 P M Prof B J Collingwood will open a Discussion on Hydrogen ion Concentration in Health and Disease

THURSDAY—9 P.M, Dr Andrew Balfour will open a Discussion on The Acclimatisation of the White Man in the Tropics

All medical practitioners cordially invited

HOSPITAL FOR SICK CHILDREN, Great Ormond street, W C

THURSDAY Oct 7th.—4 P M., Dr Cockayne Rickets as it is seen to-day

ANCOATS HOSPITAL POST-GRADUATE COURSE

THURSDAY Sept 30th—4 15 P M, Mr Harry Platt Treatment of Common Injuries Sprains and Minor Injuries of Joints, Muscles and Tendons

ST MARGARET'S HOSPITAL FOR WOMEN, Acomb street, Whitworth Park, Manchester

WEDNESDAY, Sept 22nd.—4 P M President's Address Social Meeting Mr A C Magian The Uses and Abuses of Curettage

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSES

TUESDAY Sept 28th—4 15 P M Mr C Roberts The After-treatment of Surgical Cases

FRIDAY—4 15 P M Dr R Veitch Clark General Survey of Cancer Incidence

BRITISH INSTITUTE OF PHILOSOPHICAL STUDIES, 88 Kingsway, London W C

A course of Lectures on the following subjects will begin on Oct 4th —

Mind and Matter The Hon Bertrand Russell F R S Medical Psychology T W Mitchell M D The Development of Philosophy since Kant Prof G Dawes Hicks Ph D Litt D The Problems of Philosophy The Hon Bertrand Russell Psychology: Prof C W Valentine D Phil.

Full syllabus on application to The Director of the Institute.

REACTION TO BLOOD TRANSFUSION

To the Editor of The Lancet

Sir,—Your leading article of Sept 11th refers to Dr C A Doan's work on incompatibility in blood transfusion My personal experience of transfusions is limited to 63 cases (mostly those of Mr Gordon-Taylor) carried out during the past 18 months at the Middlesex Hospital In every case I performed a cross-agglutination test between the donor's corpuscles and patient's serum, the former having first been shown to belong to the same group as the recipient, or to be a member of the fourth group In five cases I was not satisfied as to the compatibility of the bloods, since agglutination of the donor's corpuscles occurred, but always after an appreciable interval of time which varied from 3–10 minutes, and never so markedly as a control test performed with the recipient's serum and an obviously incompatible donor. These cases I referred to Dr S L Baker for the performance of a microscopic agglutination test Two donors he bid me discard, but permitted the use of the other three Thus it would appear that approximately 3 per cent of the donors proved unsuitable when tested "directly," notwithstanding their belonging either to the same groups as their corresponding recipients or being members of Group IV.

The conclusion is identical with your own—it is not wise to undertake a transfusion in the absence of a direct agglutination test The point is of great practical importance and sometimes leads to difficulty in finding a suitable donor On one occasion I tested eight donors, all of the patients' group (IV), before finding one who gave a negative cross-agglutination test To my mind there is little doubt that more than four groups exist, but whether we have, at the present time, a convenient and rapid means of differentiating them is another matter.

I am, Sir, yours faithfully,

Frederick W Roques, M B , B Ch ,
Senior Demonstrator in Anatomy, late House Surgeon,
Sept 15th, 1926 Middlesex Hospital

Medical News.

Epsom College —The Council of the College is about to award one of the Leopold Salomons Entrance Scholarships of £50 per annum which were established "as a slight recognition of the splendid work of the medical profession carried on during the war" Candidates must be sons of legally qualified members of the medical profession who are unable to enter Epsom College without the help of this scholarship Only those boys can become candidates who were 11 years of age and under 14 on Jan 1st last, and can show a standard of education adequate for their age Their general character and physical condition, as well as their mental capacity, must be satisfactory to the Council Applications must be received not later than the morning of Oct 6th —The Council will also shortly award a special St Anne's Home Scholarship of £52 a year, tenable for about five years, to the orphan daughter of a medical man who was in independent practice in England or Wales for not less than five years Only those are eligible as candidates who were fully 10 years of age and not over 12 on May 1st last Forms of application and full particulars of both these scholarships may be had from the Secretary of Epsom College, 49, Bedford-square, London, W C 1

London Medical Exhibition —Daily from Oct 4th to 8th, from noon until 6 30 P M , the London Medical Exhibition will be open to members of the medical profession at the Central Hall, Westminster These annual exhibitions were started in 1905 and this will be the largest yet held The most recent applications of science to practice will be on view, and a very large number of devices and preparations for treatment and diagnosis are to be shown There is usually a big attendance of doctors and a reception-room, a tea-room, and light refreshments are provided to give visitors a chance of seeing their friends Invitation cards will be sent to every member of the profession residing within a 30-mile radius of the hall Those who have not received cards can get them on application to the Secretary, the London Medical Exhibition, 1[illegible]-200, Bishopsgate, London, E C , or at the Central Hall during the exhibition week

Hunterian Society —The coming session will begin with a dinner meeting at Simpson's Restaurant, Cheapside, on Monday, Oct 18th, at 7 30 P M., when Mr. Mortimer Woolf will give a presidential address on Pain. Later meetings will be devoted to discussions on Medicine and the Press, the Nervous Child, and other subjects, the Hunterian Lecture being delivered on Jan. 17th by Dr J M T Finney, of Baltimore, who has chosen to speak on the Influence of John Hunter on American Surgery The annual dinner of the society will be held at the Hotel Victoria on Feb 10th.

Course in Radiology and Electrology in Paris —On Oct 5th, and the following Tuesdays, at 9 A M , at the Beaujon Hospital, Dr Aubourg and Dr Joly will give practical demonstrations of deep X Ray Therapy in the Treatment of Tumours On Oct 8th, and the following Fridays, at 9 A M , in Dr Aubourg's Electrical Laboratory at the Beaujon Hospital, Dr Vignal and Dr Quivy will give practical demonstrations of Electrical Diagnosis and Treatment On request demonstrations will be given in English, and no fee will be charged

Opening of the Medical Schools —The following arrangements have been made in connexion with the opening of London medical schools —

St Bartholomew's Hospital —Old students' annual dinner, Friday, Oct 1st, at 7 for 7 30 P M in the Great Hall of the Hospital Chairman Mr W T Holmes Spicer

St George's Hospital —Old students' annual dinner, Friday, Oct 1st, at 7 15 for 7 45 P M at the Hyde Park Hotel, Knightsbridge Chairman Captain C C Craig, M P Inaugural address, by Dr Graham Little, on Oct 1st, at 3 P M , in the board room

Guy's Hospital —Dr John Fawcett will distribute the prizes for the past year on Tuesday, Oct 5th, at 3 P M , and afterwards give an address to the students

King's College Hospital —Introductory address by Sir Humphry Rolleston, Friday, Oct 1st, at 2 30 P M , at the Medical School, Denmark Hill Annual dinner of past and present students on the same day at 7 for 7 30 P M at the Criterion Restaurant, Piccadilly Chairman Dr F Jacob

London (R F H) School of Medicine for Women —Introductory address by Sir Walter Fletcher, Friday, Oct 1st, at 3 30 P M., at the Medical School

St Mary's Hospital —Annual dinner of past and present students, Monday, Oct 4th, at 7 for 7 30 P M , at the Connaught Rooms, Great Queen-street, W C

Middlesex Hospital —Introductory address by Prof Thomas Yeates, Friday, Oct 1st, at 3 P M , at the Queen's Hall, Langham-place, followed by prize distribution by the Archbishop of Canterbury Annual dinner of past and present students of the school on the same day at 7 30 P M at the Savoy Hotel Chairman Mr Victor Bonney

Westminster Hospital —Inaugural address by Sir Archibald Garrod, Friday, Oct 1st, at 3 P M , in the board room

Donations and Bequests —Miss Lucy Gordon Roberts, of Brockenhurst, Kent, besides many other bequests, left £1500 to the People's Dispensary for Sick Animals of the Poor, £600 to King Edward's Hospital Fund, and £400 to the Battersea General Hospital —Mr James John Chiswell, of Kingsway, Holborn, W C , left on the death of his wife £1000 to Guy's Hospital and £500 each to Dr. Barnardo's Homes and St. Dunstan's Hostel for the Blind —Miss Dora Cruddas, of Haughton Castle, Northumberland, bequeathed £20,000 to St John's College, Durham, £3000 to Dr Barnardo's Homes, and £2000 each to several institutions, including the Royal Victoria Infirmary, Newcastle-on-Tyne —Mr John Ditchfield, of St. Anne's-on the Sea, and Manchester, left £250 to St Mary's Hospitals, Manchester, and £100 each to the Manchester Royal Infirmary and Ancoats Hospital, Manchester —Mr John Alexander Hodgman, veterinary surgeon, Barnsley, left £1000 to the Becket Hospital and Dispensary to endow a bed —Mrs. Maria Beard, of the Mount, Ashbourne, Derbyshire, left £2000 each to the Oldham Royal Infirmary, Dr Barnardo's Homes, and the Blinded Soldiers' and Sailors' After care Organisation, £1000 to the Derby Infirmary, and £300 to the Victoria Memorial College Hospital, Ashbourne —Mrs. Louisa Thomson-Price, of Hampstead, N W , left subject to a life interest £1000 to endow a bed in the Elizabeth Garrett Anderson Hospital, Euston-road —Mr Thomas Harry Rose, J P , of Oxford, left £1000 to the Radcliffe Infirmary and County Hospital, Oxford, and £350 to the Oxford Eye Hospital —Dame Mary Anne Anderson, of Beechwood, Murrayfield, Edinburgh, widow of Sir George Anderson, left the property Beechwood and £5000 to the Edinburgh Royal Infirmary, £5000 to the Senatus Academicus of the University of Edinburgh, and £2000 to the Royal Infirmary, Dundee —Lord Rothermere, honorary treasurer of the "Fleet Street Week" for St Bartholomew's Hospital, has given £5000 to the fund

NEW SCHOOL CLINIC, BIRMINGHAM —On Thursday Sept 30th, Sir Humphry Rolleston will open a new school clinic in Sheep-street, Birmingham

Dr Andrew Balfour Director of the London School of Hygiene and Tropical Medicine will, next month, attend the fiftieth anniversary celebration of Johns Hopkins University, Baltimore, and will deliver an address at the formal opening of the new building of the School of Hygiene and Public Health of that University

PLYMOUTH "PENNY IN THE POUND" SCHEME —This scheme, organised by the Plymouth Voluntary Hospitals Committee, has made rapid progress, and it is expected that the total raised in the financial year which expires this month will reach £14 500 Last year it was nearly £11,000, and the year before a little over £6000 There are now close upon 40,000 contributors

PRESSURE OF EMERGENCY CASES —Bolton Infirmary is being greatly embarrassed by the increase in emergency cases On a recent occasion, while six operations were being performed six casualty cases were admitted in half an hour, each requiring immediate attention During August 356 new casualty cases were treated a considerable proportion of them the result of motoring accidents

HOSPITALS WELFARE SOCIETY —Last week Sir George Hume M P chairman of the London County Council, broadcasted an appeal on behalf of the Hospitals Welfare Society Its object is to help five hospitals in South-East London—the Miller, the Seamen's, the Blackheath St John s, and the South-Eastern—by weekly house-to-house collections, and in six years £25,000 has been raised in this way, about £100 a week is now collected The organisers of the scheme are urging its adoption by hospitals which have no comparable assistance

PAPWORTH TUBERCULOSIS INDUSTRIAL SETTLEMENT —The annual report of Papworth Hall Sanatorium and Industrial Settlement, which has just been issued, shows that excellent progress is being made The sanatorium, which is a separate unit has treated 1778 cases in ten years, and there are now in the institution and the village 559 persons including 90 healthy children of ex-patients No child who was not suffering in a marked degree from tuberculosis before going to live in the colony has shown any sign of infection After the experience of a decade, the medical director, Dr P C Varrier-Jones, is confirmed in his belief that settlements of this kind are essential in combating tuberculosis The industries are described as a serious commercial concern, not trading upon sympathy

ROYAL INSTITUTE OF PUBLIC HEALTH —Problems of Personal and Public Health is the title of a course at the Institute which will begin on Oct 13th with a lecture by Sir William Willcox on Intestinal Infection in Relation to Personal Health and Disease The four next lectures will be on the following subjects · The Prevention and Treatment of Eczematous Conditions of the Skin of Occupational Origin, by Dr W J O'Donovan, on Oct 20th , Town Planning in Relation to Health, by Prof L P Abercrombie, on Oct 27th ; Ventilation in Relation to Health, by Dr H. M. Vernon, on Nov 3rd , and Industrial Psychology Applied to the Home, by Prof Winifred Cullis, on Nov 10th. Particulars will be published later of the remaining lectures of the series, which are to be given by Dr R. H. Miller, Dr C W Saleeby, Dr P C Varrier-Jones, and Lieut - Colonel F E Fremantle All of them will be delivered on Wednesdays at 4 P.M. in the Lecture Hall of the Institute, 37, Russell-square, London, W C 1

MAUDSLEY HOSPITAL, DENMARK HILL —During and after the second week of October three series of clinical lectures illustrated by cases will be held On Mondays Dr W Moodie will deal with Relations of Mental Disorder to Physical Conditions ; on Wednesdays Dr Edward Mapother will deal with Neurotic and Psychotic Syndromes , and on Fridays Dr W S Dawson will deal with Mental Symptoms and their Genesis, the hour of all lectures being 2.30 P.M. In addition a discussion on cases in the Mental Hospital will be held in the wards every Tuesday at 11 30 A.M and monthly, on the last Friday of each month, at 4 30 P M when a group of patients from one of the L C C mental hospitals will be shown. These discussions are open to medical practitioners without fee Posts as clinical assistant can be obtained on application to the Medical Superintendent The course of lectures and practical instruction for the Diploma in Psychological Medicine will be held at the above hospital beginning in January next The lectures and demonstrations are given in series, and either group can be attended separately The fee for the course is ten guineas, or for a single series two guineas, payable to the Fellowship of Medicine, from which copies of the syllabus may be obtained.

HOSPITALS AND THE COAL STRIKE —Hospitals in the coalfields and in a minor degree those in industrial districts are suffering from the long continuance of the deadlock Sunderland Royal Infirmary for example, is losing about £300 a week in reduced workmen's subscriptions The subscriptions of employers who contribute on a wages basis are also seriously reduced The loss on workmen's contributions already reaches about £5000

THE LATE DR A M MCALDOWIE —After living in retirement at Cheltenham for many years Dr Alexander Morison McAldowie died on Sept 4th at the age of 74 He was born at Aberdeen and studied at the University there graduating, with highest honours as M B in 1875 and M D in 1879 In the year after qualifying he took up an appointment as resident house physician to the North Staffordshire Infirmary and this he held for four years Afterwards settling in practice at Stoke-on-Trent, he was in 1889 appointed honorary physician to the Infirmary, and became well known in the midlands especially for his work on lead poisoning amongst pottery workers He was an important witness at the inquiry held at Stoke by Lord James of Hereford about 25 years ago when he gave an account of experiments made on himself to discover the effects of slow lead absorption Dr McAldowie's keen logical faculty fitted him to be a neurologist, and he contributed a number of articles to *Brain* His abilities were recognised by election as F R S Edin , and in 1898 he was President of the Staffordshire branch of the British Medical Association But his interests extended far beyond his work He was President of the North Staffordshire Field Club to which he read papers on archæology and natural history, and he wrote a book on " The Birds of Staffordshire " On retiring in 1906 he went to live in Gloucestershire and enjoyed similar leisure pursuits During the war he went back to medical work again as honorary surgeon to the Leckhampton Voluntary Aid Detachment Hospital, to which he gave devoted service Dr McAldowie leaves a widow, a son and three daughters

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST GRADUATE HOSTEL, Imperial Hotel, Russell-square, W C
MONDAY Sept 27th.—9 P.M., Prof B J Collingwood will open a Discussion on Hydrogen-ion Concentration in Health and Disease
THURSDAY —9 P M , Dr Andrew Balfour will open a Discussion on The Acclimatisation of the White Man in the Tropics
All medical practitioners cordially invited

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W C
THURSDAY Oct 7th.—4 P M , Dr Cockayne Rickets as it is seen to-day

ANCOATS HOSPITAL POST-GRADUATE COURSE
THURSDAY Sept 30th —4 15 P.M., Mr Harry Platt Treatment of Common Injuries Sprains and Minor Injuries of Joints, Muscles and Tendons

ST MARGARET S HOSPITAL FOR WOMEN, Acomb street, Whitworth Park, Manchester
WEDNESDAY Sept 22nd.—4 P M President's Address Social Meeting Mr A C Magian The Uses and Abuses of Curettage

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSES
TUESDAY Sept 28th.—4 15 P M , Mr C Roberts The After-treatment of Surgical Cases
FRIDAY —4 15 P.M , Dr R. Veitch Clark General Survey of Cancer Incidence

BRITISH INSTITUTE OF PHILOSOPHICAL STUDIES, 88, Kingsway, London W C
A course of Lectures on the following subjects will begin on Oct 4th —
Mind and Matter The Hon Bertrand Russell F R.S Medical Psychology T W Mitchell M D The Development of Philosophy since Kant Prof G Dawes Hicks Ph D Litt D The Problems of Philosophy The Hon Bertrand Russell. Psychology Prof C W Valentine D Phil.
Full syllabus on application to The Director of the Institute

Appointments.

Cunningham, R. G , M B , Ch B Edin , has been appointed one of the Medical Referees under the Workmen's Compensation Act, for the Districts of the Consett, Durham, Seaham Harbour, and Sunderland County Courts

Owen, D Rhydwyn, M B , B Ch , B Sc , Assistant Medical Officer, Glamorgan County Mental Hospital, Bridgend

Vacancies.

For further information refer to the advertisement columns

Belgrave Hospital for Children 1, Clapham road S W —H S and Asst H P At rate of £100 each

Birmingham, Highbury Group of Hospitals —H P £350

Cardiff City Mental Hospital, Whitchurch —Sen Asst M O £550

Cardiff Royal Infirmary —Ophth H S At rate of £50

Croydon General Hospital —Pathologist and Bacteriologist (Part-time)

Dominica, British West Indies —M O H £1000

Doncaster Royal Infirmary and Dispensary —Third H S At rate of £150

Dublin, St Vincent's Hospital —Asst S to Out patient Dept

Grosvenor Hospital for Women, Vincent-square, S W —Hon Reg

Hospital for Consumption and Diseases of the Chest, Brompton, S W —Phys Also Asst Res M O At rate of £150

Hospital for Epilepsy and Paralysis, Maida Vale W —Res M O and H P At rate of £150 and £100 respectively

Hospital for Sick Children, Great Ormond street, W C —H S , H P , and Asst Cas O Each at rate of £50

Ilkeston Borough —M O H and School M O £800

London Hospital Dental School, E —Asst Dental Anæsthetist £25

Miller General Hospital for South-East London, Greenwich road, S E —H P £125

Norwich City —Temp Asst School M.O £11 11*s* weekly

Paddington Green Children's Hospital, W —H P and H S Each £150

Prince of Wales's General Hospital, Tottenham, N —Two H S 's and H P Each at rate of £120 Also Jun H S and Jun H P At rate of £90 each

Queen's Hospital for Children, Hackney road, E —P in charge of Skin Dept

Royal National Orthopædic Hospital, 234, Great Portland street, W Surg Reg £100

St John's Hospital, Lewisham, S E —Res Cas O At rate of £100

South London Hospital for Women, South Side, Clapham Common, S W —Clin Asst £1 1*s* per attendance

Swansea Hospital —H P £150

Willesden General Hospital, Harlesden road, N W —Res H S and Non Res Cas O Each at rate of £100

Births, Marriages, and Deaths.

BIRTHS.

McKendrick —On Sept 16th, at Sanquhar, Blackwood, the wife of Wm McKendrick,, M B , Ch B , of a son

Moore —On Sept 13th, at Mundens, Malmesbury, the wife of Reginald M Moore, M B , of a daughter

Walker —On Sept 14th, at a nursing home, Aberdeen, the wife of Edward R C Walker, M B , Ch B , of a son

Wall.—On Sept 17th, at the Victoria Nursing Home, Shanghai, China, the wife of A D Wall, M B , F R C S , of a daughter

MARRIAGES

Elkington—Springett —On Sept 1st , at Ringmer, Sussex, Capt Eric H W Elkington, R A M C , to Margaret Evelyn Springett, younger daughter of the late Arthur R and Mrs Springett, of Montreal, and granddaughter of the late Sir Alexander I Galt, first High Commissioner of Canada

Hislop—Cowan On Sept 13th, at Rosehall Church, Edinburgh Major J H Hislop, M C , I M S , to Jenny, daughter of Sir John Cowan, LL D , and Lady Cowan, Edinburgh

Lloyd—Buley —On Sept 14th, at the Church of the Oratory, Brompton-road, London, Neville Langdon Lloyd, M B , M R C P , to Nora, daughter of Mr and Mrs A G Buley, of Onslow near Guildford

McCallin—Charlton —On Sept 14th, at All Saints' Church, Whitstable, William McCallin, M D , M R C P , and Barrister-at-Law, Inner Temple, of Southampton, to Violet Mary, only daughter of Mr and Mrs C R Charlton, of Folkestone

McCormick—Irons —On Sept 14th at Shandon United Free Church, Edward William McCormick M B , Ch B to Moyra Hope, youngest daughter of Mr and Mrs J J Irons, of Chapelburn, Shandon, Dumbartonshire

DEATHS

Rowe —On Sept 17th, at Shottendane, Margate, Arthur Walton Rowe, M B , M R C S , F G S , &c , late Major, R A M C

Smith —On Sept 19th, Walter Richard Hugh Smith, M D , Senior Assistant Medical Officer, Salop Mental Hospital, Shrewsbury

N B —A fee of 7s 6d is charged for the insertion of Notices of Births, Marriages, and Deaths

Notes, Comments, and Abstracts.

WHAT IS A MENTAL ILLNESS?*

By Noel H M Burke, M R C S Eng , D P M Lond.

(Concluded from p 631)

The Medical Point of View

Paranoia —Just as we can imagine that a man is distinctly more mental than an oyster, so we can imagine no more obviously mental illness than paranoia The most ardent toxic-absorptionist could hardly regard a well-developed paranoiac state as anything but purely mental The subject, or patient, is perfectly well in body while alive, there is no morbid change to be found when he is dead His trouble is that he cannot reason reasonably on certain subjects, but persistently forms erroneous judgments and backs them with emotional belief Except within the field of the delusional system he is well Within it he is most certainly ill, yet one cannot explain by any neural or other physical theory his fondness for projecting his own ideas on to others or for persisting in the most irrational of false beliefs So much for a quite superficial review A deeper investigation by any sort of psychological approach makes the mental quality more plain by gradually unfolding the mechanism and causation of the illness The kind of picture obtained is of a man whose achievement has never approached to his ambition, and who has compensated for his failure by giving himself success in phantasy and by believing his phantasy to be reality This he has done time after time, and the further you look into his life the further do you trace the process But the psycho-analysts, who seem to be the only people who are doing thorough and exhaustive research in the psychological side of these matters, tell us that there is more to be known. They say they have reduced this disease to its simplest and most fundamental constituents, and that it depends on a failure of libido development at the later anal-sadistic stage, where the individual has passed a little beyond narcissism, but has not achieved to full object love Whether we go the whole way with the Freudians or are satisfied with a more modest psychological view, we can feel confident that such a disease as paranoia, whose only symptoms are mental ones and whose only explanation or presently known causation is mental, should be classed as a mental illness within the terms of the definition

Compulsion and Obsessional States —Another group of symptoms that represents an illness of equally mental quality is that of the compulsion and obsessional states One man was miserable whenever the number 13 came in contact with him, even in so subtle a form as a morning greeting so phrased that it contained 13 letters He adopted a device of adding some word so that the danger of 13-ness was warded off Another was compelled to read murder news in the daily papers though it frightened him to do so Another, if he read or thought of anyone in any kind of trouble or distress, had to read or think again, being sure that he did so with his mind attuned in kindliness and sympathy towards the sufferer There is a kind of neural explanation for this and similar disorders of conduct and emotion—namely, the conditional reflex This substituted stimulus reaction is, however, merely the neural mechanism of a part of habit formation It does not explain the whole of habit formation in the human being, and it does not appear to meet fully the case of the widespread psychological substitution through several stages that is found in the obsessional neurosis There does, however, seem to be a satisfactory explanation of the symptoms by the psychological mechanisms of repression and displacement of the affect from the repressed conflict situation to other situations which can be treated as substitutes for it The work of the analytic school seems to show a basis in failure in early infantile development, the conflict depending on love and hate towards the same object There is no morbid anatomy of this disorder, and experience shows that the best chance of improvement lies in a course of treatment by psychological methods

Dementia Præcox —We now come to a more doubtful condition, dementia præcox It is possible to argue that this is not a disease entity, it covers so wide a field with so varied a range of appearances, and its results are so uncertain On the whole, however, it is usually accepted as a fairly satisfactory entity with large subtypes It is more difficult to decide whether it should be classed as a mental or a physical disease On the one hand there is a physical pathology and it has to be accounted for, on the other hand, there is a psychopathology, and this, too, must be considered For the physical theory one must consider the presence of immature cortical cells, of degenerated cortical cells and of areas of gliosis, that have been described by various observers Again, there are the regressive atrophic changes in the cells of the testes and other endocrine glands which have been demonstrated by Mott and his co-workers All these and other evidences that have been found point to a structural defect, and certainly some cases of dementia præcox seem to merge into the group of mental defectives Against the physical theory one finds that at the other end of the series of cases in this category the condition merges into the paranoid class, and in fact there is a fairly complete series of types bridging the gap between the purely physical and purely mental extremes. The psychic symptoms of negativism, impulsiveness, tendency to mannerisms and to phantasy, and general failure to meet reality are fairly general and typical The analytic view, as shown in Abraham's scheme, claims that dementia præcox dates to breakdown of libido development at the earlier oral (sucking) stage, at the level of objectless auto-erotism It is difficult to adduce evidence based on results of treatment. A number of cases that appear to be developing into dementia præcox come for treatment and seem to be arrested We all think we have had this experience, but it cannot be proved, for none can say with scientific accuracy what would have been The cases of fuller development get very little chance of thorough psychological treatment. They go where these things are not done Can one come to any conclusion about this disease? It seems that we do not know enough about it yet The evidence is conflicting and we may believe but we cannot yet know.

Manic Depressive.—Another series of cases comes under the group of manic-depressive psychosis, and here again there is room for doubt. In each phase there is bodily illness In the depressed phase there are a number of symptoms suggestive of a hypothyroidism and another set resembling the Parkinsonian syndrome. In the maniacal phase the patient is thin anæmic, and below normal but shows hyperæsthesia and motor excitement instead of the reverse as in the depressive period Many have concluded that this is an organic disease depending on some disturbance of blood pressure or of endocrine balance or on toxic absorption. Even Stoddart, in his 1921 edition, elaborates a theory of intraneuronic intoxication which provides an ingenious physical explanation for the various symptoms of the disorder, but does not satisfactorily account for the whole pattern of the illness with its typical rhythms of alternation. He modifies this however by proceeding to give the psycho-analytic view of the disease as depending on infantile masochistic attitudes with phases of self-reproach, alternating with periods of elation at the winning of freedom from the hated object of the patient s love. It may be that the next edition will show a more decided bias to the psychical view

Acute Confusional States—Under the general heading of acute confusional insanity one can group the toxic and exhaustion insanities including such alcoholic conditions as physiological inebriation and delirium tremens. Here we deal with a frankly physical condition for which there is no real psychological foundation nor any but physical treatment. One must bear in mind that in, at any rate, one group—the puerperal—there may be a strong mental cause at work, as well as the physical, and we must return presently to the general consideration of the mental symptoms of this physical state.

General Paralysis—The definition of general paralysis of the insane is "a chronic progressive disease of the cerebral cortex, associated with psychic and motor disturbances leading to dementia and paralysis' Of all diseases having mental symptoms this has the largest list of physical signs and of pathological changes and it is quite clearly a bodily disease The whole of the active treatment is based on this view and consists of devices to destroy the spirochæte and its toxins Beyond this nothing is done but to protect the patient, so far as is possible, while passively waiting for the inevitable progress of the disease.

Mental Symptoms of Organic States

We can now consider the mental aspect of these and other organic states In the toxic group there is mainly confusion rather than emotional disturbance. The patient cannot understand and think clearly he cannot even perceive clearly He has clouding of consciousness, fleeting delusions, and always shows hallucinations He may be in any state between delirium and stupor

There is no systematisation of the mental state that can be regarded as peculiar to this physical disorder Some resemble the depressed or exalted periods of manic depressive The katatonic variety is like the katatonia of dementia præcox In the cases associated with childbirth Cole describes three periods of onset with differing mental pictures. The woman who falls ill during pregnancy tends to show a condition resembling manic depressive. If she develops her trouble shortly after the birth of the child she shows a depressed and melancholic picture, while the case developing at or about parturition is likely to be a katatonic or an ordinary acute confusional.

The mental symptoms of general paralysis are summed up by Porter Phillips as the following Early change of personality and temperament irritability and restlessness, absent-minded, inattentive, preoccupied, loss of recent memory, impaired higher functions, and reasoning &c In general there may be exaltation, mania melancholy, delusion, or alternations between these. Beyond this one sees a progressive dissolution down to second childishness and mere oblivion. The mental picture is diffuse and ill-systematised, and lacks the definition and completeness of pattern that one finds in the purely mental illnesses

After all, the diagnosis of G P I. depends on the finding of varied mental derangements that do not conform to the pattern of any pure psychosis and on their alliance with certain definite physical signs The euphoria that is seen very early in this illness is, in a way, typical but not absolutely so for there is something very similar in disseminated sclerosis, which has never been called a mental illness It may be due, in both cases, to the presence of toxins in the cerebro-spinal fluid and their effects on the same areas of brain tissue. Some cases of encephalitis lethargica are reported to have begun with a feeling of extreme well-being which may perhaps have a similar explanation.

Gross Cerebral Lesions—If we turn to the mental disturbances following other gross brain lesions such as tumours, thrombosis and softening, and cortical atrophy we find a rather similar picture of diffuse ill-organised changes with a progressive and general deterioration. When there is systematisation of the mental change it resembles one or other of the accepted psychotic or psychoneurotic diseases. For this resemblance it is possible to find an explanation. It is suggested that interference with physiological function in the higher cortical regions of the brain interferes with that which in phys ological language is inhibition, and in psychological language is repression. If this be so, then we must take it that with a damaged brain cortex we may be unable to maintain control over such fundamental desires as we may have mastered previously and they will—by *relative* increase of strength though not by actual increase—become manifest in the form of the appropriate mental illness

This explanation, if a true one, opens up two lines of thought. In the first place it would seem to show, what may be true, that there are very few individual forms of mental illness that are possible to us Stoddart, in his classification gives about ten under three main groups of neuroses, psychoneuroses, and psychoses It may be that, as time goes on, these ten will be reduced to about half that number In the second place we are thrown up against the problem of the relation between cortical function, which belongs to physiology, and repression, which belongs to psychology The problem is beyond the limits of this paper

Summary of Medical Evidence

Summing up what we have noted in this survey of diseases showing mental changes, we come to a view of mental illness in which the medical outlook corresponds very closely with the psychological and with the philosophical.

It appears that we may devise a kind of medical philosophy in which disease process will be regarded as, in a way, a unity having manifestations that vary with the precise cause at work in each case, and with the location of the chief disorder At the one end of a long series there is purely physical disease with no mental change at all or, as we saw earlier none that has importance. From here we move through a gradation of differences, through physical disease showing mental symptoms, and mental disease showing physical symptoms, to diseases that are purely mental and have no physical aspect or, at any rate, none that is practically important. By way of example one might consider at one end a broken leg, next paralytic dementia or G P I next anxiety neurosis, and lastly paranoia. In the middle one would have to put manic-depressive and dementia præcox as being still uncertain in ætiology They both have the appearance of being very mental in quality, but they also are under suspicion of being very physical as well.

Epilepsy—We can illustrate the whole series by a group of conditions that have all, at one time or another, been classed as epilepsy Epilepsy, of course, means only "the falling sickness" and the sick people who fall in this peculiar way can be ranged in a line having at one end those with gross brain lesion and resulting Jacksonian fits, and at the other those with no known or discoverable physical lesion but definitely mental fits—the hysterical fit cases It is not possible to draw a line between, so as to separate the purely organic from the purely functional The Jacksonian attack is not a necessary sequelæ of brain lesion, an apparently mental type of fit may be determined by brain lesion, a Jacksonian may be imitated by attacks due to emotional disturbance, and so on In the middle, somewhere, is the diminishing group of true or idiopathic epilepsy The physical school claims it, and now the psychological school claims it as representing cases of undeveloped, somewhat defectively made people of peculiar personality who are sexually infantile in mind and express the effects of this attitude in their attacks Allied to this series are asthmatics and sufferers from migraine

What at present seems to underly the whole is a spasmophilic condition of unknown nature, perhaps functional, whose existence enables its possessors to have fits when stimulated by the appropriate method This in some cases is a mechanical injury, in some a toxæmia, and in others an emotional situation

The Social Point of View

We can deal very briefly with the social attitude to the question, "What is a mental illness?" Society is not at present concerned with problems of ætiology or of scientific accuracy Up to recent times its only concern was its own comfort From this it followed that any person who was so disordered in his behaviour as to be too great a nuisance was put where he no longer bothered More recently there has grown up some care for the patient himself, as shown by the idea of protecting him and making his lot more comfortable The social point of view to-day is therefore that a person is insane if he needs care and control for the protection of others *or* of himself

There are signs, however, of the growth of a still wider and more reasoning view of mental illness as a social problem Public opinion is turning towards recognition of the very great number of citizens who suffer from some form of mental illness, to the hardships they consequently undergo, and to the loss they cause to the community as expensive and inefficient members It is therefore beginning to look for means of lessening the problem by prevention, and we have evidence of this attitude in the insistence, by almost every witness before the recent Royal Commission, on the necessity of the provision of better facilities for early treatment of mental illness

With this view we can all agree, and it will do no harm if we decide at an early date what a mental illness really is

LIFTING OF HEAVY WEIGHTS

THE Woollen and Worsted Textiles (Lifting of Heavy Weights) Regulations, 1925, apply only to weights lifted by one person—i e, they do not fix any maximum limit for weights lifted jointly by two or more workers The Home Secretary proposes to amend them to secure that where two or more workers are concerned, the total weight, when divided by the number of persons employed, shall not exceed the maximum limit allowed for the individual worker, or, where the workers belong to different categories, the maximum limit fixed for the worker in the lowest category concerned He hopes that this proposal will be accepted without question, but if any person desires the Regulations to be further considered, he should lodge an objection at the Home office in proper form not later than Oct 20th

FLY PREVENTION IN BERMUDA

THE group of coral islands in mid-Atlantic, known as Bermuda, is so densely populated (600 to the square mile) that intensive cultivation is needed for the fields which lie on a bed of aeolian limestone Motor transport being forbidden, the horse-population of 150 to the square mile provides a good supply of manure and on it in a climate so moist and warm, flies thrive Enteric fever is endemic, so that fly prevention is of the first importance The manure cannot be burned for economic reasons, spreading was tried, but abandoned, for in that windswept spot the ambient air became filled with horse litter, spraying with fly-deterrents killed only the larvæ near the surface of the dumps Major E B Allnutt[1] remembered the advice given by Lieut E Baber, South African M C (THE LANCET, 1918, i, 471), to pack the manure firmly together each day in a cell with impermeable walls and floor so as to secure a temperature of decomposition high enough to destroy the developing fly larvæ Storage was done in pairs of cement-faced cells, 5 ft by 5 ft by 2½ ft wide, just large enough to take the manure of a horse for ten days The larvæ, as they hatched out, finding the centre of the mass too hot to hold them, moved to the cooler periphery, whence they were raked off and pushed into the hot centre of the mass The cement floor extending a foot forward of the heap ends in a water channel containing 2 in of weak cresol, into which the larvæ which attempt to reach the cool earth outside in order to pupate, fall and are drowned The gutter is finished on the outer side with an inverted J moulding which the larvæ cannot pass, indeed, Major Allnutt arranged a similar overhanging edge to each of the walls of these cells, so that escape was impossible in any direction and fly multiplication ceases When one cell is filled, its contents stand for ten days until all the larvæ are dead and the compost unattractive to flies, when it can be safely laid on the fields. Meanwhile the other cell of the pair is put into use Simple as is the mechanism and successful in his hands, Major Allnutt reminds those who would follow him that the control of flies requires constant supervision and unceasing labour

CHRISTCHURCH HOSPITAL, NEW ZEALAND

Dr P Clennell Fenwick has published a well written and admirably illustrated "Historical and Descriptive Sketch" of this hospital, of which he is consulting surgeon, accompanied by a separate "Review" of the radium and deep therapy department The hospital, which was established in 1862, stands upon a beautiful, but inadequate riverside site In its early days on a voluntary basis it had to contend with serious financial difficulties, but eventually it was supported partly from the rates and partly by a Government subsidy, and there have, in addition, been substantial private benefactions Thus a large ward was built and endowed by a Polish Jew settler in the dominion, while a lady gave a large block for chronic cases, and another benefactor the radium and deep therapy department, which possesses £8000 worth of radium and a Victor deep X ray machine which cost £4000 In the first 18 months more than 500 cases were treated, and the after-history of the patients is being carefully watched Also there is a large venereal disease department, and by means of an affiliated society the hospital organises health propaganda. Dr Fenwick is strongly in favour of provision for private paying patients The hospital controls more than a dozen provincial hospitals, sanatoria, homes, and orphanages

A WANDERING TUMOUR.

To the Editor of THE LANCET

SIR,—I should like to get an explanation of a case I record below

I was shown a child 1 year and 6 months old The history was that the child had suffered from no mentionable injury, but that a tumour was found in the ischiorectal region in May, 1926, when a medical man was consulted who prescribed an ointment for external use In June it remained as it was, so a specialist in the diseases of children was consulted who gave similar treatment In July the tumour had disappeared, to the credit of the specialist's ointment, but a T-shaped glandular mass was felt in the iliovesical region of the abdomen The same specialist was consulted again, and advised removal of the mass by operation or the use of the same ointment The parents inquired if an X ray photo would elucidate the matter, but the specialist showed no special inclination for it In August the mass disappeared again, to the credit of the specialist's ointment, but I found that a mass had formed in the postero lateral part of the right thigh With the consent of the father, I removed the tumour under local anæsthesia, and found, as I expected, a needle The father immediately declared that he had all the time considered the tumour to have contained a foreign body Would it be right to say that the child had swallowed the needle some time before May?

I am, Sir, yours faithfully,
G L DESHMUKH
Bombay, India, Sept 1st, 1926

THE BIRTH OF UNIVERSITY COLLEGE

A SMALL book[1] by Sir Philip Magnus reproduces the centenary address which he gave at University College last April He did well in that address to recall the difficulties and obstacles which University College had to meet at its inception On the face of it the opposers of the scheme had some good grounds of disapproval The venture had a commercial appearance, the *Quarterly Review* described it as "a joint stock speculation in education of which the Dissenters and their friends were the principal shareholders," and the original funds were raised by an issue of £100 shares Among its principal supporters, moreover, were Francis Place, the radical and revolutionary tailor, and Henry (afterwards Lord) Brougham, whose reputation for scrupulous conduct stood none too high "The true Mr Facing-both-ways of Vanity Fair," said Peacock of him How, after a somewhat stormy youth, University College—known originally as London University—gave birth to the now existing university and took on a new name for itself as University College, London, must be read in Sir Philip Magnus's excellent little history, for the dream of its founders, of a University which "expands its portals with equal hospitality to all without distinction," has been realised to the full

---

[1] Journal of the R A M C, August, 1926

[1] The Birth of University College London, 100 Years Ago By Sir Philip Magnus, Bart University of London Press. Pp 29 1s